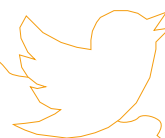
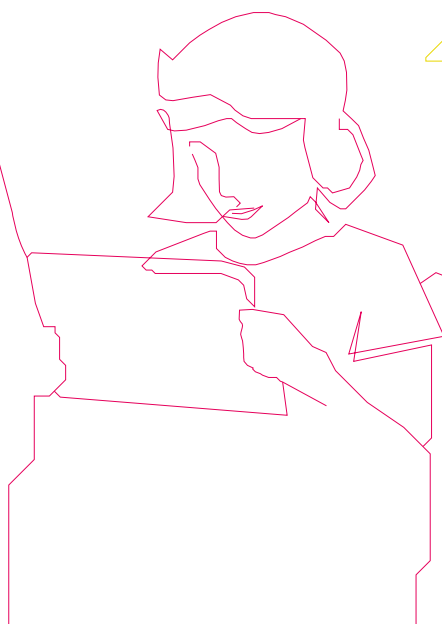
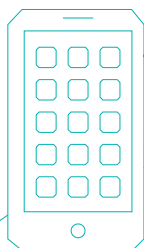




# THE NEXT DIGITAL DECADE:

CASE STUDIES FROM ASIA

VOLUME 1 - TRACES AND DIVIDES



# **THE NEXT DIGITAL DECADE:**

CASE STUDIES FROM ASIA

**VOLUME 1** – TRACES AND DIVIDES

# FOREWORD

We're thrilled to launch a 2-part series, *The Next Digital Decade: Case Studies from Asia*. Volume 1, titled '*Traces and Divides*', reflects the path these case studies take: tracing the impact of the Internet on society, politics, and life in Asia, while identifying the many divides that persist. Asian societies are increasingly "digitally transformed", but the effects are unequally distributed, and often amplify long standing power imbalances along multiple axes.

At the heart of this project is the intention to find work on the region from within it, and to expand the discourse to include emerging scholars with unique vantage points. In this publication you will find a wide range of themes and authors from over 10 different countries in Asia, featuring established scholars and practitioners, as well as early career academics.

Asia has often been framed as a recipient of knowledge, a passive beneficiary of global best practices, and a target of development. This volume celebrates a more circular, bi-directional exchange. The "Western" English majority Internet is no longer the dominant paradigm. Local communities, governments, and companies are developing new applications and innovations, embedding local cultures and ideas in governance frameworks, e-commerce, and social media, and de-centering online spaces away from the global North.

The case studies were accepted in 2020, edited across 2021 – in "pandemic time" – and are being published now. Each piece went through rigorous editing process, including anonymous peer review by senior scholars and practitioners, who helped mentor these pieces towards readiness. Due to the longer than expected publishing cycle, some of the pieces – such as those which assess the early responses to COVID-19 by Asian governments, serve as a unique snapshot of a very particular moment, rather than a definitive or up-to-date analysis. We opted to preserve this "fly in amber" characteristic.

These works would not see light of day without the support of our partners, Konrad-Adenauer-Stiftung, Singapore. We are grateful to Christian Echle, Katharina Naumann and Ming Yin Ho for being outstanding collaborators whose investment in the vision for this project never wavered. We are also grateful to our editor, Ruchika Chanana, and the design team at yellow too, for shaping the final outputs. Above all, we thank all of our authors, whose work we are proud to share.

We hope you enjoy the rich diversity of this collection, and we invite you to dip into "*Volume 2: Spaces and Futures*" next.

**Malavika Jayaram**  
**Executive Director**  
**Digital Asia Hub**

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**1**

# **DATA MONITORING AND TRACKING**









**AI-BASED  
STRATEGIES TO  
COMBAT  
WILDLIFE  
TRAFFICKING AND  
WET MARKETS  
IN ASIA:  
A CRITICAL REVIEW**

Natasha Rusch  
Payal Arora

# KEY TAKEAWAYS

- The world faces an uphill battle against the illicit wildlife poaching industry given its estimated value of US\$ 7–23 billion. It remains an attractive market as it is regarded as a high-profit, low-risk business. Artificial Intelligence (AI) based approaches promise to flip the script and make it a high-risk pursuit.
- To combat wildlife crime, the World Wildlife Fund's (WWF) programme identified four core pillars – stop the poaching, stop the trafficking, stop the buying, and international policy. For AI oriented strategies to be successful, it needs to intervene at all four levels.
- Given that half of the world's wildlife poaching takes place in Africa, and that this continent is plunging into recession due to the pandemic, the illicit wildlife trade is expected to gain strides. This has renewed the urgency for innovative AI based solutions and fostered partnerships between global technology companies and conservation organizations to rise to this challenge.
- This study maps the current AI-based challenges, initiatives, and voices from stakeholders and captures insights to important questions such as to what extent can/does AI mitigate illegal wildlife trafficking problems? What are the different beliefs among stakeholders about wildlife poaching and online trafficking and why? How is AI being embedded in these initiatives?
- There is a bias towards market-based solutions among the African stakeholders at a time when the international funding sectors in Europe are going against such measures. Cultural perspectives matter in AI-led enforcement, which demands local buy-in.
- Exorbitant costs to sustain AI interventions sit uncomfortably with major resource scarcities in pay for the rangers and their informant networks on the ground, still seen by conservationists as the most “intelligent” way to combat the trade.
- Anti-poaching tracking initiatives need to address ongoing dilemmas of data governance such as data cooperation vs data localization/ownership, and open science vs privacy/security to have real impact.

At US\$ 60,000 a kilogram, a rhino horn costs more than a pound of gold or cocaine, and according to the UN Environment Programme and Interpol, this illicit wildlife poaching industry has an estimated value of US\$ 7–23 billion.<sup>1</sup> The destination countries where this trade mainly takes place include China and Southeast Asia, which are considered a “biodiversity hotspot” at the centre of legal and illegal wildlife trade.<sup>2</sup> Asia’s market demand is largely driven by the use of these animals and animal products as collectables, pets, traditional medicines, and food. The attraction to this illegal trade is due to the prevailing fact that it is regarded as a high-profit, low-risk business.<sup>3</sup>

Wildlife trafficking can be parsed into three phases: the poaching activity in the source countries, the transit and transportation to the destination countries and finally the trade in the destination countries.<sup>4</sup> The source wherein about half of the world’s wildlife poaching takes place is African countries. The alarming rates of poaching have led to the endangering and/or possible extinction of many species, including elephants, rhinoceros, tigers, and pangolins. In Africa, an elephant is killed every fifteen minutes and in 2016, a rhino was killed every 8 hours.<sup>5</sup> To combat wildlife crime, the World Wildlife Fund’s (WWF) programme identified four core pillars – “stop the poaching,” “stop the trafficking,” “stop the buying,” and “international policy.”<sup>6</sup> They highlighted the high level of organised international wildlife crime involved, and intelligence-led law enforcement was described as being vital in deterring the illicit trade chains from source to market.<sup>7</sup>

Wildlife poaching and trading have come under added scrutiny due to the COVID-19 pandemic. Asian countries, particularly China, are under serious international pressure to ban all further wildlife trade, as the virus is suspected to

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- 1 Poaching Facts. 2020. “Rhino Poaching Statistics.” (<http://www.poachingfacts.com/poaching-statistics/rhino-poaching-statistics/>).
  - 2 Krishnasamy, Kanitha and Monica Zavagali. 2020. “Southeast Asia at the heart of Wildlife Trade.” TRAFFIC. (<https://www.traffic.org/publications/reports/renewed-game-plan-needed-to-tackle-southeast-asias-massive-wildlife-trafficking-problem/>).
  - 3 Krishnasamy, Kanitha and Sarah Stoner. 2016. “Trading Faces: A rapid assessment on the use of Facebook to trade wildlife in Peninsular Malaysia”. TRAFFIC. (<https://www.traffic.org/site/assets/files/2434/trading-faces-facebook-malasia.pdf>).
  - 4 Cusack, John. 2020. “The Illegal Wildlife Trade, Dollars & Sense.” *Financial Crime News*, 8 March. (<https://thefinancialcrimeneeds.com/the-illegal-wildlife-trade-dollars-sense-by-john-cusack/>).
  - 5 Poaching Facts. 2020. “Rhino Poaching Statistics.”
  - 6 WWF. 2020. “Wildlife Crime Initiative.” Panda.org. ([https://wwf.panda.org/our\\_work/wildlife/wildlife\\_trade/wildlife\\_crime\\_initiative/](https://wwf.panda.org/our_work/wildlife/wildlife_trade/wildlife_crime_initiative/)).
  - 7 Krishnasamy, Kanitha and Monica Zavagali. 2020. “Southeast Asia at the heart of Wildlife Trade.”

have emanated from the wildlife trade in a wet market in Wuhan, China.<sup>8</sup> As a result, in Asia, this trade has temporarily been banned, and further permanent laws are being drafted.<sup>9</sup> For instance, several law enforcement “milestones” have been achieved in response to the COVID-19 pandemic. As of June 2020, pangolins, the most trafficked mammals from Africa and Asia sold in the wet markets in Asia, have been removed from China’s traditional medicine treatments.<sup>10</sup> There is renewed optimism towards an ultimate ban on using wildlife in traditional Asian medicine. Nevertheless, animal products such as rhino horns and elephant tusks are still on medicine lists and illegal trading still prevails.<sup>7</sup> Moreover, as Africa plunges into recession and tourism falls rapidly due to the pandemic, poaching may gain added economic incentives.

Furthermore, with the wet market venues closing, online illegal wildlife trafficking has expanded exponentially via social media and e-commerce platforms, further challenging the effective detection of illicit trading.<sup>11</sup> Along with supply chain routes, global access to technology and connectivity has enabled a fast-growing platform for buyers and sellers to trade illegal wildlife. Importantly, trans-continental trade has expanded due to Asia’s wild populations being depleted. This has contributed to an increase in the demand for African wildlife in Asia.<sup>12</sup> Enforcement agencies are increasingly finding it difficult to detect illicit trading, especially due to the encrypted nature of the online transactions.<sup>13</sup> Thus, whilst the COVID-19 pandemic has resulted in the shutdown of wet markets and new laws in place to criminalise the sale of certain species, the fragmented and limited approach in tackling illegal wildlife trade is seen as a guarantee of the status quo, or even worse, of worsening the situation as global supply chains go online.

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- 8 Standaert, Michael. 2020. “Illegal wildlife trade goes online as China shuts down markets.” *Aljazeera*, 24 March. (<https://www.aljazeera.com/news/2020/03/illegal-wildlife-trade-online-china-shuts-markets-200324040543868.html>).
  - 9 Froehlich, Paula. 2020. “China and Vietnam finally ban wildlife trade due to coronavirus.” *New York Post*, 28 March. (<https://nypost.com/2020/03/28/china-and-vietnam-finally-ban-wildlife-trade-due-to-coronavirus/>).
  - 10 Briggs, Helen. 2020. “Coronavirus: Putting the spotlight on the global wildlife trade.” *BBC*, 5 April. (<https://www.bbc.com/news/science-environment-52125309>).
  - 11 Standaert, Michael. 2020. “Illegal wildlife trade goes online as China shuts down markets.”
  - 12 Krishnasamy, Kanitha and Monica Zavagali. 2020. “Southeast Asia at the heart of Wildlife Trade.”
  - 13 Briggs, Helen. 2020. “Coronavirus: Putting the spotlight on the global wildlife trade.”

To address these formidable challenges, AI is being developed to automatically monitor and investigate high volumes of online data to effectively prevent and disrupt this trade (see Table 1). In 2018, the WWF and the International Fund for Animal Welfare (IFAW) launched the “Coalition to End Wildlife Trafficking Online” (CEWTO), where currently thirty-four e-commerce, search and social media technology companies are collaborating with wildlife organisations to assist in combating this illegal trade.<sup>14</sup> Baidu, a Chinese multinational tech company and one of the largest AI and internet companies globally, is working with the CEWTO to develop AI solutions to detect listings of wildlife for sale.<sup>15</sup>

**Table 1: Digital Platforms Used by the Crowdsourcing Initiatives**

Company/ NGO/ Park/ Project	Type of Technology	Interviewees Involved in These Technologies	Country of Operations	Type of Park Management Utilising This Technology
Elephant Listening Project (ELP)	Acoustic Technology	Peter Wrege	<ul style="list-style-type: none"> <li>■ Democratic Republic of Congo</li> <li>■ Central African Republic</li> </ul>	Government with NGO management support
Rainforest Connection	Acoustic Technology	Topher White	15 countries in Africa, Asia & South America	Government & Community management
Air Shephard	Aerial Technology	Fei Fang	Test pilots in various African & Asian countries	Government Management & Conservation areas utilising SMART technology

<sup>14</sup> WWF. 2020. “Coalition to End Wildlife Online.” (<https://www.worldwildlife.org/pages/coalition-to-end-wildlife-trafficking-online>).

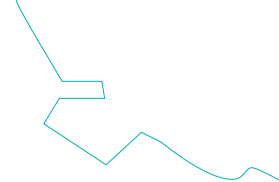
<sup>15</sup> WWF. 2020. “Coalition to End Wildlife Online.”

Company/ NGO/ Park/ Project	Type of Technology	Interviewees Involved in These Technologies	Country of Operations	Type of Park Management Utilising This Technology
PAWS	Patrol Technology	Patrick Flickinger, Shahrazad Gholami, Remko De Lange, Fei Fang	Test pilots in various African & Asian coun- tries Including: <ul style="list-style-type: none"> <li>■ China</li> <li>■ Malaysia</li> <li>■ Uganda</li> </ul>	Conservation areas utilising SMART technology
Smart Parks B.V.	Sensor and Animal Tagging Technology	Timothy van Dam	“African Parks” Conservancies	Private management & APU
TrailGuard AI	Camera Technology	(Unable to reach for interview)	Tested in Tanzania	Grumeti Reserve Private management

While much research in this area of conservation focuses either on AI-led anti-poaching measures to check supply or policies to deter demand, few studies emphasise the global supply chains that intersect transnational actors, in this case Africa and Asia. The difficulties in creating AI applications for online trafficking are to a certain extent due to different stakeholder interests driving the nature conservation field and the technology industry.<sup>16</sup> Therefore, it is essential to explore the diverse aspects of these socio-technical systems to address the significant and global challenges in eliminating wildlife poaching and trade, particularly of endangered species.

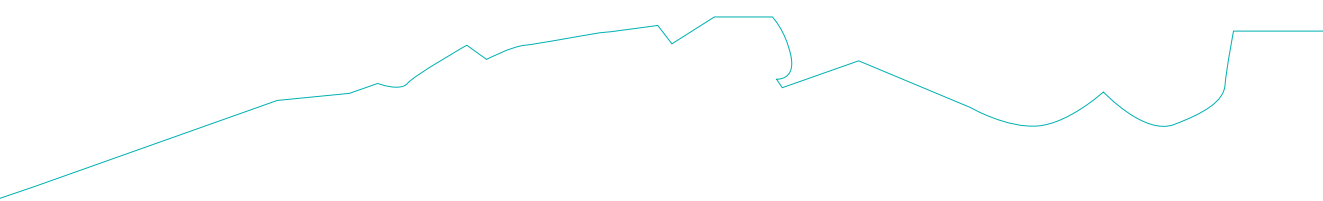
The focus of this research is to create a critical and holistic approach in deploying AI-led strategies to combat the poaching and illegal trade that spans digital and physical geographies due to the inherent global supply chains that enable this practice. Through a qualitative approach of in-depth interviews with diverse experts involved in

<sup>16</sup> Maffey, Georgina, Hilary Homans, Ken Banks, and Koen Arts. 2015. “Digital technology and human development: A charter for nature conservation.” *Ambio* 44, 4: 527–537.



combating this trade, we asked the following: to what extent can/ does AI mitigate illegal wildlife trafficking problems? What are the different beliefs about wildlife poaching and online trafficking and why? What are the biggest challenges and existing strategies in countering poaching and how is AI being embedded in these initiatives?

The study aims to provide cross-sectoral insights for stakeholders on the global value chains of wildlife markets and the use of AI anti-poaching applications to disrupt supply. Due to the increasing integration of AI and conservation, this work provides nuance to the relationship between the socio-technical systems of AI devices, the communicative and media ecologies of promoting such devices and responses from the various conservationist members of Asia and Africa. Given the economic pressures of the COVID-19 pandemic, the aim is to utilise these insights to further enable cost-efficient and proficient conservancy. ■





This case study incorporates a mixed-method approach of in-depth interviews of 15 diverse stakeholders across the global supply chains (conservation experts, NGOs and technology companies) and the thematic analysis of their initiatives (see Table 2). The stakeholder analysis method is recognised as a vital process for environmental and natural resources management, making this method applicable to this study.<sup>17</sup> The aim is to intersect diverse strategies on conservation, AI design, and deployment processes geared towards mitigating the illegal wildlife trade.

The interviews were conducted over a span of two months (April-May 2020). Multiple stakeholders, including supervisors of the rangers (N=4), conservationists (N=2), NGOs (N=4), and AI technology experts (N=7), were interviewed over Zoom. Purposive sampling was applied to this study, whereby non-random, selected individuals were interviewed based on their expertise and our access to them. We used thematic analysis to analyse the interview data, guided by the key concepts/codes that have emerged from the state-of-the-art literature in the domains of the conservation sector, AI usage, and global supply chains in wildlife trafficking. Through the initial coding process, a total of 162 codes were created, and further filtered and cross-coded to arrive at six overarching themes, namely: “tools using AI”, “anti-poaching strategy”, “trade disruption techniques”, “demand and crime”, “COVID-19” and “economics”.

Qualitative thematic analysis was also utilised to gain further insight into the media’s narratives about AI as well as the persistence of illegal wildlife purchasing. We critically analyse the CEWTO NGO application report that addresses and presents their views about AI tools to combat wildlife trade online. Overall, this research reveals the global political economy of this industry by mapping and critically analysing

- 1/ ranger/poacher experiences and perspectives in Africa;
- 2/ AI-based anti-poaching software design initiatives; and
- 3/ consumer markets in Asia. ■

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<sup>17</sup> Colvin, Rebecca M., G. Bradd Witt, and Justine Lacey. 2016. “Approaches to identifying stakeholders in environmental management: Insights from practitioners to go beyond the ‘usual suspects’.” *Land Use Policy* 52: 266–276.

## 1. Market Paradigm and AI for Conservation

Global conservation practice stems from “sustainable utilisation”<sup>18</sup> where wildlife laws are enforced, and wildlife is utilised in such a way that it does not jeopardise the continued survival of the species, begging the question of whether it is proven to work. Currently, conservation governance widely follows the trend of neoliberalisation, which entails the promotion of market-based instruments for the management of the environment.<sup>19</sup> The neoliberal logic alludes to a “win-win” conservation approach for all affiliated parties through the strategic extraction of natural resources.

In the interviews, the topic of applying market principles in conservation resurfaced, specifically regarding the legalising of the sale of rhino horns and elephant tusks. Nico Jacobs, the Co-Founder of the NGO Rhino 911, argues that the proceeds could be reinvested into conservation:

“We owe it to the animals to at least try to lift the ban, try the trade. Can you imagine if we start selling horns in South Africa? People will come out of bankruptcy and start breeding the animals with a passion. Because at this stage it’s a liability. It’s not an asset anymore... That same rhino, the heart that’s beating is worth 10,000 US Dollars but the horn is worth 180,000 US Dollars.”

Many of the Southern African countries are currently stuck with large ivory stockpiles due to global bans on exports to Asia and elsewhere. Olivia Mufute, Country Director for African Wildlife Foundation, explains that although there is concern that selling these remaining stockpiles could promote further poaching, given the scarcity of resources for conservation, the conservation areas would benefit greatly by selling them so they can reinvest that amount back into wildlife conservation.

The fact is that AI-led anti-poaching tools are designed primarily to detect poachers but not the poached products, such as rhino

<sup>18</sup> Duffy, Rosaleen. 1999. “The role and limitations of state coercion: Antipoaching policies in Zimbabwe.” *Journal of Contemporary African Studies* 17, 1: 97–121.

<sup>19</sup> Fletcher, Robert, et al. 2019. “Natural capital must be defended: green growth as neoliberal biopolitics.” *The Journal of Peasant Studies* 46, 5: 1068–1095.

horns. Using species identification tests to differentiate between the old stockpiles and newly poached products and standardised datafication of these processes<sup>20</sup> can serve as a valuable tool to allow for selective marketisation, nuanced policy-making and enforcement on tracking these products through the global supply chains. Strategic AI intervention can thereby resolve the long-standing conflict in the field of conservation regarding resource scarcity in conservation by capitalising on stockpiles though tracking their digital fingerprints. The ethical dilemma, however, remains in place.

The cultural dimension extends to the AI and ethics field as decisions are made about what these tools should do and why. A rethink of the universalisms of the ethical guidelines is needed on global wildlife conservation and animal cruelty in both Africa (the supply source) and Asia (the consumer source). Cultural conditions/perspectives matter in enforcement, which demands local buy-in. There appears to be a bias towards market-based solutions among the African stakeholders at a time when the international funding sectors in Europe are going against such measures.

## 2. Sustainability and Placement of AI in Conservation


TrailGuard AI has identified one hundred national parks that have the highest risks of poaching. AI cameras acting as an early warning system are due to be deployed at these parks by the end of 2020.<sup>21</sup> It is estimated that the equipment and infrastructure to protect these parks could be installed for about US\$ 4 million, all of which are said to have been donated.<sup>22</sup> With these massive donor investments and profits for technology companies, AI-led interventions in conservation are, not surprisingly, being driven by the technology companies. These exorbitant costs sit uncomfortably with the major resource scarcity in pay for the rangers and their informant networks on the ground to prevent anti-poaching.

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<sup>20</sup> Ewart, Kyle, et al. 2018. "An internationally standardized species identification test for use on suspected seized rhinoceros horn in the illegal wildlife trade." *Forensic Science International: Genetics* 32: 33–39.

<sup>21</sup> Inmarsat. 2019. "Inmarsat joins forces with RESOLVE to revolutionise fight to protect African wildlife" Press Release, 25 July. (<https://www.inmarsat.com/press-release/inmarsat-joins-forces-with-resolve-to-revolutionise-fight-to-protect-african-wildlife/>).

<sup>22</sup> FT.com. 2019. "Targeted action can stem illegal wildlife trade." *Financial Times*, 30 November. (<https://www.ft.com/content/ef8e379e-12a3-11ea-a7e6-62bf4f9e548a>).



The reality is that national parks can barely afford to pay their rangers, let alone invest in new technologies. It is noteworthy that all stakeholders, both within the fields of conservation and technology, discussed the tensions involved with obtaining adequate funding; yet, the extent of deprivation differed. While initial subsidies and grants are allowing AI into these conservation areas, there is a limited period to this funding. Additional upkeep and upgrading of the equipment, training of the staff, data storage, repairs and ecologically responsible disposal of the e-waste are not often included in the budgets allocated. It is evident that some of the simplest tools are not being implemented in these African and Asian conservation areas due to basic problems of connectivity, lack of electricity and digital literacy. Without the basic foundations in place, AI cannot be integrated in a sustained manner.

Our stakeholders reveal that to manage and create networks on the ground, rewards are needed to incentivise the provision of such information, and this is costly. The accumulation of intelligence will only go as far as the funding allows. NGOs describe that they often lack funds for paying off informants and that this limited funding is getting diverted to AI technologies. They argue that these AI-led initiatives do not have a clear insider-knowledge base and a starting point for assessing these terrains. Donations given to conservationists and NGOs are often earmarked for AI-based projects or come in the form of partnerships with technology corporations and are facilitated by transnational agencies.

The fact is that public-private partnerships between donors and tech companies come with a long legacy of using Global South communities as “testbeds for new technologies.” These “experiments” have led to the field suffering “chronic pilotitis,” an inundation of technology-initiated pilot projects with no clear steps for integration into the community.<sup>23</sup> Hence, it is essential to have a sustainable and community growth-led model that accounts for institutional building and investment into human resources, alongside AI-led anti-poaching technologies. Otherwise, there is a danger of repeating past failures.

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<sup>23</sup> Arora, Payal. 2019. *The next billion users: Digital life beyond the West*. Cambridge: Harvard University Press.

### 3. Re-Examining What Counts as “Intelligence”

Preventing poaching in protected areas necessitates prompt collection, analysis and reporting of data deriving from the field.<sup>24</sup> In this field of preventing poaching, there are diverse anti-poaching information systems implemented to support, enhance and gather data to strengthen anti-poaching tactics, namely: Global Positioning Systems (GPS), microchipping wildlife, drones, infrared cameras, sensors, acoustics, cybertrackers, and Spatial Monitoring and Reporting Tool (SMART).<sup>25</sup> These technologies enable the derivation of data for AI processing and help with the breakthroughs for AI for conservation.<sup>26</sup> To date, information technologies that enable AI for such purposes are aerial-based, patrol-based, acoustic-based, camera-based, and sensor-based. Multiple technology companies, research institutes and non-profit organisations are utilising/testing machine learning, a subset of AI, and AI algorithms to revolutionise efforts in conservation, including the Elephant Listening Project, Rainforest Connection, Smart Parks, Air Shepherd, Protection Assistant for Wildlife Security (PAWS), and TrailGuard AI.

Undoubtedly, intelligence is noted to be a vital element in AI-led anti-poaching strategies. Wildlife poaching is increasingly paying attention to “high” level and “smart” intelligence anti-poaching operations in which processed information about poachers can assist in crime prevention, apprehension, and conviction.<sup>27</sup> Technology is a principal factor where automation and AI are deployed in conservation decisions as “conservation by algorithm.”<sup>28</sup> For example, Gholami, a Data and Applied Scientist from Microsoft, explains how PAWS has been successfully pilot tested in the national parks of Uganda, Malaysia, Cambodia and China. PAWS utilises the data from SMART, which only gathers historical data, and provides insights based on its analyses of this data to the conservation area managers. Fang, an Assistant Professor at Carnegie Mellon, and an AI

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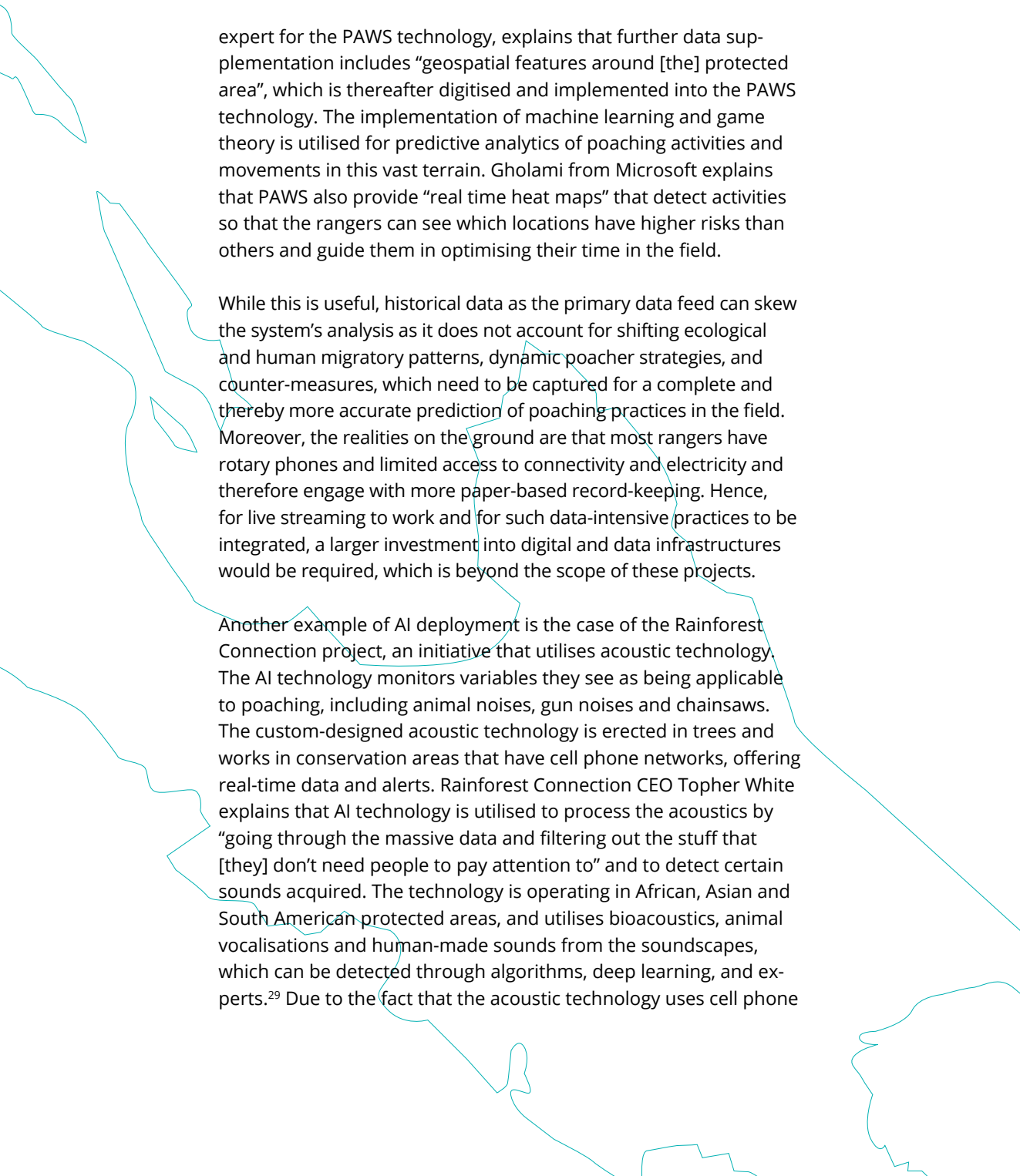
<sup>24</sup> Stokes, Emma J. 2010. “Improving effectiveness of protection efforts in tiger source sites: developing a framework for law enforcement monitoring using MIST.” *Integrative Zoology* 5, 4: 363–377.

<sup>25</sup> Pimm, Stuart L. et al. 2015. “Emerging technologies to conserve biodiversity.” *Trends in ecology & evolution* 30, 11: 685–696.

<sup>26</sup> Wearn, Oliver R., Robin Freeman, and David Jacoby. 2019. “Responsible AI for conservation.” *Nature Machine Intelligence* 1,2: 72–73.

<sup>27</sup> Singh, Jaidev, and Henk Van Houtum. 2002. “Post-colonial nature conservation in Southern Africa: same emperors, new clothes?” *GeoJournal* 58, 4: 253–263.

<sup>28</sup> Cowan, Devin, Christina Burton, and William Moreto. 2019. “Conservation-based intelligence-led policing.” *Policing: An International Journal*.



expert for the PAWS technology, explains that further data supplementation includes “geospatial features around [the] protected area”, which is thereafter digitised and implemented into the PAWS technology. The implementation of machine learning and game theory is utilised for predictive analytics of poaching activities and movements in this vast terrain. Gholami from Microsoft explains that PAWS also provide “real time heat maps” that detect activities so that the rangers can see which locations have higher risks than others and guide them in optimising their time in the field.

While this is useful, historical data as the primary data feed can skew the system’s analysis as it does not account for shifting ecological and human migratory patterns, dynamic poacher strategies, and counter-measures, which need to be captured for a complete and thereby more accurate prediction of poaching practices in the field. Moreover, the realities on the ground are that most rangers have rotary phones and limited access to connectivity and electricity and therefore engage with more paper-based record-keeping. Hence, for live streaming to work and for such data-intensive practices to be integrated, a larger investment into digital and data infrastructures would be required, which is beyond the scope of these projects.

Another example of AI deployment is the case of the Rainforest Connection project, an initiative that utilises acoustic technology. The AI technology monitors variables they see as being applicable to poaching, including animal noises, gun noises and chainsaws. The custom-designed acoustic technology is erected in trees and works in conservation areas that have cell phone networks, offering real-time data and alerts. Rainforest Connection CEO Topher White explains that AI technology is utilised to process the acoustics by “going through the massive data and filtering out the stuff that [they] don’t need people to pay attention to” and to detect certain sounds acquired. The technology is operating in African, Asian and South American protected areas, and utilises bioacoustics, animal vocalisations and human-made sounds from the soundscapes, which can be detected through algorithms, deep learning, and experts.<sup>29</sup> Due to the fact that the acoustic technology uses cell phone

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<sup>29</sup> Burivalova, Zuzana, Edward T. Game, and Rhett A. Butler. 2019. “The sound of a tropical forest.” *Science* 363, 6422: 28–29.

networks, the resultant effect is live streaming, thereby allowing for real-time responses from the rangers. Hence, it is important to build trust with technology at the start as it affects how people adopt and integrate new interventions.

The success of these strategies depends fundamentally on being sensitised to the socio-political and economic conditions of the target nation as well as its ecological uncertainties.<sup>20</sup> The efficacy of AI systems for conservation rests on quality and trustworthy intelligence. From our scholarship and findings, this fundamentally includes grassroots, on-the-ground “low intelligence”, which constitutes local-level informant networks and humbler forms of knowledge-making and sharing. Mike Ball, the Security Manager from Malilangwe Trust, describes that “90% to 95% of poaching comes from within [the] property.” Poachers, it seems, are often known and local. 98% of poachers are apprehended through information provided by informants in the community. Also, Ball states that his rangers have been approached by poachers to work for them, but instead they reported back to the organisation. He attributes this honesty to the fact that “they’re well looked after” – with decent salaries and support to maintain their informant networks. This keeps rangers from being tempted to change sides. A well-managed local operation is one of the most important contributory factors in enabling effective anti-poaching programmes for the protection of wildlife populations.<sup>30</sup>

Nevertheless, working with neighbouring park communities to create intelligence networks also has its challenges. Kuvawoga, from Painted Dog Conservation, explains that the communities are made up of people who are related. Therefore, there is a need to shift from individual to household and even kinship informant networks to best optimise these “low intelligence” sources as credible data for AI-based technologies. Reward systems should be designed accordingly. Furthermore, humbler technologies can aid AI in fostering a more robust system of information networks. Stakeholders within conservation state that generally they share their own successes and challenges with the various technologies on the market via WhatsApp groups and general “word of mouth”.

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<sup>30</sup> Watson, James, Nigel Dudley, Daniel B. Segan, and Marc Hockings. 2014. “The performance and potential of protected areas.” *Nature* 515, 7525: 67–73.

Overall, whilst increasingly sophisticated technology is being utilised to fight against wildlife poaching, it is noted that success lies in continuing to invest in building and sustaining trusted ground-level networks at the source market alongside the ramping up of AI-based frameworks and applications for monitoring the moving of the products to the Asian markets.<sup>31</sup> Our findings show that we need both the “high” and the “low” forms of data collection to enhance the process of detecting illegal wildlife poaching and trade. Unfortunately, in an age of techno-solutionism where it is believed that the latest tools promise the best results, alongside the realities of budget cuts for local staff, there are pushes for the cost-cutting of the human networks of “low intelligence” in favour of “smart” technologies.

#### 4. AI Technology Combating Online Trade: Double-Edged Sword?

In both Asia and Africa, the International Fund for Animal Welfare is operating online to detect illicit trade. Currently, machine learning and AI-driven technologies have not been thoroughly implemented in the conservation framework. Data mining on various social media platforms raises questions about the impact that data processing has on fundamental privacy rights and shared social and ethical values. With the stakes high in terms of extinction of entire species, the market is confronted with values that may conflict one another.

Research asserts that AI can drive a project to success for the “social good” of humanity.<sup>32</sup> However, whilst technologies can aid in conserving wildlife, “it is important that these tools themselves do not drive conservation efforts”.<sup>33</sup> Metrics can be improved through collaborations between machine learning researchers and conservationists. Also, once algorithms are released and utilised “in the wild”, this can improve the accuracy of the metrics. There is a need for a more holistic view of conservation practices; Sarah Savory, a conservation consultant from Africa Centre of Holistic Management, supports this approach,

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<sup>31</sup> Ball, Mike, Colin Wenham, Bruce Clegg, and Sarah Clegg. 2019. “What does it take to curtail rhino poaching? Lessons learned from twenty years of experience at Malilangwe Wildlife Reserve, Zimbabwe.” *Pachyderm* 60: 96–104.

<sup>32</sup> Castro, Daniel, and Joshua New. 2016. “The promise of artificial intelligence.” *Center for Data Innovation*: 1–48.

<sup>33</sup> Pimm, Stuart L. et al. 2015. “Emerging technologies to conserve biodiversity.”



stating that technology must be “tested within the context” as this form of management style “ensures that [they] test that every decision or actionable policy is leading [them] towards that context; socially, culturally, and environmentally.” Hence, technology should not drive conservation efforts, but rather supplement them.

Fang from Carnegie Mellon describes the setbacks encountered when conducting research for tracking wildlife trafficking and how AI should be situated strategically to be most effective. She explains that there are limitations to accessing social media and e-commerce images and textual data due to the data being on proprietary platforms and encrypted applications, thereby being very hard to retrieve. CEWTO, on the other hand, was able to utilise AI more effectively in this domain as the data was readily available due to the data platform owners themselves being partners of this organisation.<sup>34</sup> The CEWTO Coalition brings together e-commerce, search and social media companies across the world in partnership with three leading wildlife organisations, and aims to reduce wildlife trafficking online on company platforms by 80% by 2020.<sup>35</sup> This makes a case for technology companies to become more cooperative in conservation efforts.

Furthermore, Patrick Flickinger, the Senior Data Architect in the Microsoft AI for Good Research Lab, suggests that with the data from PAWS, their lab can make the APIs open to other conservation organisations and researchers around the world, so that they can reuse the same APIs inside their own pipelines. In this way the APIs provide an open system that can be used by conservationists to share poaching information with other stakeholders for further development of this AI technology. Open science data can, however, come with security and data ownership issues, especially today as nations, including those in the Global South, are entertaining the notion of data localisation, the mandatory storage of data in local servers.<sup>36</sup> Fang from Carnegie Mellon explains that in China, due to data localisation laws that restrict cross-border internet governance and data exchange, it can get complicated to operationalise such transnational collaborations for conservation:

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<sup>34</sup> WWF. 2020. “Coalition to End Wildlife Online.”

<sup>35</sup> WWF. 2020. “Coalition to End Wildlife Online.”

<sup>36</sup> Chander, Anupam and Uyen P. Le. 2015. “Breaking the Web: data localization vs. the global internet.” *Emory Law Journal*, UC Davis Legal Studies Research Paper 378. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2407858](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2407858)).

*□□ The only concern was that data transmission is a little bit hard because they need to make sure that the data stays in China, so we were able to find another additional collaborator who stays in China. This person would get the advice from us, the previous algorithms from us, and also get the data from them and then kind of integrate everything together to produce results."*

Hence, there are ways to navigate this terrain but it continues to be complicated as they demand far more stamina, persistence and commitment to the issue, which can deter some partnerships from happening.

Other various conservation areas which utilise a variety of wildlife trackers described issues with "closed systems." Timothy van Dam, the CEO of Smart Parks, states that the problem of using VHF/UCF technology is that these "smart" animal collars are very expensive, closed-sourced and use old technology, which contributes to their vulnerability as one can even catch the collars' signals with just a US\$ 25 equipment. This is why his organisation started "Open Collar," which is fully open source.

The call for an open and global collaborative effort goes against the current politics of data localisation and the nationalisation of data, and encrypted platforms and closed networks at play within the bigger trade wars between dominant players such as the United States and China. Yet, for conservation, while the talk continues about closed systems, there are more open collaborations between the technology and conservation communities, enabling them to utilise AI more effectively with the sharing of data across borders. ■

The wet markets and wildlife trade in Asia, particularly in China, have come under serious scrutiny due to the COVID-19 pandemic. As regulators, policy makers, tech innovators, conservationists and activists join forces to address this sector, there is a danger in implementing solutions that are piecemeal, fragmented and have the possibility of causing more confounding problems in the long run. This stems partly from looking at regions as contained units, where policy-making and technological governance disassociate from and even negate the intrinsic and complex matrix of relationships in the region vis-à-vis global, digital, and natural ecosystems.

In this study, we delve into Asian wet markets and wildlife trafficking by moving away from them; instead, we push the reader to look at the markets as part of global value chains and the political, digital and global economies, with a special focus on the source of the wildlife trade – Africa. Clearly, AI and institutional and policy interventions come with ethical dilemmas, of pushing for a marketised approach to sustainability due to the funding realities at the ground level against the morality of commodifying these endangered species. Further, high-end, “smart” technologies are humbled by the more mundane low-end but critical informant networks, and existing limited data/digital infrastructures. This demands a long-term investment into community-based networks, support for rangers, and pressure on governments to improve digital and data infrastructures for these AI-led technologies to be embedded within. Limited financial resources compel leapfrogging over the human to the technology, dooming AI centred conservation initiatives to possible failure. Sustainability considerations also push us to scrutinise collaborations between technology companies and development and government actors in terms of data governance, security and access. Global alliances are essential to tackling the problems humanity faces today, as they are intrinsically global and complex in nature – climate change, extinction of species, and pandemics. Therefore, this chapter argues that we need to go beyond the “human in the loop” trope in designing responsible platforms by recognising the specific motivations, rationales and networks that sustain the illicit in the global wildlife trade. By humanising the actors in the global supply chains, we may have a chance to boost conservation towards more sustainable ends. ■

**Table 2: Overview of Stakeholder Analysis**

<b>Company/NGO/ Park/ Project &amp; Country</b>	<b>Interviewee</b>	<b>Stakeholder Category</b>	<b>Job Position</b>	<b>Date &amp; Programme</b>
Africa Centre of Holistic Management & Zimbabwe	Sarah Savory	Conserva- tionist	Conservation Consultant & Author	28/04/2020 Zoom
AndBeyond & South Africa	Les Carlisle	Conserva- tionist (operating in field)	Group Conservation Manager	30/04/2020 Zoom
Big Life Foundation & Kenya	Richard Bonham	Ranger	Co-Founder	04/05/2020 Zoom
Painted Dog Conservation & Zimbabwe	David Kuvawoga	Ranger	Operations Manager	05/05/2020 Zoom
Panda Masuie Project & Zimbabwe	Jos Danckwerts	Ranger	Project Manager	06/05/2020 Zoom
The Malilangwe Trust & Zimbabwe	Mike Ball	Ranger	Security Manager	06/05/2020 Zoom
Zambezi Society & Zimbabwe	Gary Layard	NGO	Volunteer Logistics Coordinator	28/04/2020 Zoom
International Fund for Animal Welfare & Zimbabwe	Philip Kuvawoga	NGO	Director: Landscape Conservation Programs	05/05/2020 Zoom
African Wildlife Foundation & Zimbabwe	Olivia Mufute	NGO	Country Director	08/05/2020 Zoom

<b>Company/NGO/ Park/ Project &amp; Country</b>	<b>Interviewee</b>	<b>Stakeholder Category</b>	<b>Job Position</b>	<b>Date &amp; Programme</b>
Rhino 911 & South Africa	Nico Jacobs	NGO	Co-Founder and Pilot	30/04/2020 Zoom
Elephant Listening Project & America	Peter Wrege	AI expert and Ecolo- gist	Senior Research Associate: Cornell University	30/04/2020 Zoom
Rainforest Connection & America	Topher White	AI expert	CEO	09/05/2020 Zoom
PAWS & Air Shephard & America	Fei Fang	AI expert	Assistant Professor: Carnegie Mellon University	29/04/2020 Zoom
Microsoft & America	Patrick Flickinger	AI expert	Senior Data Architect: AI for Good Research Lab	4/05/2020 Zoom
Microsoft & America	Shahrazad Gholami	AI expert	Data and Applied Scientist	14/05/2020 Zoom
Microsoft & Netherlands	Remko De Lange	AI expert	Cloud Solution Architect: Data & AI	14/05/2020 Zoom
Smart Parks & Netherlands	Timothy van Dam	AI expert	Co-Founder/ Director	14/05/2020 Zoom

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**Payal Arora** is a digital anthropologist and Professor and Chair in Technology, Values and Global Media Cultures at Erasmus University Rotterdam. She is the author of award-winning books including “The Next Billion Users” with Harvard University Press. Her expertise lies in digital experience among low-income communities worldwide and comes with more than a decade of fieldwork experience in such contexts. Forbes named her the “next billion champion” and the “right kind of person to reform tech”. Several international media outlets have covered her work including the BBC, The Economist, Quartz, Tech Crunch, The Boston Globe, F.A.Z, The Nation and CBC. She is also the founder of Catalyst Lab, a digital storytelling organisation and co-founder of FemLab.Co, an IDRC-funded initiative on women worker collectives in the global platform economy.

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(<https://www.ft.com/content/ef8e379e-12a3-11ea-a7e6-62bf4f9e548a>).

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(<https://www.inmarsat.com/press-release/inmarsat-joins-forces-with-resolve-to-revolutionise-fight-to-protect-african-wildlife/>).



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# **SOUTH KOREA, SINGAPORE AND TAIWAN TAKE ON CORONAVIRUS**

Er-Win Tan

# KEY TAKEAWAYS

- Faced with the COVID-19 pandemic, countries around the world have adopted various strategies for contact-tracing to suppress virus outbreaks.
  - These strategies have sought to balance individuals' rights to privacy on the one hand, and the authorities' ability to use digital surveillance to gather data quickly on the other. This poses a challenge: how can governments acquire data needed to combat COVID-19, whilst simultaneously protecting private data to maintain public trust in their institutions?
  - The Agile Governance model has been cited as being critical in enabling the ROK and Taiwan to suppress COVID-19. Although Agile Governance has not been specifically tied to Singapore's efforts against COVID-19, its implications are evident in the context of Singapore's public health measures against COVID-19.
  - Other similar models of public policy governance that have been cited by scholars include Quadruple Learning (in the case of the ROK) and Anti-Fragility (in the case of Singapore).
  - Policy recommendation 1: Adaptable pre-crisis preparation is necessary to ensure that states are ready to respond to crises at short notice.
  - Policy recommendation 2: In responding to viruses, states and policymakers should see digital surveillance as a tool, not a panacea, in assisting with the task of contact-tracing.
  - Policy recommendation 3: Oversight over digital technology is necessary to ensure that the general public cooperates with public health recommendations.
  - Policy recommendation 4: Enforcement action is necessary against sections of society that wilfully violate public health guidelines.
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Since the outbreak of the COVID-19 pandemic, nations across the world have been faced with challenges to social resilience. The Republic of Korea (ROK), Singapore and Taiwan have been praised to varying degrees by the global media<sup>1</sup> for rapidly flattening the curve of COVID-19 infections with low death tolls, without implementing draconian lockdown measures. Their combination of technology and public health measures has been lauded as a viable model for successful containment.<sup>2</sup> Mark Manantan<sup>3</sup> highlighted the ROK and Taiwan for their application of the principles of Agile Governance based on human-centered policies and their appropriate use of information technology as part of a ‘whole-of-society’ approach in dealing with COVID-19.<sup>4</sup> Whilst Agile Governance has not been specifically utilised in analysing Singapore’s efforts against COVID-19, the presence of parallels between the three countries’ public policy measures warrants a comparative evaluation of their efforts in overcoming the pandemic. ■

- 1 Asquith, James. 2020. “Encouraging Outlook—In Taiwan, Singapore And South Korea Life Is Continuing Without Lockdowns.” *Forbes*, 1 April. (<https://www.forbes.com/sites/jamesasquith/2020/04/01/positive-outlook-in-taiwan-singapore-and-south-korea-life-is-continuing-with-relative-normality/#5562add67335>).
- 2 Aron, Ravi. 2020. “Combating COVID-19: Lessons from Singapore, South Korea and Taiwan.” *The Wharton School of the University of Pennsylvania*, 21 April. (<https://knowledge.wharton.upenn.edu/article/singapore-south-korea-taiwan-used-technology-combat-covid-19/>).
- 3 Research Fellow, National Chengchi University.
- 4 Elmi, Nima et al. 2018. “Agile Governance Reimagining Policy-making in the Fourth Industrial Revolution.” *World Economic Forum*. ([http://www3.weforum.org/docs/WEF\\_Agile\\_Governance\\_Reimagining\\_Policy-making\\_4IR\\_report.pdf](http://www3.weforum.org/docs/WEF_Agile_Governance_Reimagining_Policy-making_4IR_report.pdf)).

# AGILE GOVERNANCE IN THE TIME OF THE PANDEMIC

Four characteristics of Agile Governance are noteworthy. First, as emphasised in the 2018 World Economic Forum, Agile Governance is an inclusive, human-centered approach to public policy which works by involving more stakeholders through high levels of engagement and the appropriate use of digital technology.<sup>5</sup> Second, policymaking organs constantly review their policy successes and failures, avoiding the trap of responding to future crises by adopting outdated policy tools.<sup>6</sup> Third, responsibility and power is decentralised to regional municipal governments, civil society and other stakeholders, on the logic that they are more nimble in responding to local circumstances.<sup>7</sup> Fourth, the Agile Governance model promotes active levels of voluntary public participation. To increase public awareness of the rationale behind government mandates and to create a shared sense of civic responsibility, public trust in government institutions is crucial.<sup>8</sup> In the following sections, the ROK, Singapore and Taiwan highlight the varying levels of success of their interpretations of the Agile Governance model.<sup>9</sup>

The selection of these three countries as case studies for this manuscript is based on the fact that all three countries, in spite of facing high levels of human movement from China, and (in the case of the ROK and Singapore) high levels of infection during the early stages of the pandemic, have been able to sharply flatten the curve in mitigating community transmissions, as well as having low death tolls. Nonetheless, it is necessary to acknowledge the limitations of this study. Singapore and Taiwan are islands, and South Korea is, in effect, an island due to its hostile northern neighbour. Geographical separation from contiguous neighbours reduces the entry points that have to be guarded against COVID-19. In addition, all three countries have large IT infrastructures, providing them with tools that can be reconfigured to assist in digital surveillance against COVID-19. Although Taiwan, to date, has not experienced any surges in infection, the definiteness of its public health policy measures remains

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5 Nima et al. 2018. "Agile Governance Reimagining Policy-making in the Fourth Industrial Revolution."

6 Janssen, Marijin and Haikovan der Voort. 2020. "Agile and adaptive governance in crisis response: Lessons from the COVID-19 pandemic." *International Journal of Information Management*.

7 Park, Kristian, Sanjoy Sen and Danny Griffiths. 2016. "Addressing the challenges of decentralisation: Third Party Governance and Risk Management." *Deloitte*. (<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/risk/deloitte-uk-tpr-decentralisation.pdf>).

8 Moon Myung-Jae. 2020. "Fighting COVID-19 with Agility, Transparency, and Participation: Wicked Policy Problems and New Governance Challenges." *Public Administration Review* 80, 4.

9 Ravi. 2020. "Combating COVID-19: Lessons from Singapore, South Korea and Taiwan."

debatable. It should be recalled that during the early stages of the COVID-19 outbreak, the ROK and Singapore were singled out as success stories against the pandemic, only to be beset by outbreaks shortly thereafter. Whilst heightened global awareness and vigilance since the outbreak of the COVID-19 pandemic suggests that Taiwan is unlikely to face any new surges in the foreseeable future, the extent to which this outcome validates the success of Taiwan's public health measures must be qualified. If, as a hypothetical scenario, pre-symptomatic transmission had occurred prior to the Taiwanese authorities' awareness of the looming pandemic (thence leading to widespread community transmission), it is questionable if Taiwan would still be held up as a model case study in responding to COVID-19. ■

# CASE STUDY: REPUBLIC OF KOREA

Sabinne Lee, Changho Hwang and M. Jae Moon<sup>10</sup> have characterised the ROK's governance model as being based on 'quadruple-loop learning', a model in which policymaking organs constantly review their performance in the face of new information, whilst tailoring government responses to the specific nature of new crises.<sup>11</sup> It is not enough for organisations to learn from past experiences – they must also acknowledge how each and every context is characterised by unique circumstances, as a result of which policy planning has to constantly revise the assumptions upon which crisis contingencies may occur.<sup>12</sup>

This was evident in 2015, when Article 76-2(2) was added to the Infectious Disease Control and Prevention Act (IDCPA), reflecting lessons learned from the Middle East Respiratory Syndrome outbreak.<sup>13</sup> This granted health authorities access to cellphone GPS signals, credit card transactions and CCTV surveillance without requiring a warrant.<sup>14</sup> Simultaneously, curbs on such wide-ranging powers were built into the IDCPA, including notifying the person under surveillance, and a commitment to destroying private data upon completion of contact-tracing.<sup>15</sup>

These measures enabled Korea to respond rapidly to a 'super-spreader' event in

Daegu, involving 'Patient 31', a member of the *Shincheonji* Church.<sup>16</sup>

The Korean Centers for Disease Control and Prevention (KCDC) activated the Global Epidemic Prevention Platform (GEPP), a digital platform developed with the cooperation of Korean Telecom (KT) – the ROK's primary telecommunications corporation – to mon-

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<sup>10</sup> *Respectively, from Korea Institute of Public Administration, Dong-A University and Yonsei University.*

<sup>11</sup> *Lee, Sabinne, Changho Hwang and M. Jae Moon. 2020. "Policy learning and crisis policy-making: quadruple-loop learning and COVID-19 responses in South Korea." Policy and Society 39, 3.*

<sup>12</sup> *Lee, Sabinne Lee, Changho Hwang and M. Jae Moon. 2020., "Policy learning and crisis policy-making: quadruple-loop learning and COVID-19 responses in South Korea." 367–68.*

<sup>13</sup> *Kim, Brian. 2020. "Lessons for America: How South Korean Authorities Used Law to Fight the Coronavirus." Lawfare Blog, 16 March. (<https://www.lawfareblog.com/lessons-america-how-south-korean-authorities-used-law-fight-coronavirus>).*

<sup>14</sup> *Edwin O. Reischauer Center for East Asian Studies. 2020. "South Korea's Response To COVID-19: Interview With Wonhyuk Lim." Podcast, 23 April. (<https://www.reischauercenter.org/podcasts/south-koreas-response-to-covid-19-with-wonhyuk-lim/>); Korean Legislation Research Institute. 2020. "Enforcement Decree of the Infectious Disease Control and Prevention Act." Amendment by Presidential Decree No. 28070, 29 May. ([http://elaw.klri.re.kr/eng\\_mobile/viewer.do?hseq=43547&-type=part&key=36](http://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=43547&-type=part&key=36)).*

<sup>15</sup> *Kim, Brian. 2020. "Lessons for America: How South Korean Authorities Used Law to Fight the Coronavirus."*

<sup>16</sup> *Park, Nathan S. 2020. "Cults and Conservatives Spread Coronavirus in South Korea." Foreign Policy, 27 February. (<https://foreignpolicy.com/2020/02/27/coronavirus-south-korea-cults-conservatives-china/>).*

itor infectious spreads.<sup>17</sup> GEPP data was overseen by the Korean National Police Agency to prevent abuse of individuals' privacy.<sup>18</sup> While virus testing was delegated to local municipal health authorities, KCDC collected data from other agencies, and telecommunications and credit card companies to facilitate contact tracing.<sup>19</sup> One obstacle stemmed from *Shincheonji's* refusal to provide a complete list of its members to the authorities.<sup>20</sup> In response, the latter invoked Article 76-2(2) of the IDCPA to seize the sect's full membership list.<sup>21</sup>

Yet, the ROK's utilisation of digital technology has had a mixed record in earning the public's trust. An April survey suggested that 80% of the populace supported a government proposal to mandate use of electronic wristbands to keep track of people under self-quarantine.<sup>22</sup> However, there is a shortfall in the general public's confidence in data privacy protections. This was evident in the ROK's introduction of the Corona100m app. This app used GPS signals from peoples' phones to alert users on potential virus hotspots.<sup>23</sup> It marked an instance of collaboration between the public and private sectors – whilst ROK authorities undertook digital surveillance of peoples' phone signals, the data was processed by TINA3D's development team to provide the public with updated information on potential virus hotspots.<sup>24</sup>

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- 17 Oh, Juhwan et al. 2020. "National Response to COVID-19 in the Republic of Korea and Lessons Learned for Other Countries." *Health Systems and Reform* 6, 1.
  - 18 ROK Ministry of Economy and Finance. 2020. "Korea Shares COVID-19 Response Strategies with World Bank." Press Release, 26 March. (<http://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=4868>). 13–14.
  - 19 Bhatia, Dominika, et al. 2020. COVID-19 Case and Contact Tracing: Policy Learning from International Comparisons." *Rapid Review* 25, 4.
  - 20 Kim, Hyun-Jung. 2020. "South Korea learned its successful Covid-19 strategy from a previous coronavirus outbreak: MERS." *Bulletin of the Atomic Scientists*, 20 March. (<https://thebulletin.org/2020/03/south-korea-learned-its-successful-covid-19-strategy-from-a-previous-coronavirus-outbreak-mers/>).
  - 21 "Gov't Takes Follow-up Measures After Securing List of Shincheonji Church Followers." KBS, 26 February 2020. ([https://world.kbs.co.kr/service/news\\_view.htm?lang=e&Seq\\_Code=151611](https://world.kbs.co.kr/service/news_view.htm?lang=e&Seq_Code=151611)); Lee, Heesu. 2020. "These Elite Contact Tracers Show the World How to Beat Covid-19." *Bloomberg*, 26 July. ([https://www.bloomberg.com/news/articles/2020-07-25/these-elite-contact-tracers-show-the-world-how-to-beat-covid-19?fbclid=IwAR14ns-Bo6-rrhbrvfMXESCB-zTR2uSITLA9JwYkzel-DAe\\_\\_KEXTN3q3BNg](https://www.bloomberg.com/news/articles/2020-07-25/these-elite-contact-tracers-show-the-world-how-to-beat-covid-19?fbclid=IwAR14ns-Bo6-rrhbrvfMXESCB-zTR2uSITLA9JwYkzel-DAe__KEXTN3q3BNg)).
  - 22 Yonhap News Agency. 2020. "S. Korea to use electronic wristbands on violators of self-isolation rules: PM." *Korea Herald*, 11 April. (<http://www.koreaherald.com/view.php?ud=20200411000043>); Kirk, Donald. 2020. "South Korea is Beating the Coronavirus. Mass Testing is Key. But There's More." *The Daily Beast*, 13 March. (<https://www.thedailybeast.com/south-korea-is-beating-the-coronavirus-mass-testing-is-key-but-theres-more?fbclid=IwAR3ER3FAP-gT1NTpYIZV7Xmq-WTNfLwGheGtEq2R6odrZqbX-uzF9fvXcRdww>).
  - 23 Wray, Sarah. 2020. "South Korea to step-up online coronavirus tracking." *Smartcitiesworld*, 12 March. (<https://www.smartcitiesworld.net/news/news/south-korea-to-step-up-online-coronavirus-tracking-5109>).
  - 24 Interview with Bae Wonseok, Development Director of TINA3D, by email, between 30 October and 4 November 2020.



Although hailed for keeping the public informed, Corona100m raised concerns over its implications for privacy.<sup>25</sup> In an attempt to protect users' privacy, neither ROK Government agencies, nor TI-NA3D, were permitted to collect identifying personal information.<sup>26</sup> Yet, although Corona100m did not name any infected persons, the level of detail it provided – for instance, the time and location visited by COVID-19 infected persons – made it possible for them to be 'outed', even when accuracy may have been skewed by technical glitches.<sup>27</sup> Moreover, the government was unable to make it mandatory for citizens to download Corona100m, as access to the app was controlled by Apple and Google.<sup>28</sup> As the app was developed by a private company and not the government, the latter had no authority to order citizens to download Corona100m.<sup>29</sup> Yet, the fact that the download of the app was not mandatory meant that its effectiveness depended on the public's sense of collective responsibility in downloading it. By the time of the discontinuation of the Corona100m app, the app had been downloaded by some 4 million ROK residents,<sup>30</sup> only 8% of the ROK's population, far from the 60% believed to be necessary for meaningful impact.<sup>31</sup>

Further shortfalls blunted the effectiveness of the ROK's Ministry of the Interior and Safety's introduction of the Self-Quarantine Safety Protection app in March in addressing additional COVID-19 outbreaks over the spring and summer.<sup>32</sup> In May, an infected individual visited bars popular with the

25 Klatt, Karola. 2020. "Corona apps: South Korea and the dark side of digital tracking." *Brussels Times*, 30 April. (<https://www.brusselstimes.com/opinion/108594/corona-apps-south-korea-and-the-dark-side-of-digital-tracking/>).

26 Interview with Bae.

27 "Coronavirus privacy: Are South Korea's alerts too revealing?" *BBC*, 5 March 2020. (<https://www.bbc.com/news/world-asia-51733145>); Kim Nemo. 2020. "More scary than coronavirus?: South Korea's health alerts expose private lives." *Guardian*, 6 March. (<https://www.theguardian.com/world/2020/mar/06/more-scary-than-coronavirus-south-koreas-health-alerts-expose-private-lives>).

28 Leswing, Kif. 2020. "Apple is rejecting coronavirus apps that aren't from health organizations, app makers say." *CNBC*, 5 March. (<https://www.cnbc.com/2020/03/05/apple-rejects-coronavirus-apps-that-arent-from-health-organizations.html>).

29 Wray, Sarah. 2020. "South Korea to step-up online coronavirus tracking."

30 "PrivacyRules exclusive interview with Tina3D, the company that developed the Korean app "Corona 100m" to trace covid-19." *Presswire*, 30 June 2020. ([https://www.einnews.com/pr\\_news/520660867/privacyrules-exclusive-interview-with-tina3d-the-company-that-developed-the-korean-app-corona-100m-to-trace-covid-19](https://www.einnews.com/pr_news/520660867/privacyrules-exclusive-interview-with-tina3d-the-company-that-developed-the-korean-app-corona-100m-to-trace-covid-19)).

31 Ferretti, Luca, et al. 2020. "Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing." *Science* 368, 6491. (<https://science.sciencemag.org/content/368/6491/eabb6936>).

32 Kim Min Joo. 2020. "Tracing South Korea's latest virus outbreak shoves LGBTQ community into unwelcome spotlight." *Washington Post*, 11 May. ([https://www.washingtonpost.com/world/asia\\_pacific/tracing-south-koreas-latest-virus-outbreak-shoves-lgbtq-community-into-unwelcome-spotlight/2020/05/11/oda09036-9343-11ea-87a3-22d324235636\\_story.html](https://www.washingtonpost.com/world/asia_pacific/tracing-south-koreas-latest-virus-outbreak-shoves-lgbtq-community-into-unwelcome-spotlight/2020/05/11/oda09036-9343-11ea-87a3-22d324235636_story.html)).

Lesbian, Gay, Bisexual and Transgender (LGBT) community.<sup>33</sup> Given conservative disapproval of their lifestyle, LGBT community members provided false phone numbers when visiting clubs to avoid social ostracism. In response, the ROK updated the IDCPA, requiring high-risk public areas to scan QR codes, with names and contact information securely encrypted to prevent loss of privacy.<sup>34</sup> Yet, the efficacy of these measures remains debatable, given the range of entities such as criminals at large, illegal immigrants, the homeless, and buyers and providers of sexual services, who have reasons to evade digital surveillance.<sup>35</sup> Moreover, although the IDCPA included penalties for misuse of confidential data and specified that such information must be destroyed after two weeks,<sup>36</sup> in July it was revealed that, amidst the hasty development of the 'Self-Quarantine Safety Protection' app,<sup>37</sup> several security flaws were overlooked. These included the app's allocation of ID numbers that could be decoded by hackers to reveal private data.<sup>38</sup>

Moreover, the period since August has seen a renewed surge in community transmissions.<sup>39</sup> A pastor at the *Sarang Jeil* Church staged a demonstration, deliberately flouting public health advice to wear face masks.<sup>40</sup> The resulting COVID-19 resurgence left the ROK with a difficult choice. Although KCDC is empowered to ban social gatherings of more than 10 people as part of a Level 3 lockdown, such measures would have

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33 Kim Min Joo. 2020. "Tracing South Korea's latest virus outbreak shoves LGBTQ community into unwelcome spotlight."

34 Kan Hyeong-woo. 2020. "S. Korea introduces QR entry log system." *Korea Herald*, 17 June. ([http://www.koreaherald.com/view.php?ud=20200617000718&fbclid=IwAR27G8hj\\_ArSwy003HziSCMyzMoUEvHnZmH-D5pT5cWh44n4TGirez72pHTY](http://www.koreaherald.com/view.php?ud=20200617000718&fbclid=IwAR27G8hj_ArSwy003HziSCMyzMoUEvHnZmH-D5pT5cWh44n4TGirez72pHTY)).

35 Sturmer, Jake and Rebecca Armitage. 2020. "South Korea's coronavirus outbreak in Seoul's club scene shows the dangers of stigma during a pandemic." *ABC News*, 15 May. (<https://www.abc.net.au/news/2020-05-16/how-a-few-nightclubs-in-seoul-saw-a-new-coronavirus-outbreak/12249842>); Ock Hyun-Ju. 2020. "Seoul to plug undocumented migrants loophole in COVID-19 efforts." *Korea Herald*, 29 April. (<http://www.koreaherald.com/view.php?ud=20200429000769>).

36 "South Korea's Response To COVID-19: Interview With Wonhyuk Lim."

37 ROK Ministry of Health and Welfare. "Korean government's response system." (<http://ncov.mohw.go.kr/en/baroView.do?brdId=11&brdGubun=111>).

38 Choe Sang-Hun, Aaron Krolak, Raymond Zhong and Natasha Singer. 2020. "Major Security Flaws Found in South Korea Quarantine App." *New York Times*, 21 July. (<https://www.nytimes.com/2020/07/21/technology/korea-coronavirus-app-security.html>).

39 Choi Ha-yan. 2020. "Transmission clusters of COVID-19 involving small groups and gatherings on the rise." *Hankyoreh*, 30 June. ([http://english.hani.co.kr/arti/english\\_edition/e\\_national/951634.html?fbclid=IwAR1fyIR-r58lZOd9ObyusuDtZNeCPFg3exXdTj-LrlblqU3jHRjNcv-SUpw\\_E](http://english.hani.co.kr/arti/english_edition/e_national/951634.html?fbclid=IwAR1fyIR-r58lZOd9ObyusuDtZNeCPFg3exXdTj-LrlblqU3jHRjNcv-SUpw_E)).

40 Seo, Jian and David Tizzard. 2020. "Korea, religion and the coronavirus." *Korea Times*, 30 August ([https://www.koreatimes.co.kr/www/opinion/2020/08/715\\_295165.html?fbclid=IwAR3XZZnSeU5qWPZtxM6CcFCHowWL-3WV5iizVLDQU3XY\\_PelaVeVKQ6j5K6k](https://www.koreatimes.co.kr/www/opinion/2020/08/715_295165.html?fbclid=IwAR3XZZnSeU5qWPZtxM6CcFCHowWL-3WV5iizVLDQU3XY_PelaVeVKQ6j5K6k)).

been deeply unpopular.<sup>41</sup> Instead, the ROK instituted a 'Level 2.5' lockdown, requiring all restaurant patrons to provide their phone numbers for contact-tracing.<sup>42</sup> Elsewhere, in response to the public outcry over the 'superspreader' events of 2020, the authorities arrested the leaders of the *Shincheonji* and *Sarang Jeil* churches, for failing to cooperate with the authorities' contact-tracing, and for wilful violation of public health guidelines, respectively.<sup>43</sup>

Yet, the fact remains that these law enforcement measures were implemented only after infections had already surged.<sup>44</sup> Had the ROK been willing to face criticism for pre-emptive activation of firmer law enforcement measures, the necessity of Level 2.5 measures might have been avoided altogether. Even prior to the Sarang Jeil Church demonstration on 15 August, the ROK had already legislated a ban on demonstrations and other large gatherings. This included a ban on demonstrations by the Sarang Jeil Church in March.<sup>45</sup> Given that the pastor of the Sarang Jeil Church had announced his intention of holding this demonstration as early as May, the Government should have, in retrospect, acted pre-emptively by authorising law enforcement to intervene in accordance with existing legislation in order to avert the COVID-19 summer resurgence.<sup>46</sup> A similarly belated measure was the 5 October 2020 amendment to the IDCPA, authorizing local municipal government offices to impose fines of ROK Won 100,000 (US\$ 86) for failures to wear protective face masks in crowded areas.<sup>47</sup> Such measures, however, are

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41 Hlasny, Vladimir. 2020. "How COVID-19 Wreaked Havoc on South Korea's Labor Market." *The Diplomat*, 28 August. (<https://thediplomat.com/2020/08/how-covid-19-wreaked-havoc-on-south-koreas-labor-market/>).

42 "Upgraded social distancing level 2.5 is needed to reduce impact on businesses." *Donga Ilbo*, 12 September 2020. (<https://www.donga.com/en/article/all/20200912/2178901/1/Upgraded-social-distancing-level-2-5-is-needed-to-reduce-impact-on-businesses>).

43 "South Korean sect leader arrested for obstructing Covid-19 investigation." *Guardian*, 1 August 2020. (<https://www.theguardian.com/world/2020/aug/01/south-korean-sect-leader-arrested-for-obstructing-covid-19-investigation>); "Sarang Jeil Church Members Indicted for Holding Offline Services." *KBS News*, 23 September 2020. ([http://world.kbs.co.kr/service/news\\_view.htm?lang=e&Seq\\_Code=156471](http://world.kbs.co.kr/service/news_view.htm?lang=e&Seq_Code=156471)).

44 "Police on standby to deter illegal rallies on national holiday amid virus outbreak." *Yonhap News Agency*, 3 October 2020. (<https://en.yna.co.kr/view/AEN20201003001200320>).

45 Choi He-suk. 2020. "Government cracks down on church for violating anti-outbreak measures." *Korea Herald*, 23 March. (<http://www.koreaherald.com/view.php?ud=20200323000769>).

46 Lee Ga-Ram and Sarah Kim. 2020. "Pastor blamed for virus surge draws scrutiny over politics, education." *Korea JoongAng Daily*, 19 August. (<https://koreajoongangdaily.joins.com/2020/08/19/national/socialAffairs/Jung-Kwanghun-Covid19-coronavirus/20200819192200390.html>).

47 Choi Ha-yan. 2020. "People without masks in public to face fines up to US\$86 starting Nov. 16." *Hankyoreh*, 5 October. ([http://english.hani.co.kr/arti/english\\_edition/e\\_national/964481.html?fbclid=IwAR11nKZw8X5hkiwd-FR5ka5RO5KNonDRu1RoKB8jwQhpilaVLp3yETHy4M-4](http://english.hani.co.kr/arti/english_edition/e_national/964481.html?fbclid=IwAR11nKZw8X5hkiwd-FR5ka5RO5KNonDRu1RoKB8jwQhpilaVLp3yETHy4M-4)).

a case of 'too little, too late',<sup>48</sup> inasmuch as the failure to nip the pandemic in the bud, by creating 'seeds' of asymptomatic cases scattered in communities across the country, has undermined longer-term efforts to contain the virus, thence resulting in the third wave of infections in December 2020.<sup>49</sup>

Criticism of the ROK's stepped-up law enforcement measures and their implications for civil and political rights<sup>50</sup> underscores the necessity of higher levels of government engagement with the public in emphasising the rationale for such measures. The ROK case study illustrates the utility of the Agile Governance model in empowering cooperation between the government, the IT sector, civil society and other stakeholders as an active partnership. However, the continued outbreaks of COVID-19 highlight the concurrent necessity of imposing tough law enforcement measures against scofflaws willing to defy public health measures, or who refuse to cooperate with the authorities' contact-tracing. ■

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<sup>48</sup> Kim Arin. 2020. "Winter did not have to be this bad." *Korea Herald*, 13 December. (<http://m.koreaherald.com/view.php?ud=20201213000190>).

<sup>49</sup> Choe Sang-Hun. 2020. "Each Day Is Critical': South Korea's 11th-Hour Battle With Covid." *New York Times*, 22 December. ([https://www.nytimes.com/2020/12/22/world/asia/korea-covid-infections-level-3.html?smid=fb-share&fbclid=IwAR2Jy-6DCoi\\_Db-AU9b\\_-Wy8y9ovgJl2P7yJBTCiiFDwytFxU-jB6oac1s-5Q](https://www.nytimes.com/2020/12/22/world/asia/korea-covid-infections-level-3.html?smid=fb-share&fbclid=IwAR2Jy-6DCoi_Db-AU9b_-Wy8y9ovgJl2P7yJBTCiiFDwytFxU-jB6oac1s-5Q)).

<sup>50</sup> Kang Tae-Jun. 2020. "South Korea Baffled by Stop-and-Search, Police Bus Walls During Protests." *The Diplomat*, 5 October. ([https://thediplomat.com/2020/10/south-korea-baffled-by-stop-and-search-police-bus-walls-during-protests/?fbclid=IwARoknjWokT-jrUSEz24lk5HUX-puBjyibYmQrrZocBotL\\_cN-3Xht7LQYDw](https://thediplomat.com/2020/10/south-korea-baffled-by-stop-and-search-police-bus-walls-during-protests/?fbclid=IwARoknjWokT-jrUSEz24lk5HUX-puBjyibYmQrrZocBotL_cN-3Xht7LQYDw)); "Stop-and-frisk and bus walls remind us of dictatorship." *Dong-A Ilbo*, 5 October 2020. (<https://www.donga.com/en/article/all/20201005/2200920/1/Stop-and-frisk-and-bus-walls-remind-us-of-dictatorship>).

# CASE STUDY: SINGAPORE

Singapore incorporated elements of the Agile Governance model into government-coordinated actions from March onwards as part of the ‘circuit breaker’<sup>51</sup> strategy, based on tough penalties to enforce a stay-at-home quarantine.<sup>52</sup>

As part of its contact-tracing strategy, Singapore unveiled the TraceTogether app, which used Bluetooth signals between mobile phones to provide users with information on proximity to known infections.<sup>53</sup> Although TraceTogether facilitated identification of local transmissions during the initial stages of the outbreak,<sup>54</sup> download of the app was voluntary for most of 2020.<sup>55</sup> These limitations blunted TraceTogether’s effectiveness. Whilst TraceTogether saw 1.1 million downloads after its launch, the rest of Singapore’s population of 5.6 million did not download it, over data privacy concerns,<sup>56</sup> even though a download rate of 60% within the populace was necessary for the app’s effectiveness.<sup>57</sup>

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- 51 Yue, Ng How. 2020. “COVID-19 (TEMPORARY MEASURES) ACT 2020.” *Singapore Statutes Online*, 7 April. (<https://sso.agc.gov.sg/SL-Supp/S254-2020/Published/20200407?DocDate=20200407>).
- 52 “PM Lee Hsien Loong on the COVID-19 situation in Singapore on 3 April 2020.” *Office of the Prime Minister of Singapore*, 3 April 2020. (<https://www.pmo.gov.sg/Newsroom/PM-Lee-Hsien-Loong-on-the-COVID19-situation-in-Singapore-on-3-April-2020>); Carroll, Aaron E. 2020. “Lesson From Singapore: Why We May Need to Think Bigger.” *New York Times*, 14 April. (<https://www.nytimes.com>); “Coronavirus: Singapore bans Britons for lockdown ‘bar crawl.’” *BBC*, 26 June 2020. (<https://www.bbc.co.uk/news/world-asia-53188941>).
- 53 “TraceTogether: Not Easy to Verify the State’s Privacy Claims.” *Digital Reach*, 2 April 2020. (<https://digitalreach.asia/tracetgether-disassembling-it-wasnt-easy-to-confirm-the-governments-claims-on-privacy/>); Tay, Simon and Kevin Chen. 2020. “Singapore and COVID-19: Strengths, Shifts, and Limits of National Response.” *Council on Foreign Relations*, 21 April. (<https://www.cfr.org/>).
- 54 Wells, Spencer. 2020. “Singapore is the model for how to handle the coronavirus.” *MIT Technology Review*, 12 March. (<https://www.technologyreview.com/2020/03/12/905346/singapore-is-the-model-for-how-to-handle-the-coronavirus/>).
- 55 Chik, Warren. 2020. “Changes to the Singapore Personal Data Protection Act and implications in the pandemic context.” *Academia*, 25 June. (<https://www.academia.sg/academic-views/changes-to-the-singapore-personal-data-protection-act-and-implications-in-the-pandemic-context/?fbclid=IwARovemOcg0jz111YEeJWyn1pn-mnMBMnITeVGuFiZoWDA-dfl6oUnKe6rFg>). In seeking to address these concerns, in June 2020, an amendment was made to the Personal Data Protection Act, stipulating increased protections and transparency to accompany updating of Tracetgether, as well as introduction of the newer SafeEntry national digital check-in system. See “Personal Data Protection Act 2012.” *Singapore Statutes Online*, 7 December 2012. (<https://sso.agc.gov.sg/Act/PDPA2012>).
- 56 Bhatia, Dominika, et. al. 2020. “COVID-19 Case and Contact Tracing.” 54. In the case of Singapore, concerns over online privacy are particularly sensitive at the present moment due to a 2018 foreign hacking of the country’s health database. See “Singapore personal data hack hits 1.5m, health authority says.” *BBC*, 20 July 2018. (<https://www.bbc.com/news/world-asia-44900507>).
- 57 Francis, et. al. “Digital Contact Tracing.” 19; “Data privacy, ‘unexciting’ interface and battery-draining issue are reasons why Singaporeans are not downloading TraceTogether app.” *Online Citizen*, 20 May 2020. (<https://www.theonlinecitizen.com>).

To address this gap, in May, Singapore introduced the SafeEntry system, requiring people to scan personalised QR codes encrypted with their Identification Numbers and phone numbers before accessing public transport and other public venues.<sup>58</sup> Likewise, in August, Singapore introduced free TraceTogether Tokens for the public, as well as mandating their use by newly-arrived persons.<sup>59</sup> Recognising concerns over privacy, the tokens use only Bluetooth signals, users' randomised ID numbers, and a timestamp, omitting users' mobile numbers.<sup>60</sup> In October, with plans in place for a Phase 3 relaxation of circuit-breaker measures, Singapore announced that the use of TraceTogether tokens would be made mandatory for people visiting public areas by the end of 2020.<sup>61</sup> In other words, although use of TraceTogether was not explicitly mandatory, relaxation of social distancing measures was tacitly contingent on the public's consent to digital surveillance via TraceTogether and SafeEntry.

Yet, Warren Chik<sup>62</sup> has noted that these measures continue to leave shortfalls in data protection, as the regulations for ensuring transparency and accountability are applicable only to the private sector, but not to public agencies.<sup>63</sup> Given that SafeEntry scans people's personal data, the absence of regulations for ensuring transparency and accountability on the part of the public sector leads to the possibility for abuse of peoples' privacy.

Inasmuch as these measures were focused on identifying virus hotspots, such powers

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58 "FAQ page of the Website of SafeEntry." Singapore government, 2020. (<https://support.SafeEntry.gov.sg/hc/en-us>).

59 Zhuo, Tee. 2020. "Coronavirus: Tracking workers' health with mobile apps, wearable devices." *Straits Times*, 12 August. (<https://www.straitstimes.com/singapore/manpower/tracking-workers-health-with-tech-help>); Since 11 August, Singapore has mandated that international travellers choosing home quarantine rather than a government-provided quarantine facility will be required to wear an electronic monitoring device for the duration of their quarantine. See "COVID-19: Travellers who serve stay-home notice outside of facilities after entering Singapore must wear electronic device." *Channelnewsasia*, 3 August 2020. (<https://www.channelnewsasia.com>); Singapore distributes Covid contact-tracing tokens." *BBC*, 14 September 2020, (<https://www.bbc.com/news/business-54143015>).

60 "Improving Tracetoegether through community engagement." *GovTech*, 6 July 2020, (<https://www.tech.gov.sg/media/technews/2020-07-06-tracetoegether-token-tear-down>).

61 Wong, Lester. 2020. "Use of TraceTogether app or token mandatory by end Dec." *Straits Times*, 21 October. (<https://www.straitstimes.com/singapore/use-of-trace-together-app-or-token-mandatory-by-end-dec>).

62 Singapore Management University.

63 Chik, Warren. 2020. "Changes to the Singapore Personal Data Protection Act."

of surveillance found broad support following the surge in infections in the transient worker community in April. In May, a study by the Institute of Policy Studies (IPS) in Singapore found that more than 80% of the public supported intrusive surveillance measures,<sup>64</sup> whilst 78% of respondents were willing to report violations of social distancing guidelines to the authorities.<sup>65</sup> Such results are consistent with Singapore's prioritisation of government access to big data over individual privacy rights.<sup>66</sup>

Yet, such levels of support for intrusive measures do not tell the whole story. If Singapore's implementation of the Agile Governance model is assessed, it falls short on its level of civic engagement, as far as a demographically inclusive, 'whole of society' approach embodied in the Agile Governance model is concerned.<sup>67</sup> Following the April surge in infections in the transient worker community, Singapore's online forums saw a rise in xenophobic scapegoating of this community, while turning a blind eye to the crowded, unhygienic accommodations that these workers have been forced to live in, a condition which led to the spike in infections.<sup>68</sup> Moreover, the IPS Survey found that Singapore's populace was less enthusiastic about surveillance measures that directly impacted their personal lives. 49% of respondents were agreeable to having their phone data being tracked without their consent, and 58% were agreeable to the use of CCTV to monitor people leaving their homes during the circuit-breaker.<sup>69</sup>

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- 64 Mathews, Mathew, Alex Tan and Syafiq Suhaini. 2020. "Attitudes towards the use of surveillance technologies in the fight against COVID-19." Institute of Policy Studies, Lee Kuan Yew School of Public Policy, 24 May. (<https://lkyspp.nus.edu.sg/docs/default-source/ips/ips-report-on-attitudes-towards-the-use-of-surveillance-technologies-in-the-fight-against-covid-19-240520.pdf>). 3.
- 65 Mathews, Mathew, et. al. 2020. "Attitudes towards the use of surveillance technologies." 4.
- 66 Fumiko Tay, Tiffany. 2020. "Singaporeans accept some privacy loss in Covid-19 battle but surveillance method matters: IPS study." *Straits Times*, 25 May. (<https://www.straitstimes.com/singapore/singaporeans-accept-some-privacy-loss-in-covid-19-battle-but-surveillance-method-matters>); Lammertink, Jonas P. 2020. "Responding to COVID-19 with Tech in Singapore", In Schneider and Creemers. (eds.) *How Asia Confronts COVID-19 through Technology*. 26.
- 67 Bhadra Haines, Monamie and Hallam Stevens. 2020. "Does Singapore need mandatory contact tracing apps?" *Academia*, 18 May. (<https://www.academia.sg/academic-views/does-singapore-need-mandatory-contact-tracing-apps/>).
- 68 Kaur Jaswal, Balli. 2020. Rise in coronavirus cases brings to light Singaporeans' racist attitudes towards foreign workers." *South China Morning Post*, 23 April. (<https://www.scmp.com/comment/opinion/article/3080987/rise-coronavirus-cases-brings-light-singaporeans-racist-attitudes>).
- 69 Mathews, Mathew, et. al. 2020. "Attitudes towards the use of surveillance technologies." 3.



Elsewhere, a June poll found that 57% of the population was willing to carry a TraceTogether token at all times,<sup>70</sup> whereas September has seen a total of 2.4 million downloads of TraceTogether – just over 40% of the population.<sup>71</sup>

Such inadequate levels of public participation run counter to Singapore's target of seeking 70% of the population's participation in the TraceTogether program.<sup>72</sup> Moreover, the dichotomy of Singapore society's willingness to accept differing levels of surveillance intrusiveness suggests that significant numbers of Singaporeans have a 'Not In My Backyard' (NIMBY) mentality.<sup>73</sup> Although they oppose unpleasant measures that inconvenience them personally, many Singaporeans evidently have no objections to those same measures being implemented against others.<sup>74</sup>

The circumstances that surrounded the COVID-19 outbreak in Singapore illustrate that the NIMBY mentality is counter-productive to overcoming COVID-19. In February, the authorities had downplayed warnings from the migrant rights advocacy group Transient Workers Count Too (TWC2) of the danger of infections in the transient worker community until it was too late.<sup>75</sup> This shortfall demonstrates the importance of ensuring that adoption of the Agile Governance model includes government engagement with civil society, whilst undertaking demographically inclusive public policies. Had the Singapore Government heeded calls from TWC2 and civil society to address the unhygienic living conditions of the

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**70** Yong, Janelle. 2020. "Wearable TraceTogether token: 57% willing to wear it. You leh?" *Asia One*, 19 June. (<https://www.asiaone.com/digital/wearable-tracetogther-token-57-willing-wear-it-you-leh>).

**71** Tan, Bryan. 2020. "Commentary: Singapore's almost in our new normal. Don't be the dud who jeopardises that." *Channelnewsasia*, 16 September. (<https://www.channelnewsasia.com/news/commentary/covid-19-singapore-new-normal-tracetogther-SafeEntry-13112428>).

**72** Baharudin, Hariz. 2020. "Distribution of TraceTogether tokens starts; aim is for 70% participation in contact tracing scheme." *Straits Times*, 14 September. (<https://www.straitstimes.com/singapore/government-aiming-for-70-participation-in-tracetogther-programme-says-vivian-on-first-day>).

**73** Sin, Yuen. 2020. "Covid-19 outbreak brings migrant workers from margin to centre of Singapore's attention." *Straits Times*, 30 April. (<https://www.straitstimes.com/opinion/migrant-workers-from-margin-to-centre-of-spores-attention>).

**74** "Walking the talk on being inclusive." *Straits Times*, 3 June 2020. (<https://www.straitstimes.com/opinion/st-editorial/walking-the-talk-on-being-inclusive>).

**75** Ratcliffe, Rebecca. 2020. "Singapore's cramped migrant worker dorms hide Covid-19 surge risk." *Guardian*, 17 April. (<https://www.theguardian.com/world/2020/apr/17/singapores-cramped-migrant-worker-dorms-hide-covid-19-surge-risk>); Bautista, Julius. 2020. "COVID-19 in Singapore: Confronting the truth of Intertwined Interests." *COVID-19 Chronicles*, 11 May. (<https://covid-19chronicles.cseas.kyoto-u.ac.jp/post-031-html/>).



transient worker community, the need for the circuit-breaker might have been obviated entirely.<sup>76</sup>

Increased incorporation of the principles of Agile Governance in the Singapore context could result in a more efficient model of governance. Tan Ming Hui<sup>77</sup> referenced Nassim Nicholas Taleb's<sup>78</sup> 2012 *Antifragile* as a lens through which Singapore can respond to COVID-19. Taleb defined Antifragility as a situation in which an entity can proactively respond to a 'source of harm', as a result of which it emerges from a crisis even stronger than ever.<sup>79</sup> Taleb argued that, in times of strife, antifragile societies are not merely resilient, but can even thrive. Tan extends Taleb's analysis to argue that antifragile societies based on 'an ecosystem of small and self-sufficient entities ... [and] a distribution of power, diversified knowledge gathering and decision-making' are better placed to withstand the governance challenges of the future.<sup>80</sup> Although Tan's analysis does not specifically cite Agile Governance, there are clear commonalities between the two concepts for Singapore to contemplate increased assimilation of the principles of Agile Governance into its policymaking capacity.

Singapore's response to COVID-19, including the utilisation of social media to counter misinformation, suggests appreciation of the principles of Agile Governance within policymaking organs. As Tan noted, however, such capacity is lacking in Singapore's civil society and private sector,<sup>81</sup> with the bulk of the population often deferring to government-led initiatives.<sup>82</sup> Conversely, given that the Singapore Government has often placed itself in the policymaking driver's seat with comparatively

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76 Tan, Yvette. 2020. "Covid-19 Singapore: A 'pandemic of inequality' exposed." BBC, 18 September. (<https://www.bbc.com/news/world-asia-54082861>); Holden, Philip. 2020. "A Conversation with Debbie Fordyce, TWC2 President." Academia, 14 May. (<https://www.academia.sg/academic-views/a-conversation-with-debbie-fordyce-twc2-president/?fbclid=IwAR2KFGsb8ASLho45UN- npdw4X-CkcoTax6uXQaEFOorJZm5W38Gs3cYu7Oke>).

77 Nanyang Technological University.

78 New York University.

79 Taleb, Nassim Nicholas. 2012. *Antifragile: Things that Gain from Disorder*. New York: Random House.

80 Tan Ming Hui. 2020. "Living with Uncertainty: A Whole of Society Approach to Pandemics." RSIS Policy Report. (<https://www.rsis.edu.sg/rsis-publication/rsis/living-with-uncertainty-a-whole-of-society-approach-to-pandemics/>), 10.

81 Tan Ming Hui. 2020. "Living with Uncertainty." 7.

82 Ho, Grace. 2020. "Emerging Stronger Conversations: Bringing together voices to build more resilient society." *Straits Times*, 28 September. (<https://www.straitstimes.com/politics/bringing-together-voices-to-build-more-resilient-society>).

few opportunities for civil society to contribute, the end-result are policies which, although effective and efficient from the perspective of the government, have fallen short of the overall objective of overcoming COVID-19. This gap emphasises the necessity of a closer partnership between the government and civil society. Such an approach would not only mitigate the likelihood of policy blind spots – such as Singapore’s overlooking of the plight of the transient worker community amidst the pandemic – but also ensure that the populace has more direct involvement in addressing a shared challenge.<sup>83</sup> ■



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83 Tan Ming Hui. 2020. “Living with Uncertainty.”11.

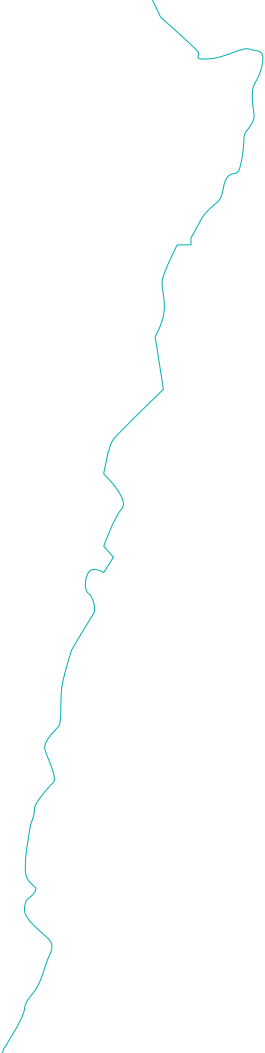
# CASE STUDY: TAIWAN

Taiwan has operated on the principle that no one single entity has the capacity to manage such complex challenges as pandemics, instead stressing a whole-of-society approach that involves the population's whole-hearted participation.<sup>84</sup> Following the 2003 SARS outbreak, Taiwan passed the Communicable Disease Control (CDC) Act,<sup>85</sup> establishing the National Health Command Center (NHCC).<sup>86</sup> In 2014, the National Health Insurance (NHI) Health Cloud program was established, providing the authorities with access to residents' medical histories.<sup>87</sup>

In March, following the COVID-19 outbreak, Taiwan's Central Epidemic Command Center (CECC) implemented an 'electronic fence'<sup>88</sup> which combined Taiwan's health insurance, immigration and customs databases. By scanning airline passengers' QR codes, CECC was able to review

peoples' travel histories.<sup>89</sup> Newly-arrived persons faced mandatory two-week quarantines, during which health authorities undertook twice-daily monitoring.<sup>90</sup> Underpinning these measures was the 2015 Personal Data Protection Act (PDPA), which permitted the government to access individuals' data in times of emergency.<sup>91</sup> To prevent breaches of privacy, the PDPA explicitly distinguishes between telecommunications companies' collection of data on the one hand, and processing such data on the other, which comes under the purview of the government.<sup>92</sup> This

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- 84 Schwartz, Jonathan and Muh-Yong Yen. 2017. "Toward a collaborative model of pandemic preparedness and response: Taiwan's changing approach to pandemics." *Journal of Microbiology, Immunology and Infection* 50. 127.
- 85 Lin Ching-Fu; Wu Chien-Huei, and Wu Chuan-Feng. 2020. "Reimagining the Administrative State in Times of Global Health Crisis: An Anatomy of Taiwan's Regulatory Actions in Response to the COVID-19 Pandemic." *European Journal of Risk Regulation*. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7156569/>).
- 86 McGregor, Grady. 2020. "SARS taught Taiwan how to contain the coronavirus outbreak." *Fortune*, 15 March. (<https://fortune.com/2020/03/15/coronavirus-taiwan-cases-response/>).
- 87 Bhatia, Dominika, et. al. 2020. "COVID-19 Case and Contact Tracing." 11.
- 88 Claburn, Thomas. 2020. "Taiwan collars coronavirus quarantine scofflaws with smartphone geo-fences. So, which nation will be next?" *The Register*, 24 March. ([https://www.theregister.com/2020/03/24/coronavirus\\_quarantine\\_cellphone/](https://www.theregister.com/2020/03/24/coronavirus_quarantine_cellphone/)).
- 89 Wang, C. Jason, Chun Y. Ng and Robert H. Brook. 2020. "Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing." *RAND*, 1 April. ([https://www.rand.org/pubs/external\\_publications/EP68123.html](https://www.rand.org/pubs/external_publications/EP68123.html)); Di Paolo Emilio, Maurizio. 2020. "Taiwan's Electronic Fence System Draw Global Attention." *Electronic Engineering Times Asia*, 3 July. (<https://www.eetasia.com/taiwans-electronic-fence-system-draw-global-attention/>).
- 90 Bhatia, Dominika, et. al. 2020. "COVID-19 Case and Contact Tracing." 61.
- 91 "Personal Data Protection Act 2015." (Taiwan), "Laws and Regulations Database of the Republic of China." 30 December 2015. (<https://law.moj.gov.tw/ENG/LawClass/LawAll.aspx?pcode=10050021>).
- 92 Goldwasser, Shafi and Audrey Tang. "The Digital Fence: Taiwan's Response to COVID-19." *Simons Institute Polylogues Series*, 6 April. (<https://simons.berkeley.edu/news/simons-institute-polylogues-digital-fence-taiwan-response-covid-19>).



is buttressed by Article 6 of the PDPA, reinforcing that the government will not collect individuals' personal data except in times of public emergency.<sup>93</sup> The PDPA restricts the government in the types of private data it can access, as well as specifying that such data may not be used to reveal individuals' identities.<sup>94</sup> The data recorded through Taiwan's digital fence was not directly shared with the government. Instead, whilst Taiwanese telecommunications corporations undertook the task of digital monitoring, authorities and law enforcement were notified only when there was non-compliance with quarantine measures.<sup>95</sup> Furthermore, while the health authorities and police monitored quarantined persons via Smart Care Management – a portal combining facial recognition technology and GPS tracking – the system is designed to ensure that people's private data cannot be recorded beyond the duration of their quarantine, but will be automatically deleted.<sup>96</sup>

Where Taiwan differed from the ROK and Singapore in contact-tracing was an increased emphasis on the human element. Instead of phone apps, Taiwan used peoples' phone signals for contact-tracing.<sup>97</sup> This was combined with the Police Cloud Computing Plan, first established in 2012, combining data from nation-wide law enforcement agencies to provide a comprehensive database for contact-tracing. Such data enabled teams of law enforcement and health authorities to pinpoint the locations of quarantined persons who had turned their phones off to evade surveillance.<sup>98</sup>

Yet, the hastiness with which Taiwan responded to COVID-19 by adopting enhanced surveillance measures has resulted in debate over their legitimacy.<sup>99</sup> After the 2003 SARS outbreak, the Constitutional Court ruled that imposition of emergency measures must be limited to the duration of the crisis.<sup>100</sup>

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<sup>93</sup> "Personal Data Protection Act 2015" (Taiwan).

<sup>94</sup> "Personal Data Protection Act 2015" (Taiwan).

<sup>95</sup> Zhang. 2020. "Enforcing quarantine with digital technologies in Taiwan." 44.

<sup>96</sup> Martin, Nicholas. 2020. "The Role of Digital Tools in Taiwan's Response to COVID-19." Fraunhofer Institute, 1 May. (<https://corona.forum-privatheit.de/the-role-of-digital-tools-in-taiwans-response-to-COVID-19/?fbclid=IwAR1S-uCtjo4FMl76YLvWEXeKncOvJ8b-fqxJ1HKb45TMSknRO716eMijYM7g>); Bhatia, Dominika, et al. 2020. "Digital Contact Tracing." 20; Francis, et. al. "Digital Contact Tracing."

<sup>97</sup> Zhang. 2020. "Enforcing quarantine with digital technologies in Taiwan." 47.

<sup>98</sup> Bhatia, Dominika, et. al. 2020. "COVID-19 Case and Contact Tracing." 62–63; "Coronavirus: Under surveillance and confined at home in Taiwan." BBC, 24 March 2020. (<https://www.bbc.com/news/technology-52017993>).

<sup>99</sup> Lin, Wu, and Wu. 2020. "Reimagining the Administrative State in Times of Global Health Crisis." 12–13.

<sup>100</sup> Chang. 2020. "Taiwan's Fight against COVID-19."

In spite of this ruling, further revisions to the CDC Act have continued to give the authorities significant powers to apply restrictive measures.<sup>101</sup> The fact that the public health measures passed by Taiwan following the COVID-19 outbreak were passed in less than three weeks aroused concern over potential abuses of power.<sup>102</sup> In order to allay these concerns, Taiwan's increased surveillance measures incorporated provisions that explicitly spelled out their necessity.<sup>103</sup> Further assuaging public concerns, the Taiwanese Government has avoided issuing emergency decrees or shutting down state and legislative organs.<sup>104</sup> Competent technocrats with appropriate levels of experience in managing public health disasters were appointed, thereby reinforcing the public's trust that the authorities would act efficiently in serving the public's interests.<sup>105</sup>

Taiwan's success in civic engagement was reflected in the public's trust in government institutions, and the corresponding consent for the authorities' access to people's data, in the knowledge that such powers would not be abused.<sup>106</sup> Over the course of its implementation prior to COVID-19, the Police Cloud Computing Plan had been used only for data-gathering in tracking criminal activity, generating a track record of trustworthiness reflected in 73.7% of the public approving of the system.<sup>107</sup> The pre-COVID-19 credentials of transparency thus functioned as an additional assurance to the public that their private data would not be abused.<sup>108</sup>

Public engagement with the populace and the strong sense of shared civic responsibility

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**101** Wen-Chen Chang. 2020. "Taiwan's Fight against COVID-19: Constitutionalism, Laws, and the Global Pandemic." *Center for Global Constitutionalism*, 21 March. (<https://verfassungsblog.de/taiwans-fight-against-covid-19-constitutionalism-laws-and-the-global-pandemic/>).

**102** Lin, Wu and Wu. 2020. "Reimagining the Administrative State in Times of Global Health Crisis." 12–13.

**103** Lin, Wu and Wu. 2020. "Reimagining the Administrative State in Times of Global Health Crisis." 7.

**104** Lee, Chien-Liang. 2020. "Taiwan's Proactive Prevention of COVID-19 under Constitutionalism." *Center for Global Constitutionalism*, 22 April. (<https://verfassungsblog.de/taiwans-proactive-prevention-of-covid-19-under-constitutionalism/>).

**105** Lin, Wu and Wu. 2020. "Reimagining the Administrative State in Times of Global Health Crisis." 13, 16.

**106** Lee, Yimou. 2020. "Taiwan's new 'electronic fence' for quarantines leads wave of virus monitoring." *Reuters*, 20 March. (<https://www.reuters.com/article/us-health-coronavirus-taiwan-surveillanc-idUSKBN2170SK>); Yen, Wei-Ting. 2020. "Taiwan's COVID-19 Management: Developmental State, Digital Governance, and State-Society Synergy." *Asian Politics and Policy* 12,3: 463–465; Lin, Wu and Wu. 2020. "Reimagining the Administrative State in Times of Global Health Crisis." 8.

**107** "Police Cloud – M-Police Mobile Computer System." *Taiwan Smart City Online Portal*. (<https://en.smartcity.org.tw/index.php/en-us/component/k2/item/47-police-cloud-m-police-mobile-computer-system>).

**108** Yen. 2020. "Taiwan's COVID-19 Management."

facilitated these efforts.<sup>109</sup> Yang Wan-Ying and Tsai Chia-hung<sup>110</sup> emphasise the strong sense of collective responsibility for society, with 68.2% of their research respondents placing a higher priority on public safety than individual privacy.<sup>111</sup> Such trust facilitated the public's voluntary cooperation in accepting the high level of intrusive measures necessary for efficient surveillance and contact tracing.<sup>112</sup>

Furthermore, the presence of a strong multi-stakeholder system fortified the Agile Governance model against online misinformation. Particularly significant was the role of the Taiwanese online community that, within days of the outbreak, began the development of a full range of apps to provide the public with information on the availability of face-masks, hand sanitisers and other necessities.<sup>113</sup> This was aided by the close levels of collaboration between the online community and the government, a factor facilitated by the background of the country's Digital Minister, Audrey Tang, as a former hacktivist.<sup>114</sup> The success of such collaboration was evident in the extent to which the Taiwanese authorities designed public health policies based on high levels of civic engagement and demographic inclusiveness.<sup>115</sup>

Andreas Kluth<sup>116</sup> referred to the Taiwanese approach as 'participatory self-surveillance', in which the populace actively engaged with the government, enabling 'information flows both from the bottom up and from the top down',<sup>117</sup> a process facilitated by the vTaiwan online portal.

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**109** Hsu Chin-Hsien, Lin Hsiao-Hsien Lin, Wang Chun-Chih and Jhang Shangwun. 2020. "How to Defend COVID-19 in Taiwan? Talk about People's Disease Awareness, Attitudes, Behaviors and the Impact of Physical and Mental Health." *International Journal of Environmental Research and Public Health* 17, 13.

**110** (both) National Chengchi University.

**111** Yang and Tsai. 2020. "Democratic Values, Collective Security, and Privacy: Taiwan People's Response to COVID-19." *Asian Journal for Public Opinion Research* 8, 3. 230.

**112** Yang and Tsai. 2020. *Democratic Values, Collective Security, and Privacy.* 236.

**113** Chou, Christine and Steven O. Kimbrough. 2020. "Not All Heroes Wear Capes: The Contributors Behind the Battle Against the Coronavirus Outbreak in Taiwan." *The Wharton School of the University of Pennsylvania*, 27 July. (<https://knowledge.wharton.upenn.edu/article/taiwans-tech-savvy-citizens-helped-flatten-covid-19-curve/>). 17–18.

**114** Chou and Kimbrough. 2020. "Not All Heroes Wear Capes." 5–8.

**115** "Taiwan's Strong COVID-19 Response."

**116** Author for Bloomberg Opinion.

**117** Kluth, Andreas. 2020. "If We Must Build a Surveillance State, Let's Do It Properly." Bloomberg, 22 April. 2020. (<https://www.bloomberg.com/opinion/articles/2020-04-22/taiwan-offers-the-best-model-for-coronavirus-data-tracking>).

vTaiwan, first unveiled by Tang in 2016,<sup>118</sup> was designed to function as an instrument of civic engagement with the populace. The portal consists of a multi-stage process, including an ‘objective stage’ involving crowdsourcing facts related to societal challenges; this is followed by a ‘reflective’ stage via the *Pol.is* online portal that seeks to build a nation-wide consensus, from which key stakeholders are able to draw up specific recommendations for government policy.<sup>119</sup>

Tang emphasised the trust between the government and populace. She argued that by empowering the island’s online community to have a high level of public buy-in on the shared goal of suppressing the virus, it was the ‘first time hackers have really felt that they are like the designers of civil engineering projects ... Because we trust the people ... the people trust back.’<sup>120</sup> Responding to the threat of disinformation and rumour-mongering, the Taiwanese authorities adopted the ‘2-2-2’ rule, which operates on a strategy of ‘humour over rumour’, requiring government ministries to clarify false reports within 20 minutes, in 200 words and with two humorous images to outpace the spread of misinformation.<sup>121</sup> Elsewhere, the Taiwan Fact Check Center, first established in 2018, used WhatsApp to launch a chatbot to assist the public in fact-checking to expose fake news.<sup>122</sup> Furthermore, the transparency of Taiwan’s online community has added resilience to the threat posed by fake news, with Taiwan’s internet users reporting suspicious-looking online posts to the Cofacts chatbot and the Taiwan FactCheck Center for verification.<sup>123</sup>

Yet, the extent to which these measures address the aforementioned blind spots mentioned in

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**118** Horton, Chris. 2018. “The simple but ingenious system Taiwan uses to crowdsource its laws.” *MIT Technology Review*, 21 August. (<https://www.technologyreview.com/2018/08/21/240284/the-simple-but-ingenious-system-taiwan-uses-to-crowdsource-its-laws/>).

**119** “How it works.” vTaiwan. (<https://info.vtaiwan.tw/>); “vTaiwan.” Nesta. (<https://www.nesta.org.uk/feature/six-pioneers-digital-democracy/vtaiwan/>).

**120** Silva, Shiroma. 2020. “Coronavirus: How map hacks and buttocks helped Taiwan fight COVID-19.” *BBC*, 7 June. (<https://www.bbc.com/news/technology-52883838>).

**121** Bondaz, Antoine. 2020. “The Use of the Digital Fence system is a crucial part of Taiwan’s current epidemic prevention measures: A Conversation with Audrey Tang.” *Fondation Recherche Strategique*. (<https://www.frstrategie.org/sites/default/files/documents/publications/autres/2020/Interview%20Audrey%20Tang.pdf>).

**122** Wong, Carlson. 2020. “IFCN’s chatbot to curb COVID-19 infodemic.” *Radio Taiwan International*, 7 May. (<https://en.rti.org.tw/radio/programMessageView/id/102962>).

**123** Walter Kerr and Macon Phillips. 2020. ‘Taiwan Is Beating Political Disinformation. The West Can Too.’ *Foreign Policy*, 11 November. (<https://foreignpolicy.com/2020/11/11/political-disinformation-taiwan-success/>).

the ROK and Singapore case studies remains debatable. Caution is necessary in prematurely drawing research conclusions, particularly in attempting to prove a negative (for instance, an absence of further COVID-19 outbreaks in Taiwan within the kind of marginalised communities discussed in the Korean and Singapore case studies). Chen Mei-Hua<sup>124</sup> noted that, even if hostess bars are closed, many 'sex workers are the breadwinners for their families, thus they quickly turn to social media such as WeChat or LINE in seeking clients.'<sup>125</sup> Likewise, although the Taiwanese authorities made efforts to provide hand sanitisers and health education to the country's homeless and undocumented workers,<sup>126</sup> the likelihood that such marginalised communities have been undercounted creates an opening through which a resurgence of the virus may occur, if Taiwan were to prematurely lower its guard against imported infections.<sup>127</sup> Such a case in point was illustrated in December, when an airline pilot failed to abide by Taiwan's virus prevention measures, leading to a series of cases in the country.<sup>128</sup> ■

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124 National Sun Yat-Sen University.

125 Chen Mei Hua, 2020. "Taiwanese Sex Workers Amid the COVID-19 Pandemic." *Taiwan Insight*, 25 May. (<https://taiwaninsight.org/2020/05/25/taiwanese-sex-workers-amid-the-covid-19-pandemic/>).

126 Shapiro, Don. 2020. "Taiwan shows its mettle in coronavirus crisis, while the WHO is MIA." *Brookings Institution*, 19 March. (<https://www.brookings.edu/blog/order-from-chaos/2020/03/19/taiwan-shows-its-mettle-in-coronavirus-crisis-while-the-who-is-mia/>).

127 Chang, Cindy, 2020. "Taipei's homeless are few but desperate." *Los Angeles Times*, 25 June. (<https://www.latimes.com/world-nation/story/2020-06-25/taipeis-homeless-are-few-but-desperate>).

128 "Airline pilot blamed for Taiwan's first Covid case in months." *BBC*, 24 December 2020. (<https://www.bbc.com/news/world-asia-55433588>).



# CONCLUSION: POLICY IMPLICATIONS

Since the COVID-19 pandemic is ongoing, it is important to not draw premature research conclusions; however this comparative study of the ROK, Singapore and Taiwan suggests the following four conclusions as a basis for policy efforts to suppress the virus and to build a more resilient post-pandemic world.

## Adaptable Pre-Crisis Preparation

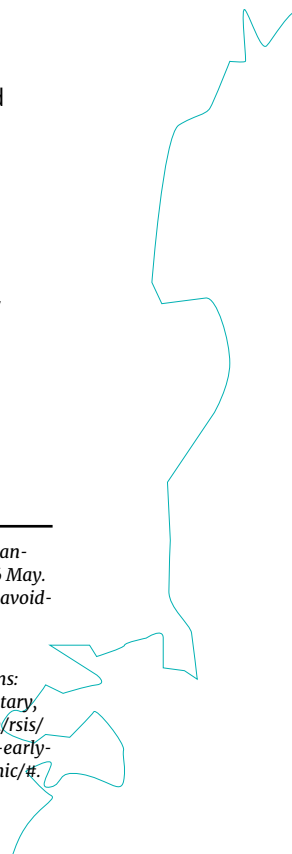
The rapidity with which the ROK, Singapore and Taiwan activated plans to cope with COVID-19 attests to the importance of comprehensive preparation.<sup>129</sup> This, in conjunction with the incorporation of devils' advocates into policymaking bodies to identify possible future crises and eliminate policy blind spots, provides policymakers with an early-warning capacity to respond to emergencies.<sup>130</sup> The overlap between the Agile Governance model, the ROK's quadruple learning model, and Taleb's Anti-Fragile model highlights the potential for further comparative study.

With its emphasis on human-centered, socially inclusive public policies, the Agile Governance model can contribute to this by facilitating channels through which governments can crowdsource innovative problem-solving approaches from civil society and NGOs, targeting policy blind spots missed by government bureaucrats. The ROK's quadruple learning model, as a specific illustration of Agile Governance, demonstrates that government organs should not merely learn from past successes and failures but should go a step further in identifying plausible contingencies that may arise, and ensuring that emergency plans can be reconfigured to changing circumstances at short notice. Similarly, the Anti-Fragile model, by envisioning multiple lines of defense against unconventional threats like pandemics, strengthens social resilience, thereby enhancing the capacity of a population to cope with unanticipated threats that may still occur in spite of the best-possible pre-crisis contingency plans.

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<sup>129</sup> Braw, Elizabeth, 2020. "Want to Avoid the Next Pandemic? Hire a Devil's Advocate." *Foreign Policy*, 6 May. (<https://foreignpolicy.com/2020/05/06/want-to-avoid-the-next-pandemic-hire-a-devils-advocate/>).

<sup>130</sup> Harjani, Manoj. 2020. "Global Health Security: COVID-19 and Its Impacts – Early Warning Systems: Stumbling Blocks Post-Pandemic." *RSIS Commentary*, 16 June. (<https://www.rsis.edu.sg/rsis-publication/rsis/global-health-security-covid-19-and-its-impacts-early-warning-systems-stumbling-blocks-post-pandemic/#.Xv7bDqEzbc>).



## Digital Surveillance as a Tool, Not a Panacea

The three case studies reflect that whilst digital technology is an important tool in contact-tracing, it should not be seen as a substitute for the human element. Although the ROK and Singapore relied heavily on digital technology in their pandemic responses, the fact that both continued to face additional outbreaks within marginalised communities indicates that technology should not be considered a panacea. Rather, the circumstances surrounding these newer outbreaks show that demographic inclusiveness is a crucial part of a long-term strategy of suppressing the virus.

Conversely, Taiwan's approach to contact-tracing, by placing heavier emphasis on the human element, underscores the importance of establishing and sustaining a relationship of trust and transparency between a government and its populace. Even so, the replicability of the Taiwanese model of Agile Governance to other countries needs to be qualified, for two reasons. The first of these stems from the difficulty of fine-tuning the Agile Governance model to ensure that virus countermeasures reach marginalised communities. Whilst Taiwan has thus far been spared, and also has a largely more progressive societal outlook compared to the ROK and Singapore, it should be recalled that correlation (Taiwan's progressive policies) does not necessarily imply causation (absence of virus outbreaks in Taiwan). Even within Taiwan, marginalised communities face overall public ostracism. If Taiwan or other countries that have officially 'eliminated' the virus within their territory were to face new infections, either from asymptomatic cases, or imported infections resulting from diminished vigilance at points of entry, such demographic gaps could see resurgent outbreaks.<sup>131</sup>

Second, the success of Taiwan's model of Agile Governance has rested on the high level of trust between the Government and the populace, as well as the public's willingness to sacrifice personal liberties in pursuit of a long-term collective benefit. By comparison, it is difficult to imagine the Taiwanese model succeeding in the present-day United States, with its high political polarisation and

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<sup>131</sup> This has been reflected in the experience of Vietnam and New Zealand, which went for several months in 2020 without any new COVID-19 infections, only for both countries to see new outbreaks in July and August respectively.

prioritisation of individual liberties at the expense of the collective good, and a notion of freedom of speech so sacrosanct as to accept conspiracy theories as part of the mainstream narrative.<sup>132</sup> The efficacy of the Taiwanese model of Agile Governance is dependent on a clearly established relationship of trust between a well-informed public, competent and transparent government authorities, the mass media, civil society, and other stakeholders.

## Oversight of Digital Technology

The three case studies also underscore that the efficacy of digital contact-tracing is dependent on trust between policymakers and the populace. This has been most clearly evident in Taiwan and the ROK (during the early stages of its COVID-19 outbreak), where an established track record of transparency in public institutions' handling of private data contributed to public confidence in cooperating with government measures for combating the virus. Whether the more recent revelation of the ROK's gaps in data protection have undermined public trust will require follow-up evaluation. Meanwhile, the Taiwanese case illustrates that trust is the social bond underpinning the Agile Governance model. Yang and Tsai describe two types of trust: social trust, the sense of social solidarity towards the shared objective of overcoming COVID-19, and political trust in democratic institutions.<sup>133</sup> The Taiwanese public's acknowledgment that the collective safety of society as a whole is a higher priority than individual privacy rights, in conjunction with trust that their democratically accountable institutions will not abuse personal data, was reflected in broad public cooperation with the authorities in consenting to the high level of intrusiveness that facilitated efficient contact-tracing.<sup>134</sup>

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**132** Mitchell, Amy, Mark Jurkowitz, J Baxter Oliphant and Elisha Shearer. 2020. "Three Months in, Many Americans See Exaggeration, Conspiracy Theories and Partisanship in COVID-19 News." Pew Research Center, 29 June. (<https://www.journalism.org/2020/06/29/three-months-in-many-americans-see-exaggeration-conspiracy-theories-and-partisanship-in-covid-19-news/>).

**133** Yang and Tsai. 2020. "Democratic Values, Collective Security, and Privacy." 237.

**134** Yang and Tsai. 2020. "Democratic Values, Collective Security, and Privacy." 237.

## Enforcement Action

It is also necessary to recognise the presence of societal scofflaws that may opt out of efforts by the rest of the community to participate in the collective measures needed to suppress COVID-19. These may range from entities that refuse to cooperate with the authorities in providing information for contact-tracing, to those with a wilful disregard of public health guidelines. In order to send a signal to the rest of society that such actions contravene the public good, it would be necessary for the authorities to undertake legal action against them. At the same time, however, in order to ensure that authorities do not overreach in the exercise of power, it is necessary for states' law statutes to be specific in outlining the circumstances under which such actions constitute a wilful defiance, endangering the public good. ■

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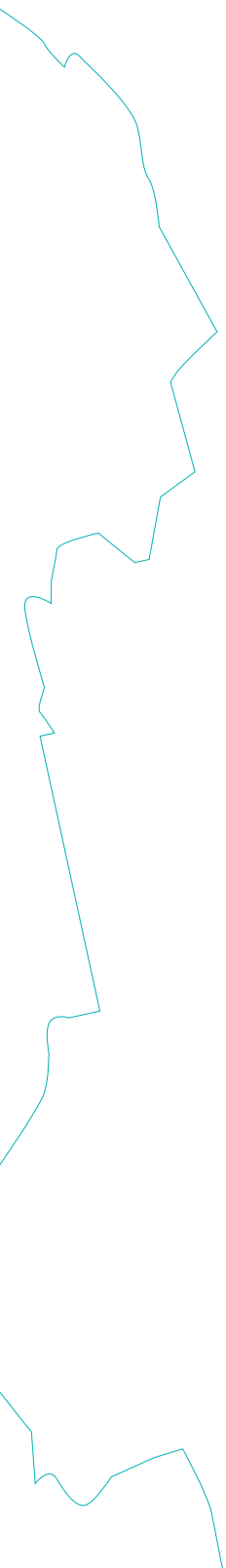
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A teal-colored outline map of Singapore and India is positioned in the background. The map shows the island of Singapore on the left and the Indian subcontinent on the right. The text is overlaid on the Singapore portion of the map.

# **DIGITAL CONTACT TRACING: ASSESSING EFFECTIVENESS AND PRIVACY TRADE-OFFS IN SINGAPORE AND INDIA**

Tristan Chabas

# KEY TAKEAWAYS

- Under pressure to act swiftly, governments around the world hastily launched digital contact tracing mobile applications as COVID-19 began overwhelming their public health infrastructures. In Asia, two early adopters were Singapore, which launched TraceTogether in March, and India, which launched Aarogya Setu in April.
- While there is a broad consensus among the scientific community that digital contact tracing has the potential to curtail the spread of COVID-19, early results have varied. Both applications have, to varying degrees of success, aided public health authorities in their efforts to identify proximity contacts, but these modest gains have come at a cost.
- India's Aarogya Setu, due in part to joint development with the private sector, has underlying conflict of interest issues. For example, the application is overly intrusive in its data collection, as it requires its users to divulge their demographic information while lacking proper privacy safeguards.
- In Singapore, the use of TraceTogether was, until recently, optional for everyone except for foreign migrant workers living in dormitories. Although high rates of adoption are necessary for the success of digital contact tracing solutions, they should not be achieved through force or coercion. Discriminatory rules for marginalised segments of the population should be scrutinised closely, as they can easily set the foundation for further unequal encroachments on civil liberties.
- Because contact tracing requires identifying infected people, individuals must tolerate greater invasions of privacy than they would accept in normal times. Their willingness to surrender personal data depends on what they receive in return.
- Without transparency and accountability regarding these intrusions, policymakers are implicitly paving the way for potential abuses. Since policymakers cannot guarantee that their applications will help control the virus' spread, they should – at minimum – ensure that they are not jeopardising their users' personal information.

From the moment governments understood the severity of the COVID-19 pandemic, they turned to technology for solutions that could dampen its impact and slow its spread. One of the most promising interventions has been digital contact tracing, which uses technology to identify and inform users when they have been in close contact with an infected individual. Bolstered by this promise, countries around the world have rushed to release their own versions of digital contact tracing applications.

In Asia, two early adopters were Singapore and India. Singapore launched its mobile application, TraceTogether, in late March 2020, while India released its application, Aarogya Setu, in early April. Singapore leads the region in terms of smartphone penetration, with more than 90% of its adult population using smartphones.<sup>1</sup> By contrast, in India, estimates suggest that only roughly 30% of the adult population owns smartphones.<sup>2</sup> Although the two countries appear to share little when it comes to technological penetration, data from Johns Hopkins University indicates both have witnessed similar COVID infection rates. As of early November, Singapore had witnessed 58,000 cases (roughly one percent of the total population), while India had just over eight million confirmed cases (~0.6% of the population), although the true extent of the disease's spread is likely greater.<sup>3</sup> Despite their differences, this paper focuses on these two case studies as the juxtaposition of their starting conditions can be instructive for policymakers in similar circumstances.

The paper begins by briefly defining an understanding of the term 'contact tracing' and what digital contact tracing seeks to accomplish. It then considers why it became such a favoured technologically-driven response before reviewing whether the actual implementation has lived up to expectations in India and Singapore. Finally, the paper seeks to explore and analyse some of the privacy designs that have been associated with the frameworks used in both Singapore and India.

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- 1 "New Report Reveals Singapore Has the Highest Smartphone Penetration in the Region." REBL, 20 March 2019. (<https://rebl.sg/new-report-reveals-singapore-has-the-highest-smartphone-penetration-in-the-region/>).
  - 2 Rai, Subhash. 2020. "Aarogya Setu: The Bridge to Nowhere." *Janata Weekly*, 14 June 2020 (<https://janataweekly.org/aarogya-setu-the-bridge-to-nowhere/>).
  - 3 Johns Hopkins Coronavirus Resource Center. 2020. "COVID-19 Map." (<https://coronavirus.jhu.edu/map.html>).

## Contact Tracing Goes Digital

The World Health Organization defines contact tracing as “the process of identifying, assessing, and managing people who have been exposed to a disease to prevent onward transmission.”<sup>4</sup> Digital contact tracing promises to overcome some key limitations of manual contact tracing, such as reliance on human memory and the reach of human contact tracers, by leveraging the ubiquity of Bluetooth and GPS-enabled smartphones to assist public health officials in scaling up their efforts.

Researchers have studied the potential effectiveness of contact tracing applications and whether they can successfully stem the spread of the virus. In mid-April, a group of epidemiologists from Oxford University published what would become one of the most widely cited studies on this issue. After demonstrating that roughly half of the transmissions occurred before anyone showed symptoms, they generated a scenario where a mobile application is rolled out in a city of one million inhabitants. They concluded that “a digital contact tracing app, if carefully implemented alongside other measures, has the potential to substantially reduce the number of new Coronavirus cases, hospitalisations and ICU admissions”.<sup>5</sup> Under pressure to act swiftly, many countries in Asia, including Singapore and India, had already begun to roll out contact tracing apps for their citizens.

The promise afforded by contact tracing technologies even paved the way for a rare collaboration between Apple and Google in May of 2020. The two technology giants jointly developed a Bluetooth framework that allows for contact tracing on devices running either one of their operating systems. Given that the two operating systems collectively account for 98% of smartphones worldwide, the announcement was met with a mixture of hope and scepticism. At a time when big technology companies are often suspected of violating their users’ privacy, Apple and Google pledged that no location data or personal data

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4 World Health Organization. 2020. “Contact Tracing in the Context of COVID-19.” (<https://www.who.int/publications/i/item/contact-tracing-in-the-context-of-covid-19>).

5 Fraser, Christophe. 2020. “Digital Contact Tracing Can Slow or Even Stop Coronavirus Transmission and Ease Us out of Lockdown.” University of Oxford Research, 16 April. (<https://www.research.ox.ac.uk/Article/2020-04-16-digital-contact-tracing-can-slow-or-even-stop-coronavirus-transmission-and-ease-us-out-of-lockdown>).

would be recorded.<sup>6</sup> To date, a number of countries, including Germany and Japan, have used this framework to develop their own contact tracing applications.

While a broad consensus regarding the potential effectiveness of digital contact tracing exists among the scientific community, there is also an understanding of this technology's limitations. Importantly, the research team from Oxford University highlighted that in order for them to be effective, digital contact tracing solutions need to be part of a comprehensive public health strategy. Although they can help automate the identification of high-risk individuals, this needs to be accompanied by parallel increases in testing capacity.<sup>7</sup>

In order to determine whether they have been successful, we will consider whether we are in a better position than we would otherwise have been without digital contact tracing applications, *ceteris paribus*. ■

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6 Kelion, Leo. 2020. "Coronavirus: Apple and Google Team up to Contact Trace Covid-19." *BBC News*, 10 April 10. (<https://www.bbc.com/news/technology-52246319>).

7 Wetsman, Nicole. 2020. "Google and Apple's COVID-19 Tracking System Can't Save Lives All on Its Own." *The Verge*, 15 April. (<https://www.theverge.com/2020/4/15/21222161/apple-google-bluetooth-contact-tracing-system-coronavirus-health>).



## Aarogya Setu in India

India's official contact tracing application, Aarogya Setu, was launched by the Indian Ministry of Electronics and Information Technology in April 2020. With more than 127 million downloads as of July 2020, it is the world's most downloaded COVID-19 tracing application.<sup>8</sup> This rate of adoption can be explained by the fact that the Indian government made its app mandatory for millions of people, including government employees, although it has since reneged on the mandatory adoption. As such, the high number of downloads should not necessarily be taken as a popular endorsement.<sup>9</sup>

Since its launch, Aarogya Setu has witnessed some modest success in aiding authorities with the public health imperative. As of late May, the platform had contacted almost a million users who had been flagged as close contacts of infected individuals, advising them to quarantine or get tested. Among this group, 24% tested positive for COVID-19, as compared to less than five percent amongst the population as a whole, highlighting its effectiveness at detecting proximity contacts.<sup>10</sup> Further, the Health Ministry was able to use data from the app to identify over 600 'hotspots' where the virus had been spreading, making recommendations to its users to avoid such areas.<sup>11</sup> Aarogya Setu has also helped frontline workers take adequate precautions in their line of work.

It is difficult to identify or assess the true efficacy of Aarogya Setu and its role in limiting the spread of COVID-19, and so far, the only information available originates

from the government's own, non-independently verified data. The Indian Council of Medical Research (ICMR) looked at contact tracing data for over a million administered COVID-19 tests, of which over 40,000 were positive. The research, released in late

<sup>8</sup> Verma, Shubham. 2020. "Aarogya Setu Now World's Most Downloaded Covid-19 Tracking App." *India Today*, 16 July. (<https://www.indiatoday.in/technology/news/story/aarogya-setu-now-world-s-most-downloaded-covid-19-tracking-app-1701273-2020-07-16>).

<sup>9</sup> Howell O'Neill, Patrick. 2020. "India Is Forcing People to Use Its Covid App, Unlike Any Other Democracy." *MIT Technology Review*, 7 May. (<https://www.technologyreview.com/2020/05/07/1001360/india-aarogya-setu-covid-app-mandatory/>).

<sup>10</sup> Indian Government, Ministry of Electronics & Information Technology. 2020. "Aarogya Setu Is Now Open Source." ([https://static.mygov.in/rest/s3fs-public/mygov\\_159050700051307401.pdf](https://static.mygov.in/rest/s3fs-public/mygov_159050700051307401.pdf)).

<sup>11</sup> KJ, Shashidhar. 2020. "Aarogya Setu App and Its Many Conflicts." *MediaNama*, 8 June. (<https://www.medianama.com/2020/06/223-aarogya-setu-app-and-its-many-conflicts/>).

May, concluded that the mode of transmission of the virus was not known for over 44% of those who tested positive. In South Korea, by contrast, contact tracers have successfully uncovered the source of transmission for over 90% of cases.<sup>12</sup> This research is all the more alarming considering that the ICMR noted that the proportion of unresolved cases had *increased* with time, even as Aarogya Setu's adoption rate grew.

One of the reasons that digital contact tracing has failed to fulfil its potential in India may be put down to its low adoption. High adoption rates were highlighted as an important success criteria in the Oxford University study, which calculated that 56% of the population needed to download a given contact tracing application in order for it to be effective.<sup>13</sup> Yet others believe that adoption by as little as a third of the population may positively contribute to the public health effort.<sup>14</sup> Although Aarogya Setu leads the world in number of downloads, as a percentage of India's 1.3-billion-person population, only 10% of Indians have the application on their smartphones. Even if the lower threshold is taken, in India this presents an unattainable utopia.

There are roughly 400 million smartphone users in India, representing approximately 30% of the total population. Although certain parts of more densely populated cities may have a higher density of smartphone users, for the country as a whole, smartphone penetration is simply too low. Therefore, even if we hypothetically imagine that *all* of India's smartphone users were to download Aarogya Setu, it would *still* not be enough to have any meaningful impact on the overall contact tracing efforts.<sup>15</sup>

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12 S, Rukmini. 2020. "ICMR Data Shows India's Covid Testing Is Not in Right Shape – 5 Things That Need Fixing." *The-Print*, 1 June. (<https://theprint.in/opinion/icmr-data-shows-indias-covid-testing-is-not-in-right-shape-5-things-that-need-fixing/433077/>).

13 Abeler-Dörner, Lucie, et al. 2020. "Effective Configurations of a Digital Contact Tracing App: A report to NHSX." ([https://cdn.the-conversation.com/static\\_files/files/1009/Report\\_-\\_Effective\\_App\\_Configurations.pdf?1587531217](https://cdn.the-conversation.com/static_files/files/1009/Report_-_Effective_App_Configurations.pdf?1587531217)).

14 Howell O'Neill, Patrick. 2020. "No, Coronavirus Apps Don't Need 60% Adoption to Be Effective." *MIT Technology Review* 5 June. (<https://www.technologyreview.com/2020/06/05/1002775/covid-apps-effective-at-less-than-60-percent-download/>).

15 Rai, Subhash. 2020. "Aarogya Setu."

## TraceTogether in Singapore

Singapore was the first country to adopt contact tracing technology, launching its contact tracing application in March 2020. As of early September, TraceTogether had been downloaded by 2.4 million people, or roughly 42% of the country's population.<sup>16</sup>

In its public communications the Singaporean government has extolled TraceTogether's virtues. The Ministry of Health has used TraceTogether to identify close contacts of positive COVID-19 tests, who are then typically contacted by human contact tracers. Thanks to digital contact tracing technology, 118,000 close contacts have been identified since its implementation. It has also helped the government reduce the time it takes to identify and quarantine a close contact from four days to less than two days.<sup>17</sup>

While it has been a helpful tool in Singapore's battle against the pandemic, there are indications that it has not been as useful as anticipated. Initially hailed as one of the few countries that was able to ward off high caseloads, Singapore experienced a prolonged spike in cases in April and May.<sup>18</sup> Even though the spike was predominantly driven by heightened infection rates amongst migrant workers living in dormitories, TraceTogether, whose adoption rate at the time was lower than at present, was still unable to outpace the disease's spread.

Unlike India, Singapore has among the highest internet and smartphone penetration rates in the world. Yet despite TraceTogether's relatively high rate of per-capita adoption, there are signs that it may still be insufficient. In mid-September, the government launched 'wearable' TraceTogether tokens and QR code check points in designated hotspots or venues providing essential services. These have helped to expand the scope and the reach of the contact tracing efforts, by targeting segments of the population that may not own

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<sup>16</sup> Co, Cindy. 2020. "Low Community Prevalence of COVID-19, 0.03% of People with Acute Respiratory Infection Test Positive: Gan Kim Yong." *Channel News Asia*, 4 September. (<https://www.channelnewsasia.com/news/singapore/covid-19-singapore-low-community-prevalence-testing-13083194>).

<sup>17</sup> Co, Cindy. 2020. "Low Community Prevalence."

<sup>18</sup> Bainbridge, Amy. 2020. "When a Second Wave of Coronavirus Reached Singapore, They Hit the 'Circuit Breaker'." *ABC News*, 31 July. (<https://www.abc.net.au/news/2020-07-31/victoria-can-learn-from-singapores-second-wave-of-coronavirus/12502404>).

smartphones or who do not wish to download an application. These recent developments may amount to a tacit admission that TraceTogether's Bluetooth based contact tracing has not worked as initially hoped.<sup>19</sup>

TraceTogether has undoubtedly been a useful tool in Singapore's response to the COVID-19 pandemic. However, its recent efforts, and the associated difficulties with boosting user adoption, suggest that it may not have lived up to its promise. This case study, from a small country with a relatively high level of trust in the government, provides a harsh reality check for other countries that expect digital contact tracing to be a sort of silver bullet. ■

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<sup>19</sup> Asher, Saira. 2020. "TraceTogether: Singapore Turns to Wearable Contact-Tracing Covid Tech." *BBC News*, 4 July. (<https://www.bbc.com/news/technology-53146360>).

Having considered the varying degrees of effectiveness of the contact tracing solutions deployed in India and Singapore, the paper now turns its attention to evaluating the privacy-preserving safeguards present in each application. Indeed, if policymakers cannot guarantee that their applications will help control the virus' spread, they should at the minimum ensure that they are not needlessly jeopardising their users' personal information.

## Aarogya Setu in India

Aarogya Setu's development lacked transparency from the very beginning, and involved the private sector in ways that were not entirely clear. The application was developed through a joint public-private partnership, and, as a result, there remains some ambiguity and some concern over design decisions. For example, it recently emerged that a number of members of a Bengaluru-based technology lobbying group, iSPIRT, contributed to Aarogya Setu's development.<sup>20</sup> Understandably, many fear that certain design choices may have been made by those who have a conflict of interest, such as "a desire to access user data through the app".<sup>21</sup> Partially as a result of these controversial beginnings, Aarogya Setu has, so far, failed to assuage the public's fears.

When downloading the application, users are asked to share demographic data, including their age, travel history and whether they smoke. As a general rule, all personal data (aside from one's phone number), can be considered superfluous for tracing solutions whose purpose is exclusively to alert a user if they may have been exposed to the virus. Indeed, as Chinmayi Arun, a leading Indian privacy lawyers points out, "if the government had been concerned about being able to monitor the number of infected people in particular areas [...], it could have designed a system that flagged trends without identifying individuals".<sup>22</sup>

While the government claims that all the information it collects is being used solely in the interest of public health, it uploads the

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<sup>20</sup> Agrawal, Aditi. 2020. "Untangling the Web That Is Aarogya Setu's Creation." *MediaNama*, 29 October. (<https://www.medianama.com/2020/10/223-aarogya-setu-creation/>).

<sup>21</sup> Arun, Chinmayi. "India's Contact Tracing App Is a Bridge Too Far." *Council on Foreign Relations*, 2 September. ([https://www.cfr.org/blog/indias-contact-tracing-app-bridge-too-far?utm\\_source=tw](https://www.cfr.org/blog/indias-contact-tracing-app-bridge-too-far?utm_source=tw)).

<sup>22</sup> Arun, Chinmayi. 2020. "India's Contact Tracing App."

data to a central government-owned server. Privacy best practices established by other contact tracing technologies dictate that sensitive data should be stored on an individual's phone as opposed to central servers that may be more prone to hacking and misuse by authorities.<sup>23</sup>

Furthermore, after collecting its users' personal data, the government reserves the right to share it with "persons carrying out medical and administrative interventions necessary in relation to COVID-19".<sup>24</sup> This ambiguous language is troubling. It relies solely on the government's interpretation of who should be entitled to data that would, in regular times, be considered confidential. If any data or information is made available to a government agency or public health authority through an application, the extent of their ability to use this data and share it with third parties should be clearly defined.<sup>25</sup> Personal data collected through Aarogya Setu can be shared with "Indian government ministries, public health institutions, and, after anonymisation, universities and research institutions for academic research".<sup>26</sup> This large pool of potential recipients invites the possibility, likely to be exploited, that the information may be shared with third parties seeking to profit from it.

Aarogya Setu uses a combination of Bluetooth and GPS data to track its users' movements and proximity contacts. This is another point of concern, as GPS location data is widely believed to be unnecessary for contact tracing purposes. Aside from being less precise than Bluetooth technology with regards to gauging short distances between devices, it also comes with more privacy trade-offs, as GPS location data is harder to anonymise than Bluetooth data.<sup>27</sup>

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**23** Howell O'Neill, Patrick, Tate Ryan-Mosley, and Bobbie Johnson. 2020. "A Flood of Coronavirus Apps Are Tracking Us. Now It's Time to Keep Track of Them." *MIT Technology Review*, 23 June. (<https://www.technologyreview.com/2020/05/07/1000961/launching-mittr-covid-tracing-tracker/>).

**24** Clarence, Andrew. 2020. "Aarogya Setu: Why India's Covid-19 Contact Tracing App Is Controversial," *BBC News*, 15 May. (<https://www.bbc.com/news/world-asia-india-52659520>).

**25** Amnesty International. 2020. "Joint civil society statement: States use of digital surveillance technologies to fight pandemic must respect human rights." (<https://www.amnesty.org/download/Documents/POL3020812020ENGLISH.pdf>).

**26** Arun, Chinmayi. 2020. "India's Contact Tracing App."

**27** Cantrell, Bethan, et al. 2020. "Outpacing the Virus: Digital Response to Containing the Spread of COVID-19 while Mitigating Privacy Risks." *Harvard University Edmond J. Safra Center for Ethics*, 3 April. ([https://ethics.harvard.edu/files/center-for-ethics/files/white\\_paper\\_5\\_outpacing\\_the\\_virus\\_final.pdf](https://ethics.harvard.edu/files/center-for-ethics/files/white_paper_5_outpacing_the_virus_final.pdf)).

The risk of revealing private data acquired through GPS logs was confirmed when the ‘ethical hacker’ who goes by the pseudonym Elliot Alderson decided to test the application’s privacy-preserving features. Aarogya Setu allows its users to know how many individuals are infected within a given radius surrounding their location, all while supposedly keeping identifying information confidential. However, Alderson was able to modify his location on the application. While this may not sound like a consequential privacy threat, thanks to triangulation, a cyber attacker would be able to pinpoint precise latitude and longitude coordinates to uncover a specific user’s health status.<sup>28</sup> This example further demonstrates the heightened security risks posed by centrally stored GPS data, as well as the lack of appropriate privacy safeguards.

Application developers and the governments who contract them should be transparent about how their digital tracing solutions operate. Transparency is critical – it allows the public to scrutinise the application’s workings and provide feedback for modifications that are in line with their privacy expectations. This is especially important if these applications and the governments that deploy them are truly interested in achieving widespread adoption of their technology. Transparency can take the form of clear, publicly available policies and design, such as an open-sourced code base or other measures that clearly demonstrate their commitment to open dialogue.<sup>29</sup> Unfortunately, Aarogya Setu has fallen short on this count, too. At the time of its release, “neither the privacy policy nor the terms of service were publicly available”.<sup>30</sup> After mounting pressure, the authorities released the source code in late May, only for activists to notice that it was not the one that was being actively developed by authorities, and was unusable by the open-source community.<sup>31</sup> Despite opportunities to prove that it was operating with public health in mind, Aarogya Setu’s developers have regrettably failed to seize them.

Finally, the government has avoided mentioning what might be done with Aarogya Setu after the pandemic is over. Digital contact tracing solutions that are

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<sup>28</sup> Alderson, Elliot. 2020. “Aarogya Setu: The Story of a Failure,” *Medium*, 7 May. (<https://medium.com/@fsoc131y/aarogya-setu-the-story-of-a-failure-3a190a18e34>).

<sup>29</sup> Howell O’Neill, Patrick, Tate Ryan-Mosley, and Bobbie Johnson. 2020. “A Flood of Coronavirus Apps.”

<sup>30</sup> Howell O’Neill, Patrick. 2020. “India Is Forcing People.”

<sup>31</sup> Rai, Subhash. 2019. “Aarogya Setu.”

privacy-preserving often include a *sunset clause*, a provision that states when surveillance activities end, and confirms that any remaining data will be destroyed after this date.<sup>32</sup> The Indian government has neglected to specify what will happen to the data it collects after the pandemic, and it is not mentioned in the application's Terms of Service.<sup>33</sup> Many people are worried, with good cause, that the app may not be withdrawn in the wake of the pandemic, and may instead be repurposed for surveillance purposes.

As the coronavirus pandemic continues to ravage countries around the world, including India, citizens may be willing to sacrifice some privacy in exchange for an assurance that it will be worthwhile in aiding the public health effort. Unfortunately, the privacy sacrifices associated with using Aarogya Setu outweigh the potential upside of an unproven application. Aarogya Setu is overly intrusive in its data collection, lacking in safeguards regarding data usage and insufficiently transparent.<sup>34</sup> Before it can count on the buy-in of more users, the application's developers must address these issues.

## TraceTogether in Singapore

TraceTogether was developed by the Singaporean Government Technology Agency (GovTech). From the beginning, the GovTech team favoured building a contact tracing application that used Bluetooth protocol to identify proximity contacts, given its greater accuracy. Unlike GPS systems, Bluetooth will only pick up signals from devices within a certain radius, instead of all devices that share the same GPS coordinates, which may include devices that are on different floors or in distant parts of the same building. This avoids flooding the system with false positives. Instead, public health authorities can focus their attention on plausible cases of disease transmission.<sup>35</sup> It is, however, worth noting that Bluetooth technology is not a cure-all, as it requires fine-tuning on the back end to ensure that it is picking up signals from devices that are close enough for their users to transmit a virus.

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<sup>32</sup> Mauro, Aaron. 2020. "Coronavirus Contact Tracing Poses Serious Threats to Our Privacy." *The Conversation*, 10 May. (<https://theconversation.com/coronavirus-contact-tracing-poses-serious-threats-to-our-privacy-137073>).

<sup>33</sup> Rai, Subhash. 2020. "Aarogya Setu."

<sup>34</sup> Shahane, Girish. 2020. "Opinion: Does Aarogya Setu Really Work?" *Mint*, 28 May. (<https://www.livemint.com/mint-lounge/features/opinion-does-aarogya-setu-really-work-11590636898864.html>).

<sup>35</sup> Cantrell, Bethan, et al. 2020. "Outpacing the Virus."



Bluetooth protocols do not only provide greater accuracy; they also offer fewer privacy trade-offs than location tracking alternatives. When two phones come into close contact with one another, the information that is shared between them only consists of the anonymous tokens that register the interaction. These tokens can be cryptographically secured in a way that makes them less vulnerable to de-anonymisation than GPS location histories.<sup>36</sup> Thanks to this system, a user is incapable of knowing who the tokens stored in their app belong to. These tokens also provide a higher level of protection than those that run on GPS protocols as the data is encrypted and stored on a user's device, instead of a central server.<sup>37</sup>

When downloading and signing up for the app, users must only share their phone number. No other personal information is collected, meaning that it is only collecting the minimum data necessary for contact tracing purposes. The app creates temporary IDs that change regularly, meaning that the lack of a consistent identifier makes it nearly impossible for third party snoopers to identify or track individuals. Furthermore, the data collected through TraceTogether is only stored locally on users' devices for 21 days before being automatically deleted.<sup>38</sup> Of course, data detailing potential exposure to a source of contamination becomes useless once the window for testing has passed. By automatically destroying data at regular intervals, the Singaporean government is signalling that it will not be using the data at a later date for purposes other than contact tracing.

GovTech also sought to create a transparent solution. TraceTogether's source code is open-sourced, inviting outside scrutiny.<sup>39</sup> In its privacy statement, the government clearly states that the data it collects through the application will be used solely for contact tracing purposes. It also clarifies that usage of the application is timebound; once contact tracing activities cease in the wake of the pandemic, users will be prompted to disable its functionalities and dispose of their tokens.<sup>40</sup> While all of the privacy safeguards de-

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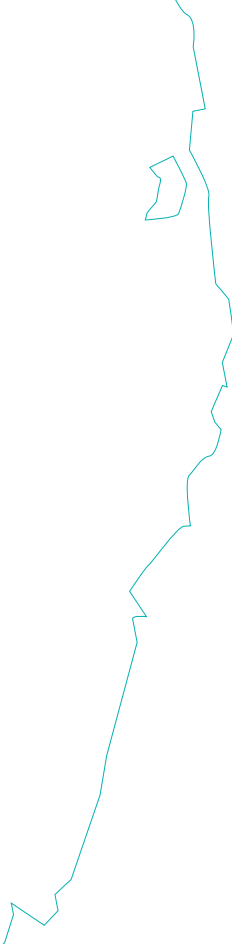
<sup>36</sup> Cantrell, Bethan, et al. 2020. "Outpacing the Virus."

<sup>37</sup> Cantrell, Bethan, et al. 2020. "Outpacing the Virus."

<sup>38</sup> Singapore Government Technology Agency. 2020. "Press Release: Launch of New App for Contact Tracing." (<https://www.smartnation.gov.sg/whats-new/press-releases/launch-of-new-app-for-contact-tracing>).

<sup>39</sup> Singapore Government Technology Agency. 2020. "Press Release."

<sup>40</sup> "TraceTogether Privacy Statement." TraceTogether. gov.sg. (<https://www.trace-together.gov.sg/common/privacystatement>).



scribed above are steps in the right direction, TraceTogether has still come under attack for failing to respect its users' civil liberties in certain cases.

Although high rates of adoption are a precondition for digital contact tracing solutions to be effective, they should not be achieved through force or coercion.<sup>41</sup> Instead, citizens should feel an obligation to download a digital contact tracing solution in the interest of the public good, under the assurance that all necessary safeguards are in place and that their personal information will not be jeopardised. For the majority of the duration of the pandemic, all Singaporean residents could voluntarily choose whether to download TraceTogether, *except* for foreign migrant workers living in dormitories.<sup>42</sup> The government justified this distinction by stating that these dormitories are the perfect breeding ground for the disease to spread. Although TraceTogether will become mandatory for the *entire* population by the end of December 2020,<sup>43</sup> in general, imposing disparate rules for different segments of the population should be monitored closely, as it may be setting the foundation for further encroachments on civil liberties.

Another privacy concern arises when a TraceTogether user is suspected of having been exposed to the virus. By law, they must share the tokens that are locally stored on their phone with the Ministry of Health (MOH), or risk prosecution.<sup>44</sup> Such anxiety-provoking regulations may partially explain why Singapore has struggled to push the app's user adoption past the 50% threshold. Fear should not be used as a motivator during public health efforts. Instead, the government should clearly communicate the benefits of sharing this information and the risks associated with keeping them on one's phone. If this barrier is removed and the benefits of cooperating with the MOH in its contact tracing efforts are clearly enumerated, user adoption will likely increase.

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<sup>41</sup> Howell O'Neill, Patrick, Tate Ryan-Mosley, and Bobbie Johnson. 2020. "A Flood of Coronavirus Apps."

<sup>42</sup> Wong, Lester. 2020. "All Foreign Workers Have to Download and Activate TraceTogether App by June 19: MOM." *The Straits Times*, 16 June. (<https://www.straitstimes.com/singapore/all-foreign-workers-have-to-download-and-activate-tracetogther-app-by-june-19-mom>).

<sup>43</sup> Wong, Lester. 2020. "Use of TraceTogether App or Token Mandatory by End Dec." *The Straits Times*, 12 November. (<https://www.straitstimes.com/singapore/use-of-tracetogther-app-or-token-mandatory-by-end-dec>).

<sup>44</sup> Hwa, Ang Peng. 2020. "The More We TraceTogether, the Safer We Will Be." *The Straits Times*, 16 June. (<https://www.straitstimes.com/opinion/the-more-we-tracetogther-the-safer-we-will-be>).

Finally, it has been noted that while the necessary safeguards have been adopted to protect users from one another and from malignant hackers, that privacy protection does not extend to the government. After a user is diagnosed and shares their tokens with the MOH, the government retrieves the phone numbers of all contacts a user has been near. Therefore, “neither the diagnosed user, nor the exposed contacts, have any privacy from the government”, and potentially uninfected users are no longer in control of their data.<sup>45</sup> The Singaporean government claims that this is a necessary price to pay to protect the health of its citizens, and that the myriad security precautions it has taken elsewhere make up for this infringement. Nevertheless, this is another area that presents plenty of potential for abuse and should be surveyed closely.

The Singaporean government has taken many proactive steps to assuage its citizens’ security and privacy concerns. Its commitment to transparency, minimal data collection and regular data destruction are laudable and represent important steps to protecting its users’ privacy, especially given that the application’s effectiveness remains unproven. Notwithstanding these advances, it has struggled to increase user adoption, perhaps in part because certain privacy questions still remain unanswered. ■

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<sup>45</sup> Cho, Hyunghoon, Ippolito, Daphne, and Yun, William Yu. 2020. “Contact Tracing Mobile Apps for COVID-19: Privacy Considerations and Related Trade-offs.” Cornell University, 30 March. (<https://arxiv.org/abs/2003.11511>).

As mobile digital contact tracing applications were hastily deployed around the world in an effort to control the spread of COVID-19, a lot of questions have arisen regarding their effectiveness. Case studies from India and Singapore demonstrate that these applications have yet to live up to their promise. Both India and Singapore have failed to reach the adoption rates that experts agree are necessary for these interventions to be effective. Contact tracing applications may still play a role in a government's COVID-19 mitigation strategy, but it would only be as one part of a broader healthcare response. Based on the findings laid out in this paper, the contact tracing solutions deployed in both India and Singapore have aided the public health effort by uncovering proximity contacts more effectively than would have been possible in their absence. The question remains, however, as to whether the opportunity cost of investing in digital contact tracing, and away from other public health resources has been worth it.

Regardless of efficacy, at a minimum, policymakers have a duty not to violate their users' privacy. Given that the fight against COVID-19 is a public health emergency, individual rights need to be balanced with the greater good. Because contact tracing requires identifying infected people, tracing their contacts and quarantining them, individuals are having to grow accustomed to greater invasions of privacy than they would accept in normal times. The willingness of individuals to surrender personal data depends on what they receive in return. Since there is no assurance that downloading a contact tracing solution aids the public health effort, they should only give up the minimum amount of data necessary to be able to help authorities conduct contact tracing. It is imperative for there to be transparency and accountability regarding these intrusions, or else policymakers are implicitly paving the way for potential abuses. If the necessary safeguards are not implemented, increased adoption of contact tracing technology will fail to materialise, as will its potential to help abet the disease's spread. Ultimately, all public health initiatives rely on trust between a government and the people it serves. Establishing and maintaining that trust may be the difference between a successful contact tracing solution and a futile one. ■

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([https://ethics.harvard.edu/files/center-for-ethics/files/white\\_paper\\_5\\_outpacing\\_the\\_virus\\_final.pdf](https://ethics.harvard.edu/files/center-for-ethics/files/white_paper_5_outpacing_the_virus_final.pdf)).

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(<https://www.research.ox.ac.uk/Article/2020-04-16-digital-contact-tracing-can-slow-or-even-stop-coronavirus-transmission-and-ease-us-out-of-lockdown>).

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# **THE BIO-CYBER NORM: EMERGENCE AND OPERATIONALISATION**

Sarjeet Singh  
Sharngan Aravindakshan

# KEY TAKEAWAYS

- Recent times have shown nations' healthcare systems to be among the systems most essential yet also most vulnerable to external threats such as cyber-attacks and cybercrimes. Reports suggest that cyber-attacks on healthcare systems are increasingly sponsored or directed by states.
- It is becoming clear that healthcare facilities cannot and should not bear the burden of ensuring their cybersecurity on their own.
- Ongoing global cyber-norms-making processes are cognisant of this problem. Under the aegis of the United Nations Open-Ended Working Group on the use of ICTs in the context of international security (OEWG), several leading states, including Australia, France, Germany, Japan, and Switzerland, have already expressed concern over the steady rise in the targeting of medical facilities in cyberspace.
- Within the OEWG, the International Committee of the Red Cross has proposed a norm for cyberspace that would prohibit states from conducting or knowingly supporting ICT activities that target medical services and facilities. States including the Czech Republic, the Netherlands and South Korea have already declared their support for adopting such a norm.
- Operationalizing this norm in India will require:
  - Articulating a National Cyber Security Strategy;
  - Articulating a Sector-Specific Cybersecurity Strategy for the Healthcare Industry;
  - Ensuring Last-Mile Cybersecurity for Healthcare.



The ongoing Covid-19 pandemic has brought the readiness and security systems of medical infrastructure in Asia into sharp focus. Increasing reliance on digital systems, spurred in recent times by Asian countries investing heavily in their digital economies, has served to make healthcare infrastructure viable and easy targets for malicious cyber-actors, which can have dangerous consequences.

Hospitals and medical facilities are repositories of valuable information, including sensitive medical data, credit card details and insurance information, apart from typically personally identifiable information such as names, addresses, age, sex and so on. Stored in the form of electronic health records (“EHRs”), they are often the most lucrative information for hackers, with their worth estimated at around hundreds or even thousands of dollars.<sup>1</sup> Medical personnel depend on carefully accumulated data in EHRs, which includes patient medical history, diagnoses and so on, to make informed choices regarding patient well-being. Additionally, the availability of healthcare facilities today is often very much dependent on technology. Whether they are critical services, such as those ensuring continuity of care, medical devices and surgery equipment, or administrative services, such as systems dealing with work orders, billing and appointments, any disruption to these services can have a devastating effect on healthcare and consequently on patients’ lives.<sup>2</sup> Consider, for instance, a doctor conducting a life-saving surgery when a cyber-attack hits his hospital’s networks, rendering systems inoperable.

Until very recently there were no recorded deaths that occurred on account of malicious cyber activities; however, this changed in September 2020 when a woman died as a result of a ransomware attack on a German hospital.<sup>3</sup> Moreover, several other countries are already experiencing a taste of the other severe consequences of malicious cyber activities. This includes the loss of patients’ personal health data, as with the cyber-attack on SingHealth

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1 Yao, Mariya. 2017. “Your Electronic Medical Records Could Be Worth \$1000 To Hackers.” *Forbes*, 18 April. (<https://www.forbes.com/sites/mariyayao/2017/04/14/your-electronic-medical-records-can-be-worth-1000-to-hackers/>).

2 Le Bris, Aurore and Walid El Asri. 2017. “State of Cybersecurity & Cyber Threats in Healthcare Organizations – Applied Cybersecurity Strategy for Managers.” *Essec Business School Strategic Report*. (<http://blogs.harvard.edu/cybersecurity/files/2017/01/risks-and-threats-health-care-strategic-report.pdf>).

3 Staff Reporter. 2020. “German Hospital Hacked, Patient Taken to Another City Dies.” *Associated Press*, 17 September. (<https://apnews.com/cf8f8ee1adcec69bc864f2c4308c94>).

in Singapore in 2018<sup>4</sup>, which led to the loss of more than a million patients' data, and the shutdown of hospital systems, leading to cancellation of surgeries and even transfer of patients to other hospitals, as happened with the attack on Brno University Hospital in the Czech Republic in 2020.<sup>5</sup> The attack on Brno University Hospital was particularly pernicious since, as a major testing site for Covid-19 in the Czech Republic, the hospital was playing a crucial role in the government's fight against the pandemic. Importantly, not all of these cyber-attacks are believed to be conducted by opportunist hackers or criminal syndicates, with suspicions being cast on some states possibly taking advantage of lax and diffused focus over cybersecurity during the pandemic.<sup>6</sup>

These incidents have jolted states awake to the vulnerability of their medical infrastructure, both public and private, to such threats, prompting them to raise the issue of ensuring the safety and security of such medical infrastructure in the OEWG an international platform under the aegis of the United Nations concerned with cyber-norms building and cybersecurity. Following the lead of the International Committee of the Red Cross ("ICRC"), states have begun discussing the acceptance of a new norm – *"States should not conduct or knowingly support ICT activity that would harm medical services or medical facilities, and should take measures to protect medical services from harm"*<sup>7</sup> ("**Bio-Cyber Norm**"). This is an extension of the

existing obligation of due diligence in international law, a principle that requires states to ensure their territories are not used to harm other states, which is itself an offshoot of the principle of sovereign equality of states. Importantly, it posits both a negative and a positive obligation on states –

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- 4 Kwang, Kevin. 2018. "Singapore Health System Hit by 'Most Serious Breach of Personal Data' in Cyberattack; PM Lee's Data Targeted." CNA, 18 October. (<https://www.channelnewsasia.com/news/singapore/singhealth-health-system-hit-serious-cyberattack-pm-lee-target-10548318>).
  - 5 Porter, Sophie. 2020. "Cyberattack on Czech Hospital Forces Tech Shutdown during Coronavirus Outbreak." *Healthcare IT News*, 3 April. (<https://www.healthcareitnews.com/news/europe/cyberattack-czech-hospital-forces-tech-shutdown-during-coronavirus-outbreak>).
  - 6 Barnes, Julian E., and David E. Sanger. 2020. "Russian Intelligence Agencies Push Disinformation on Pandemic." *The New York Times*, 28 July. (<https://www.nytimes.com/2020/07/28/us/politics/russia-disinformation-coronavirus.html>).
  - 7 United Nations Open-Ended Working Group. 2020. "Comments by the International Committee of the Red Cross on the Initial 'Predraft' of the Report of the OEWG on Developments in the Field of Information and Telecommunications in the Context of International Security." (<https://front.un-arm.org/wp-content/uploads/2020/04/comments-by-icrc-on-initial-pre-draft-report-of-oweg.pdf>).

- 1/ It requires states to not conduct or knowingly support harmful ICT activities against medical facilities, and,
- 2/ It also imposes a positive obligation requiring states to actively take measures to ensure the security of medical services. Identifying this obligation as one that states should bear is also generally congruent with policy-making in cyberspace since it is widely acknowledged now that given its interconnected nature, cybersecurity cannot solely be the burden of any individual entity, industry, or sector. Medical and health infrastructure are no exception to this.

While much has been written on the nature of the threats faced by medical and healthcare facilities and the technical measures these facilities need to undertake to ramp up their cybersecurity, little focus has been given to operationalising this norm from a governmental or macro perspective. This paper attempts to trace the evolution of the Bio-Cyber Norm and seeks to briefly examine a top-down, whole-of-nation approach to operationalising this norm as a due diligence obligation of a state vis-à-vis its medical services and facilities, contextualising it in the Indian scenario. It envisages the cybersecurity of medical services and facilities as something that can only be maintained by the collective efforts of all stakeholders in the medical ecosystem, including both governing authorities and private facilities. The paper concludes with recommendations to policy-makers. ■

# DO NO HARM TO HOSPITALS

Under the law of armed conflict, medical personnel and facilities have traditionally enjoyed a protected status. Article 19 of the Geneva Convention I prohibits parties to a conflict from attacking units of medical services.<sup>8</sup> Article 18 of the Geneva Convention IV mandates that civilian hospitals organised to give care to the wounded and sick may in no circumstances be objects of attack.<sup>9</sup> Article 12 of Additional Protocol I and Article 11 of Additional Protocol II require that medical units shall be respected and protected at all times.<sup>10</sup> Under the Statute of the International Criminal Court, additionally, “[i]ntentionally directing attacks against (...) hospitals and places where the sick and the wounded are collected, provided they are not military objectives” constitutes a war crime in both international and non-international armed conflicts.<sup>11</sup> There is little dispute that the protected status of medical services and personnel/units during armed conflicts is part and parcel of customary international law.<sup>12</sup>

However, as states are coming to realise, there are no corresponding obligations during peacetime. To be clear, a state employing conventional means to destroy, disrupt or even hinder the work of medical facilities or personnel will still likely fall afoul of certain rules of international law that apply regardless of the nature of the target, such as the prohibition on the threat or use of force under Article 2(4) of the United Nations Charter. But the applicability of these rules in the realm of unconventional warfare, such as in cyberspace, is still heavily disputed. Indeed, cyberspace is often referred to as a “grey zone” in international law due to the lack of clarity on the legality of operations conducted in cyberspace. Cyber operations are also a preferred mode for states to achieve strategically beneficial outcomes given that the inherent structure of cyberspace offers anonymity to states, making it extremely difficult to hold them accountable for any internationally wrongful act in cyberspace. Needless to say, these challenges apply equally to fixing responsibility on non-state actors. The result has been a steady rise

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<sup>8</sup> Art. 19, *Geneva Convention on Wounded and Sick in Armed Forces in the Field, 1949* (Geneva Convention I).

<sup>9</sup> Art. 18, *Geneva Convention Relative to Protection of Civilian Persons in Time of War, 1949* (Geneva Convention IV).

<sup>10</sup> Article 12 of *Additional Protocol I to the Geneva Conventions, 1977*; Article 11 of *Additional Protocol II to the Geneva Conventions, 1977*.

<sup>11</sup> Article 8(2)(b)(ix) and (e)(iv) of the *Rome Statute of the International Criminal Court*.

<sup>12</sup> Secretary of Defence. 2016. “Principles Related to the Protection of Medical Care Provided by Impartial Humanitarian Organizations During Armed Conflict.” Washington: Pentagon. (<https://dod.defense.gov/Portals/1/Documents/pubs/Principle-Promulgation-Memo.pdf>).

in state-sponsored or -conducted cyber-attacks in the past decade, with the most insidious being the deliberate attacks on hospitals and medical services engaged in combating the Covid-19 pandemic.

It is no surprise therefore that states are prepared to support a norm uniquely applicable to and aimed at the protection of medical facilities and infrastructure in cyberspace. This emerging cyber norm can in fact be viewed as the result of a gradual evolution of norms in this field. Inter-governmental efforts to understand how to regulate cyberspace from the perspective of international law began with the United Nations Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security (“UN GGE”), first established in 2004. There have been six iterations of the UN GGE since then, with only those since 2010 resulting in any noteworthy outcomes. The 2010 UN GGE recognised the importance of critical infrastructure, emphasising and recommending dialogue between states to “reduce collective risk and protect critical national and international infrastructure”.<sup>13</sup> The 2013 UN GGE then acknowledged, for the first time, the applicability of international law to cyberspace, noting that “[s]tate sovereignty and international norms and principles that flow from sovereignty apply to State conduct of ICT-related activities, and to their jurisdiction over ICT infrastructure within their territory.”<sup>14</sup> Additionally, the report also recorded several voluntary, non-binding norms on a consensus basis. In this vein, the report noted that states “should seek to ensure that their territories are not used by non-State actors for unlawful use of ICTs”.<sup>15</sup> This was subsequently re-affirmed by the 2015 UN GGE report, which besides stating that “[a] State should not conduct or knowingly support ICT activity contrary to its obligations under international law that intentionally damages critical infrastructure or otherwise impairs the use and operation of critical infrastructure to provide services to the public”<sup>16</sup>, also noted the need for states to take “appro-

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<sup>13</sup> United Nations Group of Governmental Experts. 2010. “Report of the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security.” (<https://doi.org/https://undocs.org/A/65/201>).

<sup>14</sup> United Nations Group of Governmental Experts. 2013. “Report of the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security.” (<https://doi.org/https://undocs.org/A/68/98>).

<sup>15</sup> Report of the Group of Governmental Experts 2013, 8.

<sup>16</sup> United Nations Group of Governmental Experts. 2015. “Report of the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security.” (<https://dig.watch/sites/default/files/UN%20GGE%20Report%202015%20%28A-70-174%29.pdf>). Para. 13(f).



priate measures to protect their critical infrastructure from ICT threats".<sup>17</sup> This report was also adopted by the United Nations General Assembly.<sup>18</sup> The stage was thus set for a due diligence norm to emerge in cyberspace.

However, as with most international fora, a contestation of interests and ideologies between states ultimately scuttled any further progress and the 2017 UN GGE concluded without being able to achieve consensus on how to apply the norms agreed upon.<sup>19</sup> This allowed some states to successfully argue for and establish the OEWG as a platform for continuing the discussions on cyber norms.<sup>20</sup> The OEWG has appeal as an alternative to the UN GGE since it has a mandate largely similar to the UN GGE (insofar as it also involves further developing norms and principles for responsible state behaviour in cyberspace), and its egalitarian structure projects a more open, fair and democratic process in dealing with crucial issues in cyberspace,<sup>21</sup> whereas each iteration of the UN GGE was composed of 25 select states with membership often changing from one iteration to another.<sup>22</sup> Pertinently, however, the General Assembly has renewed the mandate of the UN GGE for the period 2019–2021 and its session is currently ongoing, in parallel with the first session of the OEWG.<sup>23</sup>

It was through responses to a Draft Paper issued by the Chair of the OEWG ("Pre-Draft") that many states' attention was drawn to the dangerous trend of malicious cyber-activities against hospitals and other medical facilities. The ICRC, in its comments to the draft paper, drew attention to critical infrastructure enabling the delivery of essential services to the population, and, in this vein, stressed the need to explicitly mention the healthcare sector in

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<sup>17</sup> *Report of the Group of Governmental Experts 2015*, para. 13(g).

<sup>18</sup> United Nations General Assembly. 2015. "Developments in the Field of Information and Telecommunications in the Context of International Security." A/RES/70/237, 23 December. (<https://undocs.org/A/RES/70/237>).

<sup>19</sup> D'Incau, Fosca and Stefan Soesanto. 2017. "The UN GGE Is Dead: Time to Fall Forward." *European Council on Foreign Relations*, 15 August. ([https://www.ecfr.eu/article/commentary\\_time\\_to\\_fall\\_forward\\_on\\_cyber\\_governance](https://www.ecfr.eu/article/commentary_time_to_fall_forward_on_cyber_governance)).

<sup>20</sup> De Tomas Colatin, Samuele. 2018. "A Surprising Turn of Events: UN Creates Two Working Groups on Cyberspace." *NATO CCDCOE*. (<https://ccdcoe.org/incyber-articles/a-surprising-turn-of-events-un-creates-two-working-groups-on-cyberspace/>).

<sup>21</sup> Cristiano, Fabio. 2020. "The Road Toward Agonistic Pluralism for International Cyber Norms." *Council on Foreign Relations*, 6 July. (<https://www.cfr.org/blog/road-toward-agonistic-pluralism-international-cyber-norms>).

<sup>22</sup> Dig.watch. 2020. "UN GGE and OEWG." (<https://dig.watch/processes/un-gge>).

<sup>23</sup> Dig.watch. 2020. "UN GGE and OEWG."

the report as being particularly vulnerable to cyber-attacks.<sup>24</sup> It then adapted the existing due diligence norm to propose a new one – a norm prohibiting states from harming as well as requiring them to ensure the safety and security of medical services and facilities.<sup>25</sup> A number of states, in their own comments to the OEWG draft, also decried and denounced the targeting of these facilities in recent times.<sup>26</sup> This has been followed up by a joint proposal from Australia, the Czech Republic, Estonia, Japan, Kazakhstan and the United States of America for including specific text in the OEWG draft that highlighted reports of “attempted and actual damage or impairment by cyber means of the use and operation of critical infrastructure providing services to the public (including healthcare/medical services, facilities and systems, and crisis response organisations) during the Covid-19 global pandemic.”<sup>27</sup> The joint proposal moved for the acceptance of slightly different norms that are also reflected in the 2015 GGE Report –

*☐☐ ...A State should not conduct or knowingly support ICT activity contrary to its obligations under international law that intentionally damages critical infrastructure or otherwise impairs the use and operation of critical infrastructure to provide services to the public.*

*...States should take appropriate measures to protect their critical infrastructure from ICT threats, taking into account General Assembly resolution 58/199 on the creation of a global culture of cybersecurity and the protection of critical infrastructures, and other relevant resolutions.”<sup>28</sup>*

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<sup>24</sup> United Nations Open-Ended Working Group. 2020. “Comments by the International Committee of the Red Cross on the Initial ‘Predraft’ of the Report of the OEWG on Developments in the Field of Information and Telecommunications in the Context of International Security.” (<https://front.un-arm.org/wp-content/uploads/2020/04/comments-by-icrc-on-initial-pre-draft-report-of-oewg.pdf>).

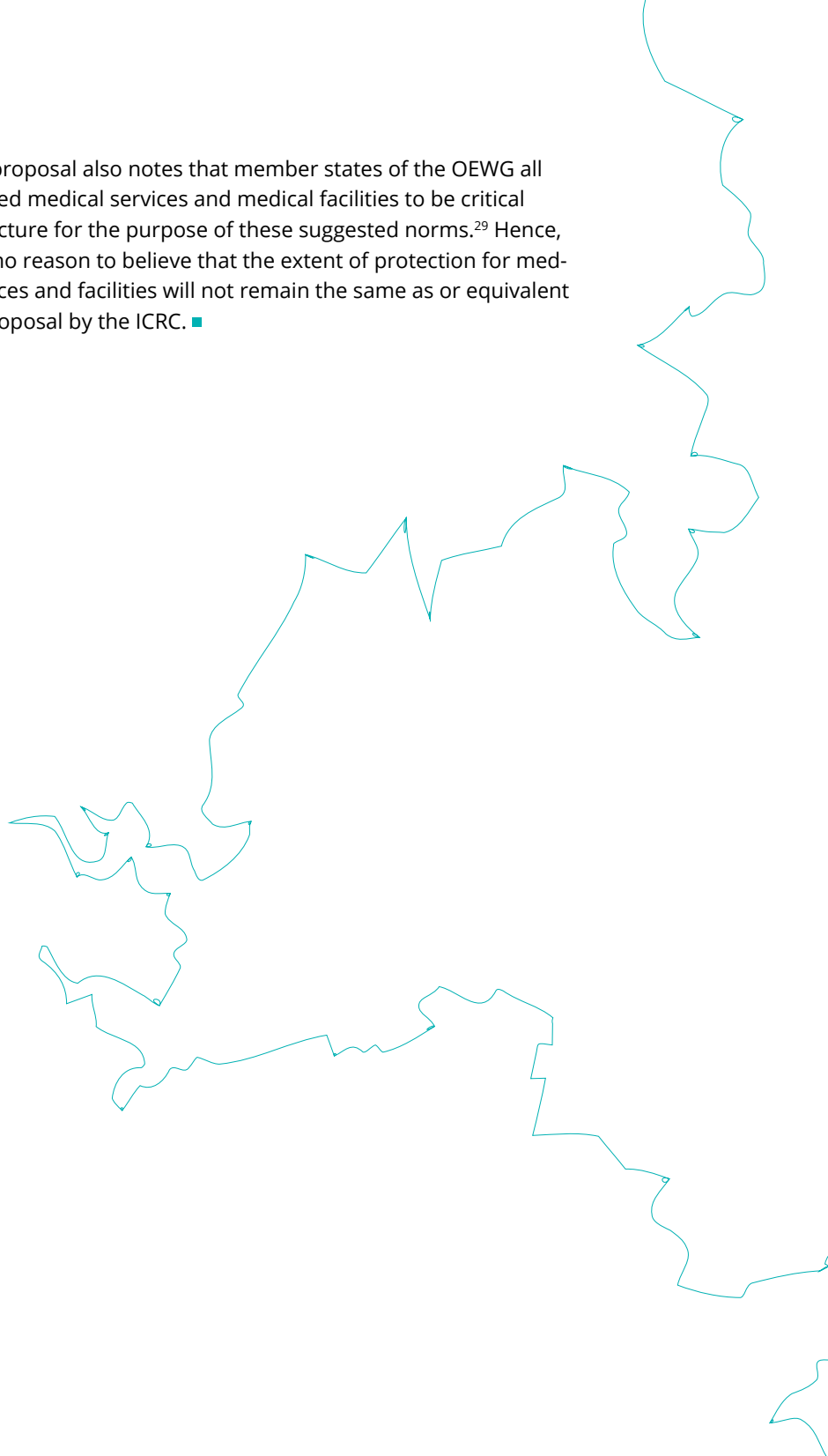
<sup>25</sup> United Nations Open-Ended Working Group. 2020. “Comments by the International Committee of the Red Cross.”

<sup>26</sup> United Nations Open-Ended Working Group. 2020. “Comments Submitted by the Czech Republic in Reaction to the Initial ‘Pre-Draft’ Report of the Open-Ended Working Group on Developments in the Field of Information and Telecommunications in the Context of International Security.” (<https://front.un-arm.org/wp-content/uploads/2020/04/czech-republic-oewg-pre-draft-suggestions.pdf>); United Nations Open-Ended Working Group. 2020. “France’s Response to the Pre-Draft Report from the OEWG Chair.” (<https://front.un-arm.org/wp-content/uploads/2020/04/contribution-fr-oewg-eng-vf.pdf>); United Nations Open-Ended Working Group. 2020. “The Kingdom of the Netherlands’ Response to the Pre-Draft Report Of the OEWG.” (<https://front.un-arm.org/wp-content/uploads/2020/04/kingdom-of-the-netherlands-response-pre-draft-oewg.pdf>).

<sup>27</sup> United Nations Open-Ended Working Group. 2020. “Joint Proposal from a Number of Member States on the Protection of Health Infrastructure.” (<https://front.un-arm.org/wp-content/uploads/2020/05/final-joint-oewg-proposal-protection-of-health-infrastructure.pdf>).

<sup>28</sup> Report of the Group of Governmental Experts 2015, para. 13(f) and 13(g).

But the proposal also notes that member states of the OEWG all considered medical services and medical facilities to be critical infrastructure for the purpose of these suggested norms.<sup>29</sup> Hence, there is no reason to believe that the extent of protection for medical services and facilities will not remain the same as or equivalent to the proposal by the ICRC. ■



Asian countries, including those in the Indian subcontinent, face a somewhat paradoxical problem. Most of their populations (barring countries like Singapore, Malaysia and South Korea), have a substantial digital divide that their governments are rigorously attempting to bridge with the goal of harnessing the full benefits of a digital economy.<sup>30</sup> At the same time, this impetus to the digital revolution in these countries also means that as more and more sectors digitise and take their operations online, they open themselves up to cyber threats. The interconnected nature of cyberspace means that a vulnerability or weakness in one sector automatically renders other sectors also vulnerable to exploitation.<sup>31</sup> This makes cybersecurity in any given sector a national priority and an area that the government should take the lead in, through laying down regulations, or investments, or any of a host of other policy measures available to them.<sup>32</sup> At the same time, a heavily networked cyber environment also means that other stakeholders, such as private players, will also need to ensure they play an equal role to shore up, maintain and safeguard cybersecurity. These realities mean that the burden of ensuring cybersecurity for a given sector has to be a shared responsibility between the government and other stakeholders, which, in other words, calls for a multi-stakeholder approach. This is especially so in the medical and healthcare industry, which while currently not regulated in terms of cybersecurity, requires specialised standards- or regulations-setting, necessitating the cooperation and co-option of expertise from the medical industry.

From a macro-perspective, implementing the Bio-Cyber Norm *inter alia* requires action in three key areas:

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<sup>30</sup> ASEAN. 2010. “2010 Master Plan on ASEAN Connectivity: One Vision, One Identity, One Community.” (<https://cil.nus.edu.sg/wp-content/uploads/formidable/18/2010-Master-Plan-on-ASEAN-Connectivity.pdf>).

<sup>31</sup> United Nations Counter-Terrorism Centre. 2018. “The Protection of Critical Infrastructures Against Terrorist Attacks: Compendium of Good Practices.” ([https://www.un.org/sc/ctc/wp-content/uploads/2019/01/Compendium\\_of\\_Good\\_Practices\\_Compressed.pdf](https://www.un.org/sc/ctc/wp-content/uploads/2019/01/Compendium_of_Good_Practices_Compressed.pdf)).

<sup>32</sup> NATO Cooperative Cyber Defence Centre for Excellence. 2013. “National Cyber Security Strategy Guidelines.” ([https://ccdcoe.org/uploads/2018/10/NCSS-Guidelines\\_2013.pdf](https://ccdcoe.org/uploads/2018/10/NCSS-Guidelines_2013.pdf)).

## 1. Articulating a National Cyber Security Strategy

The cyber-attacks on hospitals and healthcare facilities cannot be responded to or dealt with solely on an individual or case-to-case basis. Weak healthcare cybersecurity is also symptomatic of problematic policy priorities, such as lack of regulations, inadequate incentivisation, and so on. Additionally, cybersecurity policy goals for the healthcare industry (both public and private) should ideally be congruent with measures in other sectors, given that its major units, like hospitals, are themselves highly dependent on other services such as power, energy and transportation. In any case, no matter the sector, a well-functioning critical information infrastructure ecosystem requires policy-makers to address cybersecurity on a national level.<sup>33</sup> A national cybersecurity strategy provides guidance to policy-makers and other stakeholders regarding a nation's cybersecurity policy priorities. A properly articulated national cybersecurity strategy (i) enables government departments to identify strategic objectives, (ii) translates the policy-maker's vision into coherent and implementable policies, (iii) pinpoints the resources to fulfil the strategic objectives and specifies how these resources are to be used; (iv) clarifies how the nation might act in international affairs and within the context of relevant international organisations; and (v) states how it is to be linked to other, related strategies.<sup>34</sup> A national strategy for cybersecurity signals to relevant stakeholders what macro-objectives the government plans to achieve for national cybersecurity, offering some predictability, which in turn allows stakeholders to align their own courses of action with governmental objectives. These strategies also usually include, or are accompanied by, the clear identification of governmental agencies or regulators responsible for implementing the policies identified.

Many, if not most, countries in Asia, including members of significant groups like ASEAN, have neither developed nor implemented comprehensive national cybersecurity strategies. While India has already articulated a cybersecurity strategy previously in 2013, it was less a comprehensive cybersecurity strategy than a policy

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<sup>33</sup> "National Cyber Security Strategy Guidelines" 7.

<sup>34</sup> "National Cyber Security Strategy Guidelines" 7.

document identifying some goals for cybersecurity<sup>35</sup> and is also largely outdated. On the positive side, India is currently in the process of articulating an updated, fully comprehensive national cybersecurity strategy, although it is unclear when it will be released.

## 2. Articulating a Sector-Specific Cybersecurity Strategy for the Healthcare Industry

While a *national* cybersecurity strategy identifies goals for a nation's cybersecurity system and identifies a roadmap to achieve those goals, *sectoral* cybersecurity strategies do the same for specific sectors. Identifying key sectors vital to ensuring the cyber health of a nation is also important. This is already being done in most nations in the form of identifying "critical information infrastructure" ("CII"). Notably, a General Assembly resolution from as far back as 2004 called upon states to take action to identify and protect their CII.<sup>36</sup> India's nodal agency for protecting CII is the National Critical Information Infrastructure Protection Centre ("NCIIPC").<sup>37</sup> Under Section 70 of India's Information Technology Act, 2000, CII is defined as a "computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety".<sup>38</sup> However, the CII identified in India include only the defence, banking and financial, ICT and telecommunications, transportation, power and energy sectors, the Ministries of Home Affairs, External Affairs and Heavy Industries as well as the Niti Aayog (previously known as the Planning Commission).<sup>39</sup> The medical or healthcare sector is currently conspicuously absent from this classification.

Aside from this, preparing a sectoral cybersecurity strategy for the healthcare sector will also, needless to say, require a thorough understanding of the unique attributes of this sector

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<sup>35</sup> Centre for Communication Governance. 2020. "Comments to the National Security Council Secretariat on the National Cyber Security Strategy 2020." New Delhi, National Law University Delhi.

<sup>36</sup> United Nations General Assembly. 2013. "Creation of a Global Culture of Cybersecurity and the Protection of Critical Information Infrastructures." A/RES/58/199 2004, 23 December 2013. (<https://digitallibrary.un.org/record/509571?ln=en>).

<sup>37</sup> Government of India, Department of Electronics and Information Technology. 2014. "Notification." (<https://www.meity.gov.in/>).

<sup>38</sup> Section 70, Information Technology Act, 2000.

<sup>39</sup> Government of India, National Critical Information Infrastructure Protection Centre. 2013. "Guidelines for the Protection of Critical Information Infrastructure, Version 1.0." (<https://www.cii.in/uploads/1Guidelines%20for%20Protection%20of%20NCII-CoverPage599.pdf>).

as well as the motivations of malicious actors targeting healthcare facilities. Sectoral risk profiles that quantitatively assess the cyber threat landscape as well as current levels of sectoral cybersecurity maturity will also prove beneficial since they can serve as a reference for all organisations in the sector, instead of each organisation separately undertaking this exercise and expending resources.<sup>40</sup>

Designating the medical or healthcare sector as critical information infrastructure will go a long way towards ensuring their cyber resilience and the continuity of these essential services. The NCIIPC in India, for instance, is responsible for taking “all necessary measures to facilitate protection of Critical Information Infrastructure, from unauthorised access, modification, use, disclosure, disruption, incapacitation or destruction, through coherent coordination, synergy and raising information security awareness among all stakeholders.”<sup>41</sup> It periodically lays down guidelines for the protection of critical information infrastructure and its guiding principles include adopting risk management approaches, ensuring compliance with its guidelines, advisories and alerts, and facilitating sharing of information on emerging threats, cyber-attacks, vulnerabilities, etc. with CII.<sup>42</sup> If the healthcare sector is classified as CII, it would also come under the ambit of the NCIIPC, which, through consultations with the relevant stakeholders, could begin to standardise cybersecurity measures in the sector through regulations uniquely tailored to healthcare. Additionally, it is also part of the NCIIPC’s mandate to establish sectoral Computer Emergency Response Teams or CERTs to deal with critical sector-specific issues – in this regard, a Med-CERT with the relevant expertise could do much to alleviate the healthcare sector’s cybersecurity woes as a first responder. Currently, the Indian Computer Emergency Response Team or CERT-In is operational, with the stated objectives of securing the Indian cyberspace, preventing and responding to cyber-attacks against the Indian cyberspace and enhancing cybersecurity awareness among common citizens.

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<sup>40</sup> International Telecommunication Union. 2018. “Guide to Developing a National Cybersecurity Strategy – Strategic Engagement in Cybersecurity.” ([https://www.itu.int/pub/D-STR-CYB\\_GUIDE.01-2018](https://www.itu.int/pub/D-STR-CYB_GUIDE.01-2018)).

<sup>41</sup> Datta, Saikat. 2016. “Defending India’s Critical Information Infrastructure – The Development and Role of the National Critical Information Infrastructure Protection Centre (NCIIPC).” *Internet Democracy Project 2*. (<https://internetdemocracy.in/wp-content/uploads/2016/03/Saikat-Datta-Internet-Democracy-Project-Defending-Indias-CII.pdf>).

<sup>42</sup> Government of India, National Critical Information Infrastructure Protection Centre. 2015. “Guidelines for the Protection of Critical Information Infrastructure, Version 2.0.” ([https://nciipc.gov.in/documents/NCIIPC\\_Guidelines\\_V2.pdf](https://nciipc.gov.in/documents/NCIIPC_Guidelines_V2.pdf)).

A Med-CERT would greatly streamline CERT-In's abilities to secure medical and healthcare facilities.

Sectoral focus for healthcare is vital to operationalising the Bio-Cyber Norm. This is all the more so given that the Indian government is set to digitise health-related information on a massive scale. The government's National Health Stack ("NHS") project is intended to be a digital infrastructure built with the aim of making the health insurance system more transparent and robust.<sup>43</sup> Among other things, it is proposed to consist of an "electronic national health registry", intended to serve as a single source for health data in the nation, with access to hospitals, labs, insurance companies, etc.<sup>44</sup> The National e-Health Policy released in 2017 also discusses leveraging an "integrated health information system" that "serves the needs of all stake-holders and improves efficiency, transparency, and citizen experience."<sup>45</sup> Both the National e-Health Policy<sup>46</sup> as well as the National Health Stack<sup>47</sup> suggest using the national identification number or "Aadhaar Number" for identification purposes. The implications of a cybersecurity breach in such envisaged systems would be massive. Separately, on the bright side, India is also on the cusp of passing the Personal Data Protection Bill 2019, under which medical or health-related information will fall under the "sensitive personal data" category, thereby commanding a higher level of protection as opposed to other personal data such as names, addresses and so on.<sup>48</sup>

This regulation will ensure that healthcare facilities will be held accountable if they do not ensure the implementation of adequate safeguards to secure personal and medical data. While the focus of the legislation is not on cybersecurity, it will certainly assist in bringing relevant stakeholders up to standard in some respects, with regard to personal data at least.

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<sup>43</sup> Ghosh, Abantika. 2019. "Stack and Blueprint – Building Digital Infrastructure for National Health Database." *The Indian Express*, 5 November. (<https://indianexpress.com/article/explained/explained-stack-and-blueprint-building-digital-infrastructure-for-national-health-database-6103245/>).

<sup>44</sup> Niti Aayog, Government of India. 2020. "National Health Stack- Strategy and Approach." ([https://niti.gov.in/writereaddata/files/document\\_publication/NHS-Strategy-and-Approach-Documents-for-consultation.pdf](https://niti.gov.in/writereaddata/files/document_publication/NHS-Strategy-and-Approach-Documents-for-consultation.pdf)).

<sup>45</sup> Ministry of Health and Family Welfare, Government of India. 2017. "National Health Policy 2017." ([https://www.nhp.gov.in/nhpfiles/national\\_health\\_policy\\_2017.pdf](https://www.nhp.gov.in/nhpfiles/national_health_policy_2017.pdf)).

<sup>46</sup> Ministry of Health and Family Welfare. 2017. "National Health Policy 2017."

<sup>47</sup> Niti Aayog. 2020. "National Health Stack- Strategy and Approach."

<sup>48</sup> Clause 2(36), Personal Data Protection Bill 2019; Clause 33, Personal Data Protection Bill 2019; Clause 34 Personal Data Protection Bill 2019.



But these disparate measures need to come together in the form of a coherent and cogent policy that, while promoting the harnessing of the full benefits of healthcare technology, ensures adequate safety and security of both the data and services involved.

### 3. Ensuring Last-Mile Cybersecurity for Healthcare

A cybersecurity ecosystem is only as strong as its weakest link. Hence, although it is essential for the government to implement policy measures, including regulations, it is possibly even more important for healthcare facilities and stakeholders to do their bit to support robust cybersecurity. From an organisational perspective, hospitals will need to allocate sufficient funds to information security. Most hospitals do not have dedicated information or cybersecurity teams, instead delegating the management of cybersecurity issues to their IT teams, which may not have the relevant expertise. Another problem with this is variance in objectives – IT teams often aim to make systems easy-to-use, whereas cybersecurity teams aim to make them secure.<sup>49</sup> This often leads to discarding of cybersecurity objectives in favour of IT ones.<sup>50</sup> Thus, security policies in hospitals need to be carefully drafted in order to make sure adequate attention is paid to cybersecurity. These security policies will necessarily have to assess and identify the appropriate systems/networks/databases that are most important vis-à-vis cybersecurity and threat perspectives. Equally importantly, these policies will have to be strictly enforced.

At the technical level, it is highly important that all hospital staff are properly trained in basic cyber hygiene. This will greatly reduce the potential for security breaches and vulnerabilities. For context, the SingHealth cyber-attack was caused by weak administrator password practices and phishing emails.<sup>51</sup> The cooperation and diligence of all relevant hospital staff will be of utmost importance in order to avoid incidents on account of these failings. Additionally, while evermore interdependent

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<sup>49</sup> *State of Cybersecurity & Cyber Threats in Healthcare Organizations*, 7.

<sup>50</sup> *State of Cybersecurity & Cyber Threats in Healthcare Organizations*, 7.

<sup>51</sup> *Tham, Irene. 2019. "Probe Report on SingHealth Data Breach Points to Basic Failings." The Straits Times, 10 January. (https://www.straitstimes.com/singapore/probe-report-on-singhealth-data-breach-points-to-basic-failings).*

and interoperable technology may be a boon in one sense, it also increases the threat surface and points of access for malicious cyber actors.<sup>52</sup> Hence, hospitals, while adopting the Internet-of-Things (“IoT”) to connect diverse systems, including printers, scanners, medical devices and so on, should be aware of this issue and plan accordingly for networked cybersecurity and cyber resilience while evolving their systems. In the same vein, the medical industry is also heavily reliant on legacy systems that are outdated and no longer supported with security updates. Needless to say, these systems need to be overhauled.

These are some last-mile, but extremely important, measures that individual hospitals and healthcare facilities will need to implement to achieve defensible cybersecurity. ■



Healthcare and medical care facilities arguably perform the most essential of services to society, more so currently than ever. It is a mark of recognition of this important fact that the Bio-Cyber Norm is slowly emerging in the otherwise highly contested arena of cyber norms. That states have become cognisant of and are training their guns on this issue is encouraging, given how disheartening it is that malicious cyber actors are sparing not even these essential services in their quest to use the cyberspace for strategic or monetary advantages. To be sure, there is a long way to go, but with time and concerted effort from states, there is currently every hope that the Bio-Cyber Norm will carve out a much-needed special place of protection for medical and healthcare personnel and facilities in cyberspace. The norm already has multi-stakeholder support in the form of academics and non-state organisations calling for its adoption through the Oxford Statement on the International Law Protections Against Cyber Operations Targeting the Health Care Sector.<sup>53</sup>

However, India and other Asian countries should not wait for any obligation to crystallise in international law before taking action. As the paper has discussed, states should:

- 1/ Articulate a strong and clear national cybersecurity strategy or a comparable document setting out broad policy goals and objectives in accordance with the given country's strengths and weaknesses;
- 2/ Articulate a sector-specific cybersecurity strategy for the medical and healthcare sector, taking into account relevant medical expertise;
- 3/ Require hospitals and other facilities to each draw up a cybersecurity strategy or management plan while simultaneously training staff (both technical and non-technical) in cyber hygiene, thereby ensuring the capability to enforce it.

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<sup>53</sup> Oxford Institute for Ethics, Law and Armed Conflict. 2020. "The Oxford Statement on the International Law Protections Against Cyber Operations Targeting the Health Care Sector." (<https://www.elac.ox.ac.uk/the-oxford-statement-on-the-international-law-protections-against-cyber-operations-targeting-the-hea.>)

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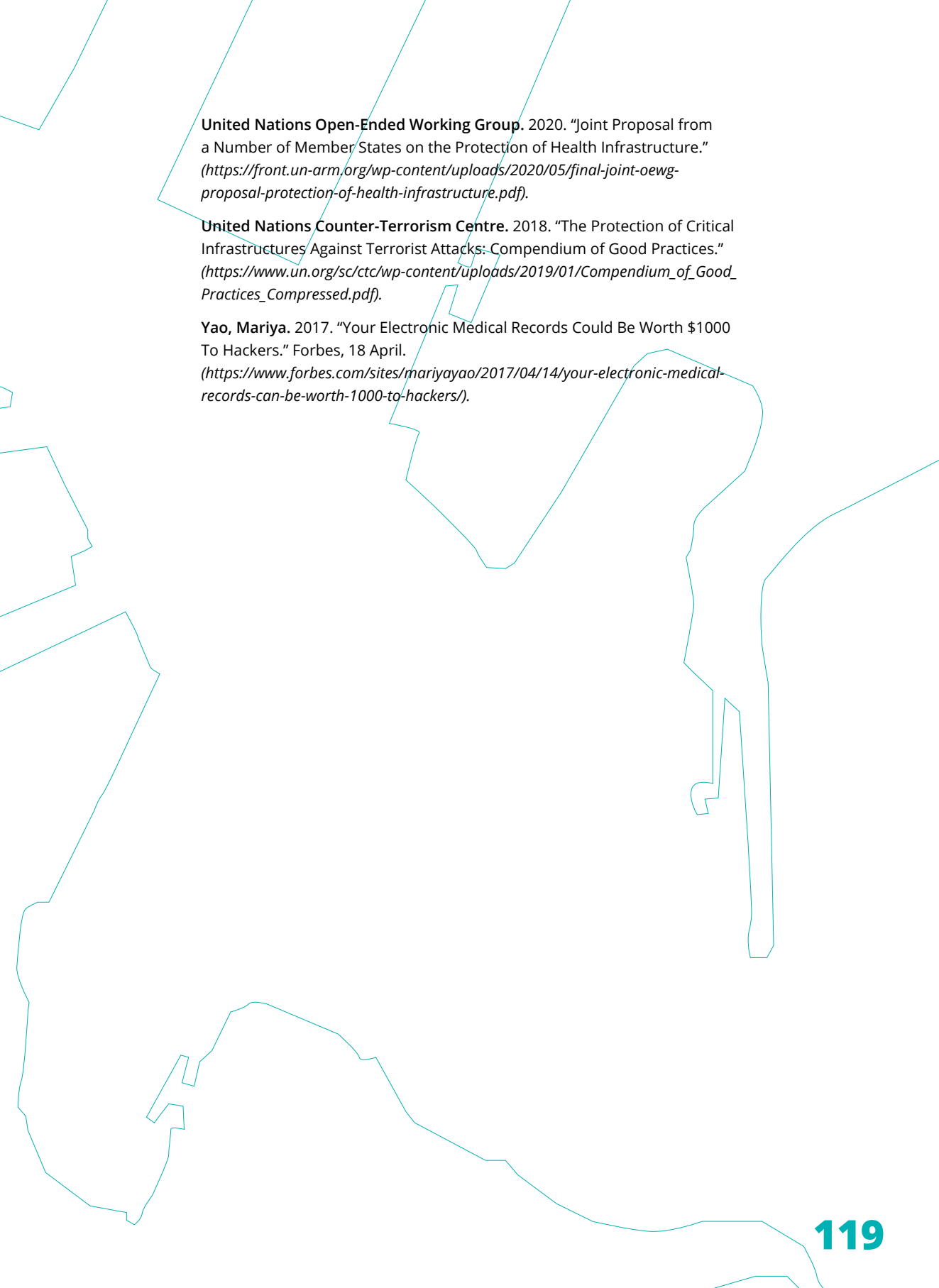
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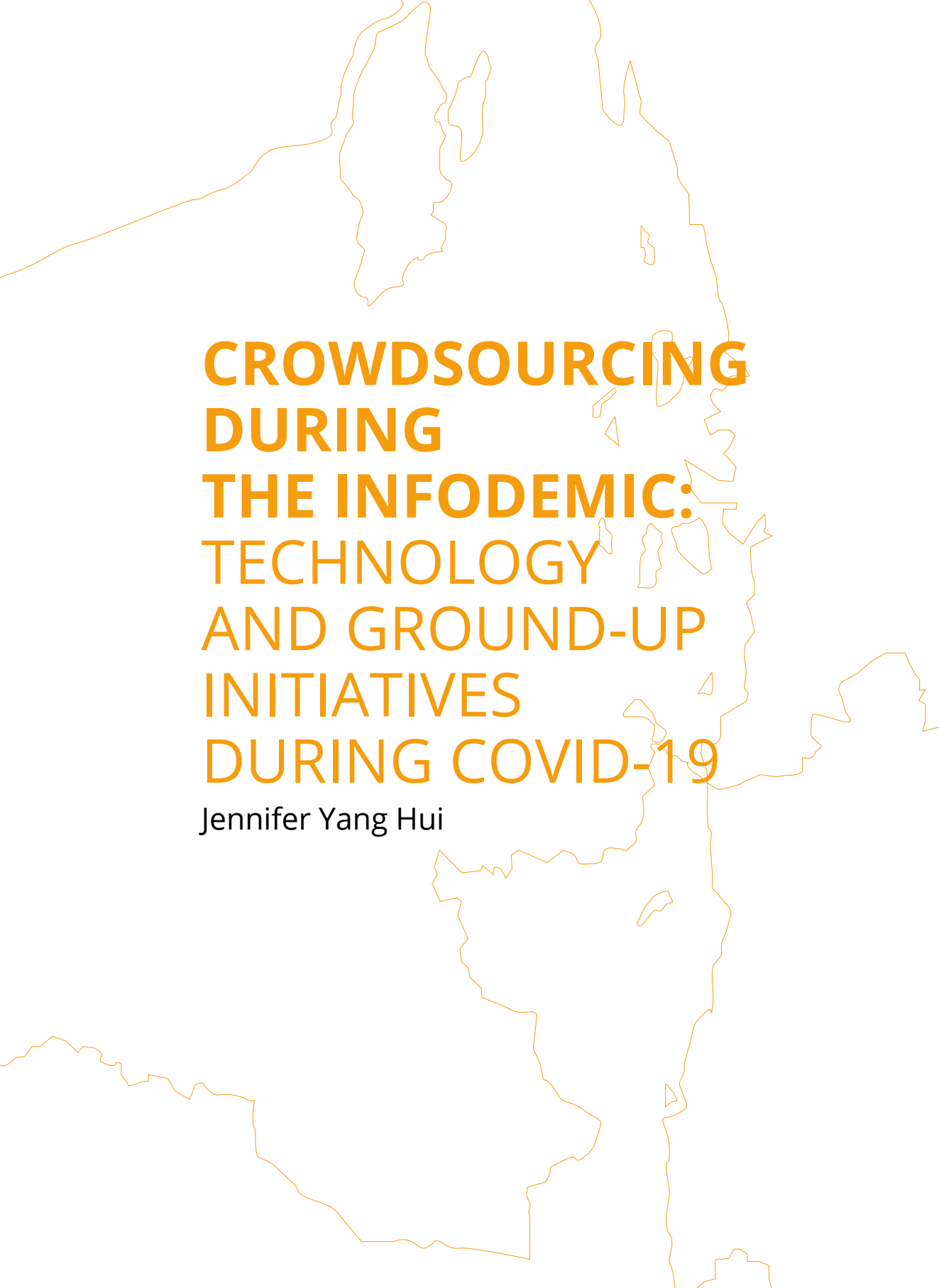




# 2

## **SOCIAL MEDIA GOVERNANCE AND CIVIC ENGAGEMENT**





**CROWDSOURCING  
DURING  
THE INFODEMIC:  
TECHNOLOGY  
AND GROUND-UP  
INITIATIVES  
DURING COVID-19**

Jennifer Yang Hui

# KEY TAKEAWAYS

- Pandemic-related misinformation was a significant challenge in Southeast Asia. Social media platforms like WhatsApp, Facebook and YouTube were rife with false content such as COVID-19-related causes and remedies. Misinformation impacts not only health choices but also economic as well as political and social relations. Given its dire and possibly long-lasting consequences, solutions are urgently needed to tackle the infodemic.
- Grassroots movements have stepped in to address the challenges of the infodemic. These ground-up initiatives crowdsourced for volunteers in a bid to find previously unknown expertise and solutions to misinformation related to the health crisis.
- Volunteers in Singapore, Malaysia and around the world established Corona Tracker.com, a site that consolidates COVID-19-related information from credible news sites and other sources worldwide, providing live global updates, charts, and maps of the virus's spread.
- Volunteers in Indonesia built KawalCovid19 as a one-stop portal for accurate coronavirus-related news and information, aggregating information and data from trusted government and international sources. They also collaborated with the Indonesian Anti-Slander Community (Mafindo), an established anti-hoax movement which crowdsources COVID-19 misinformation online for fact-checking purposes.
- These initiatives possess ingenuity in terms of solutions, demonstrating that the tech community in the Southeast Asian region can mobilise resources quickly in times of crisis to address issues of public concern.
- Going forward policymakers should find ways to assist such ground-up efforts and sustain them beyond crises or emergencies. Policymakers could identify promising ground-up initiatives for funding and scaling-up in preparation for future crises. By encouraging a wide set of actors to collaborate on issue-specific areas such as combating misinformation, they will be better prepared to handle the challenges of the next digital decade.

Technology is an enabler for collective efforts, an aspect often forgotten in the recent discussion on fake news and hate speech. Central to this is the capacity of digital platforms to conduct crowdsourcing, a term first coined in 2006 to refer to the open call for ideas, innovations and solutions from a large number of people whose identity is usually unknown.<sup>1</sup> Tapping on collective intelligence online has been used to find answers to various challenges such as election monitoring and criminal investigation and also in aspects of policy deliberation and formulation. Crowdsourcing combines the efficient management of traditional, top-down processes with the advantages of bottom-up innovation and inventiveness.<sup>2</sup>

During the COVID-19 pandemic, digital technologies have been used creatively to solve coronavirus-related problems in many parts of the world. In Asia, where many countries have been struggling to respond to the impacts of the coronavirus, a variety of crowdsourcing initiatives, from connecting individuals to meet the need for surgical masks<sup>3</sup> and hand sanitisers to inviting citizens to contribute to developing test kits and genetic testing,<sup>4</sup> have been implemented. While governments have been at the forefront of many COVID-19-related crowdsourcing initiatives, the unpredictable and fast-moving nature of the pandemic presented opportunities for ground-up initiatives to fill the gap for solutions.

This paper examines Southeast Asia-based crowdsourcing initiatives focusing on providing accurate and reliable information during the COVID-19-induced “infodemic.” According to the World Health Organisation (WHO), an avalanche of misinformation (information that is untrue, but believed by those disseminating it to be true) has been swiftly spreading through social media channels and other media outlets, presenting a serious threat to public health and social order.

The challenge posed by the infodemic is not about false digital content per se. The media landscape has shifted dramatically since previous health epidemics, such as

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- 1 Howe, Jeff. 2006. “The Rise of Crowdsourcing.” *WIRED*, 1 June. (<https://www.wired.com/2006/06/crowds/>).
  - 2 Brabham, Daren C. 2009. “Crowdsourcing the Public Participation Process for Planning Projects.” *Planning Theory* 8, 3: 242–262.
  - 3 Chiu, Karen. 2020. “This 30,000-person online chat tells you where to buy masks during the coronavirus outbreak.” *South China Morning Post*, 11 February. (<https://www.scmp.com/abacus/culture/article/3050040/30000-person-online-chat-tells-you-where-buy-masks-during>).
  - 4 Indonesia Pasti Bisa. 2020. “Pasti Bisa Project.” (<https://indonesiapastibisa.com/#project>).

the SARS outbreak in 2003, with the increasingly fragmented information ecosystem affecting the reception of information. In many countries, official websites now compete with social media platforms as well as closed private chat apps for attention. Even among credible official and news sites, information is dispersed across various digital locations, creating gaps in knowledge and access to information that aggravate pandemic-related misinformation.

The infodemic challenge was particularly acute in the early part of the COVID-19 outbreak in Southeast Asia, when the authorities were struggling to make sense of the local impacts of the coronavirus. Although governments around the world worked swiftly to contain the impacts of the pandemic and the infodemic, a flood of news and conspiracy theories overwhelmed the already confusing information environment. Misinformation continued to spread unabated on open social media platforms like Facebook and also in closed instant messaging apps like WhatsApp. In Malaysia, for example, the false claim that eating alkaline foods can cure or prevent COVID-19 has been shared widely on YouTube, Facebook and Twitter.<sup>5</sup> Meanwhile, in Indonesia, claims that the medicines that authorities purchased from China were deadly and also harmful to human foetuses made its rounds on many social media platforms.<sup>6</sup> And in Vietnam, a news article falsely reported that black cats were being consumed as cures for COVID-19.<sup>7</sup> Misinformation affects people's health choices, contributes to social stigma, impacts inter-group relations and trust in public institutions, with consequences that may outlast the pandemic.

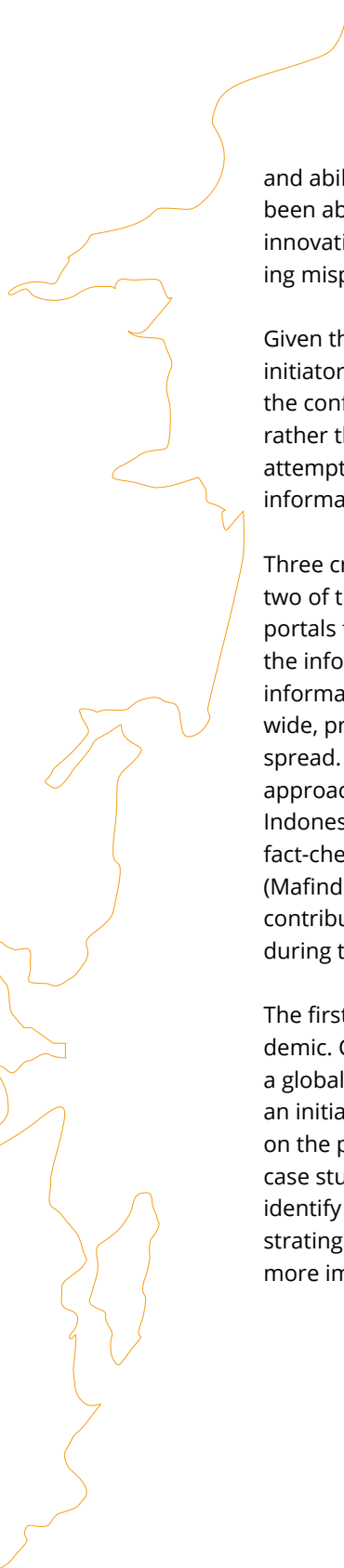
To address the challenges of the infodemic, crowdsourcing initiatives in Southeast Asia, with the support of existing fact-checking initiatives, have focused on creating websites carrying credible news and information related to the pandemic. These ground-up initiatives, with their vast networks

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5 AFP Malaysia. 2020. "Health experts say there is no evidence that eating alkaline foods can prevent or cure COVID-19." AFP Fact-Check, 24 April. (<https://factcheck.afp.com/health-experts-say-there-no-evidence-eating-alkaline-foods-can-prevent-or-cure-covid-19>).

6 Kementerian Komunikasi Dan Informatika Republik Indonesia. 2020. "[DISINFORMASI] Obat Avigan yang Dipesan Jokowi adalah Obat Pembunuh Janin." Kominfo, 24 March. ([https://www.kominfo.go.id/content/detail/25324/disinformasi-obat-avigan-yang-dipesan-jokowi-adalah-obat-pembunuh-janin/o/laporan\\_isu\\_hoaks](https://www.kominfo.go.id/content/detail/25324/disinformasi-obat-avigan-yang-dipesan-jokowi-adalah-obat-pembunuh-janin/o/laporan_isu_hoaks)).

7 Kertscher, Tom. 2020. "Black cats in Vietnam are being killed and consumed as a COVID-19 cure." Politifact, 8 May. (<https://www.politifact.com/factchecks/2020/may/o8/south-west-news-service/Evidence-lacking-that-cats-eaten-as-COVID-19-cure/>).



and ability to quickly mobilise and attract new volunteers, have been able to gather resources with different expertise and to find innovative solutions for providing accurate information and clarifying misperceptions during the pandemic.

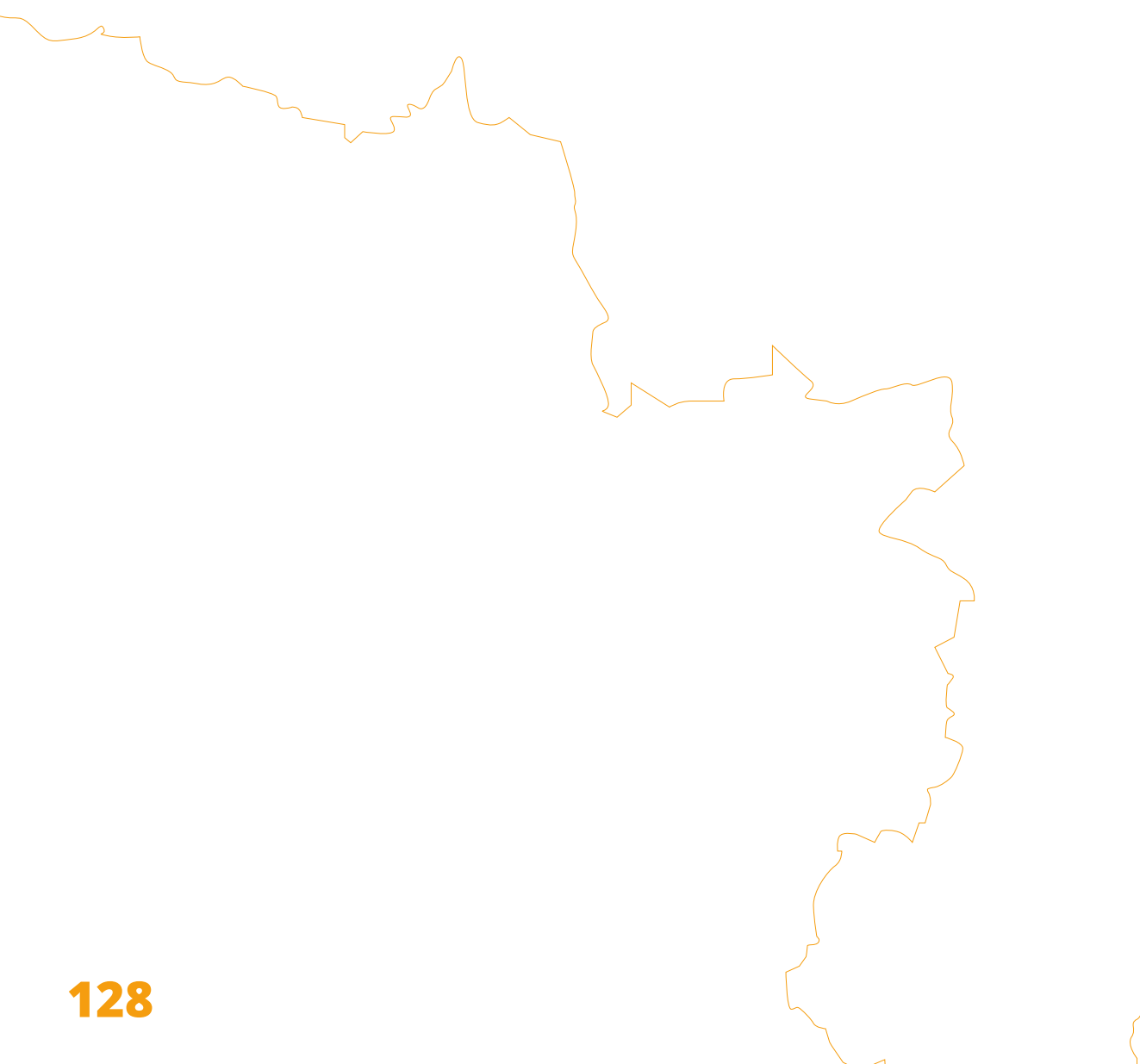
Given the sudden and unexpected nature of the pandemic, the initiators and volunteers felt that the best way to provide clarity in the confusion was to make readily available information clearer rather than find new data. The portals created by these initiatives attempted to steer public attention to verified, official news and information.

Three crowdsourcing case studies will be outlined in this paper. In two of the initiatives, volunteers came together to create one-stop portals for official news and verified information as solutions to the infodemic. CoronaTracker.com consolidates COVID-19-related information from credible news sites and other sources worldwide, providing live global updates, charts, and maps of the virus's spread. KawalCOVID19 is an initiative that focuses on a data-driven approach to providing accurate information on the pandemic in Indonesia. The paper also examines the work of KawalCOVID19's fact-checking partner, the Indonesian Anti-Slander Community (Mafindo), an established anti-hoax movement which crowdsources contributions from netizens to counter COVID-19 misinformation during the pandemic.

The first two initiatives arose organically in response to the pandemic. CoronaTracker.com was established regionally and found a global audience while the second initiative, KawalCOVID19, was an initiative by Indonesians and the Indonesian diaspora, focusing on the pandemic-related challenges in the archipelago. The third case study, Mafindo, has successfully leveraged crowdsourcing to identify false online content in Indonesia for several years, demonstrating a reliability that makes its role during the pandemic even more important.



Through the case studies, policymakers can glean lessons on leveraging cyberactivism that arises during times of crisis to address concerns such as misinformation and even disinformation (information that is false and created and disseminated to fulfil a particular agenda). Ground-up initiatives can become credible voices promoting legitimate narratives to those who might otherwise be susceptible to misinformation/disinformation, trapped within their filter bubbles. ■



Studies on crowdsourcing for emergency responses show that crises are highly emotive situations that galvanise mobilisation for a perceived good cause.<sup>8</sup> Digital platforms and social media help tap the crowd's "cognitive surplus" for mapping out the extent of crises, among other goals, during emergencies.<sup>9</sup> Most studies, however, focus on crowdsourcing efforts conducted by disaster relief agencies. Few examine ground-up initiatives that spring up during disasters. The 2010 Haitian earthquake was the first case where technologically-savvy volunteers crowdsourced information that would aid in the disaster response, generating academic and policy interest in cyberactivism amid disasters.<sup>10</sup> In Russia, ground-up crowdsourcing efforts were notable in tackling wildfires.<sup>11</sup> Web-enabled digital tools have also helped non-state actors organise and even form a distinctive disaster management system during the 2008 Wenchuan, 2010 Yushu and 2013 Lushan earthquakes.<sup>12</sup>

Most crowdsourcing initiatives during times of crisis utilise existing digital platforms like the Ushahidi, an open-source application for election monitoring. Some, however, have created new platforms. This is particularly common in crowdsourcing initiatives during elections. For example, VotoSocial, a crowdsourcing platform launched during the 2013 Honduras elections, allowed users to authenticate scanned digital polling records and transcribe them into a digital system.<sup>13</sup> Similar platforms were launched in different parts of the world. The Contemos Nosotros (Let Us Count) platform was set up in El Salvador.<sup>14</sup> In Southeast

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- 8 Benkler, Yochai. 2011. *The Penguin and the Leviathan: How Cooperation Triumphs Over Self-Interest*. New York: Crown Business; Meier, P. 2013. "Opening Keynote Address." *Crisis Mappers*. (<http://irevolution.net/2013/11/20/opening-keynote-crisismappers-2013/>).
  - 9 Riccardi, Mark T. 2016. "The power of crowdsourcing in disaster response operations." *International Journal of Disaster Risk Reduction* 20: 123–128; Meier, Patrick and Diane Coyle. 2009. "New Technologies in Emergencies and Conflicts." *Unfoundation.org*. ([www.globalproblems-globalsolutions-files.org/pdf/UNF\\_tech/emergency\\_tech\\_report2009/Tech\\_EmergencyTechReport\\_full.pdf](http://www.globalproblems-globalsolutions-files.org/pdf/UNF_tech/emergency_tech_report2009/Tech_EmergencyTechReport_full.pdf)); Ziemke, Jen. 2012. "Crisis Mapping: The Construction of a New Interdisciplinary Field?" *Journal of Map & Geography Libraries: Advances in Geospatial Information, Collections & Archives* 8, 2: 101–17.
  - 10 National Geographic Society. 2012. "How Crisis Mapping Saved Lives in Haiti." *nationalgeographic.org*, 2 July. (<https://blog.nationalgeographic.org/2012/07/02/how-crisis-mapping-saved-lives-in-haiti/>).
  - 11 Asmolov, Gregory. 2015. "Vertical Crowdsourcing in Russia: Balancing Governance of Crowds and State–Citizen Partnership in Emergency Situations." *Policy & Internet* 7, 3: 292–318.
  - 12 Lin, Peng. 2017. "Crisis crowdsourcing and China's civic participation in disaster response: Evidence from earthquake relief." *China Information* 31, 3: 327–348.
  - 13 VotoSocial. 2015. "Only Real Votes Should Decide Elections." (<http://votosocial.github.io/>).
  - 14 Arias, Carlos R., Garcia, Jorge and Alejandro Corpeño. 2015. "Population as Auditor of an Election Process in Honduras: The Case of the VotoSocial Crowdsourcing Platform." *Policy & Internet* 7, 2: 185–202.

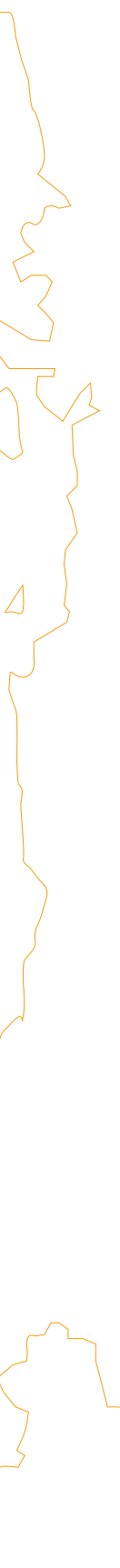
Asia, the KawalPemilu.org (Guard the Election) is a platform that compiled open data published by the Indonesian General Elections Commission (KPU) for cross-checking by volunteers during the 2014 and 2019 elections.<sup>15</sup>

While this study does not focus on the issue of trust in crowdsourcing platforms, it acknowledges that during times of crisis, the issue of trust in information and platforms is more crucial than ever. During the infodemic, the competition between misleading sites and official news sites has become stiffer than ever. Understanding such concerns, the UNESCO, for example, has launched #DontGoViral, an online campaign that crowdsources for creative content that is culturally relevant to mitigating the impact of the infodemic in Africa.

There are indications that some people trust the information on crowdsourced sites like Wikipedia more than official sites. Despite academic concerns over its credibility and reliability of sources, crowdsourced site Wikipedia is still seen as a valid information source, at least for background research for some.<sup>16</sup> A YouGov survey showed that its British respondents see Wikipedia authors as being trustworthy at least “a fair amount of time” compared to professional journalists.<sup>17</sup> One 2011 study even found that Wikipedia articles were comparable to qualified healthcare databases like the Physician Data Query.<sup>18</sup> The concepts of trust and distrust are important to the creators and designers of the digital environment as these influence how users form and sustain relationships online. Trust is likewise important in better understanding people’s relationship to the news.

There is a symbiotic relationship between news sites and online aggregators that compile their news articles. News aggregators are websites that curate other news organisations’ content on their platforms using algorithms, human judgment or a mixture of both. They usually do not produce

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- 15** KawalPemilu. 2019. “Jaga Suara 2019.” (<https://kawalpemilu.org/#pilpres.o>).
  - 16** Knight, Charles and Sam Pryke. 2012. “Wikipedia and the university, a case study.” *Teaching in Higher Education* 17, 6: 649–659.
  - 17** Jordan, William. 2014. “British people trust Wikipedia more than the news.” YouGov, 9 August. (<https://yougov.co.uk/topics/politics/articles-reports/2014/08/09/more-british-people-trust-wikipedia-trust-news>).
  - 18** Wolchover, Natalie. 2011. “How accurate is Wikipedia?” *Live Science*, 24 January. (<https://www.livescience.com/32950-how-accurate-is-wikipedia.html>).



original news content. A study showed that most aggregator users do so to find out new information and are not looking for opinions on issues.<sup>19</sup> Most modern news aggregators like Flipboard, Toutiao and Apple News fulfil the need for a trusted site to assemble and curate relevant information.<sup>20</sup> A 2016 Edelman survey even showed that respondents trusted Google's news aggregator more than the news articles assembled by the search engine.<sup>21</sup> And in an ironic twist, the Oxford Internet Institute launched a junk news aggregator to present Facebook articles from untrustworthy sources to raise awareness of the challenges of misinformation online.<sup>22</sup>

This study does not have access to metrics on the portals' audience reception. It attempts to provide initial insights, however, into how grassroots actors followed the path of major tech companies like Google, which had made government announcements related to COVID-19 more visible on its search results,<sup>23</sup> to direct netizens' attention back to verified official news and information. It is therefore largely supply-focused, an approach that is just as important in better understanding how grassroots movements attempt to resolve issues during the pandemic. ■

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- 19** Lee, Angela M. and Iris Chyi Hsiang. 2015. "The Rise of Online News Aggregators: Consumption and Competition." *International Journal on Media Management* 17, 1: 3–24.
- 20** Arendt, Kelsey. 2019. "The (digital) morning news routine: how mobile news aggregators have evolved beyond the homepage." Parse.ly, 5 September. (<https://blog.parse.ly/post/9001/mobile-news-aggregators-have-evolved-beyond-the-homepage/>).
- 21** Edelman. 2016. "2016 Edelman Trust Barometer." Edelman Research, 16 January. (<https://www.edelman.com/research/2016-edelman-trust-barometer>).
- 22** European Research Council. 2019. "Junk News Aggregator aims to restore Trust in Media and Democracy." *erc*, 8 May. (<https://erc.europa.eu/projects-figures/stories/junk-news-aggregator-aims-restore-trust-media-and-democracy>).
- 23** Moon, Mariella. 2020. "Google Search will highlight government's COVID-19 announcements." *Engadget*, 4 April. (<https://www.engadget.com/2020-04-04-google-covid-19-special-announcements.html>).

# COMBATING THE INFODEMIC BY CROWDSOURCING

The COVID-19 pandemic was a crisis that provided opportunities for ground-up crowdsourcing initiatives to fill the gap in terms of addressing uncertainties. The combination of more spare time and dependence on digital technology during times of uncertainty meant that crowdsourcing initiatives have greater take-up rates than usual.

Table 1 outlines the digital platforms created by the initiatives as well as social media platforms used for volunteer recruitment, public input and publicity:

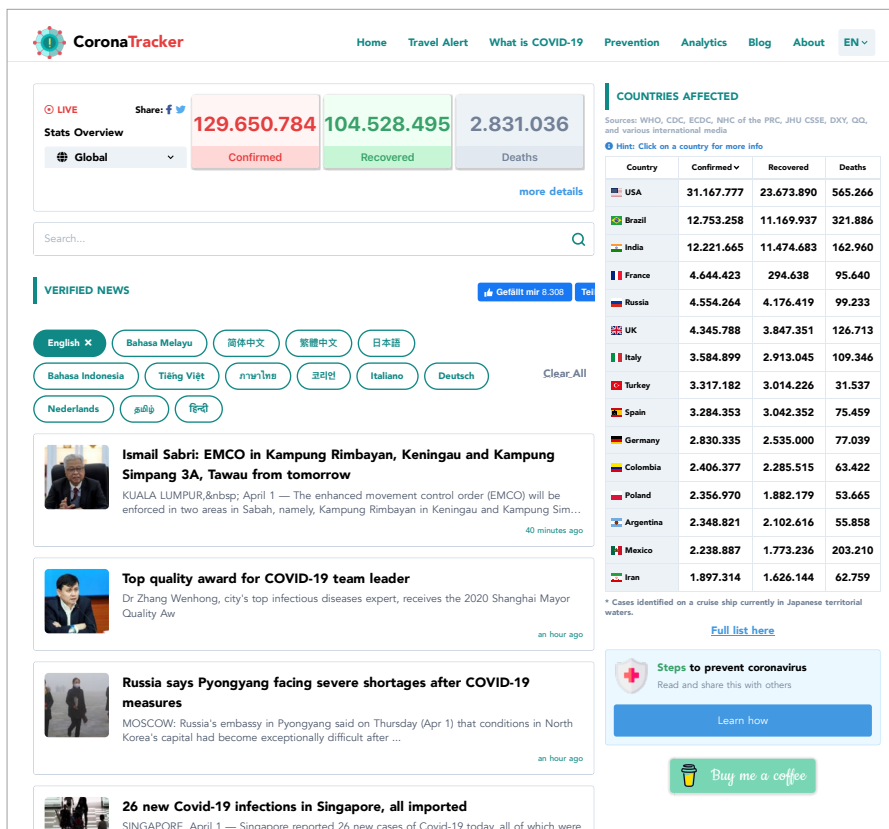
**Table 1: Digital Platforms Used by the Crowdsourcing Initiatives**

Initiatives	Focus	System(s)	Volunteer Recruitment Platform(s)	Public Input	Publicity Channel(s)
Corona-Tracker	Global	News Aggregator	Facebook	Telegram	Website
		Github	LinkedIn		Telegram
Kawal-Covid19	Indonesia	Information Site	Twitter	Facebook Messenger	Website
		Mobile app (Android)			Facebook
Mafindo	Indonesia	Facebook Group	N/A	Email	Facebook
				Online Form	Website
				SMS	
		WhatsApp		WhatsApp (bot operated)	
		Twitter			

CoronaTracker.com was created in late January 2020, when news that the coronavirus was spreading all over the world had many trying to make sense of what was happening. Dr. Lau Cher Han, a Malaysian data scientist, used LinkedIn, Facebook, and Telegram to call for volunteers keen to collaborate to create innovative solutions to the pandemic, and received responses from interested individuals from all over the world.

More than 460 volunteers worldwide went on to build the CoronaTracker portal (Figure 1). Full-stack web developers built the web and mobile applications while user interface (UI)/ user experience (UX) designers helped ensure that the portal was user-friendly and that its information architecture and flow were correct.

Figure 1: CoronaTracker.com Portal



The site displays current global data on the COVID-19 pandemic, such as the total number of confirmed cases, recovery and deaths in countries that are affected by the coronavirus. On its landing page is a news aggregator showing both global and local news in various languages. Web crawlers, written in Python, were used to automatically scrape data and news articles from reliable sources such as the WHO, Johns Hopkins University, and news outlets like the BBC and Reuters. Information on “Travel Alerts”, for example, were sourced from the International Air Transport Association (IATA). The articles were also filtered and fact-checked for accuracy by volunteers. Medical doctors from the field of epidemiology and biology, for example, were enlisted to ensure that health-related articles and information on the site were medically sound.

The portal features the “Buy Me a Coffee” function<sup>24</sup> (the coffee mug icon at the bottom left-hand corner of Figure 1), which enables donations from fans who wish to support their work. CoronaTracker volunteers do not otherwise receive a material incentive for their participation, and are rewarded only by an intrinsic sense of having contributed to a worthy cause.

CoronaTracker.com saw itself as having performed well in the competition for eyeballs. According to its founder, Dr. Lau Cher Han, the retention rate for the portal had been “very high”, with viewers spending an average of two to three minutes per session when browsing the site, and the site’s bounce rate was low (less than 50%) as of July 2020.<sup>25</sup> ■

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<sup>24</sup> Buy Me a Coffee. 2020. (<https://www.buymeacoffee.com/>).

<sup>25</sup> Interview with Dr. Lau Cher Han, Founder of CoronaTracker, 8 July 2020.

As coronavirus-related hoaxes (referring to the general phenomenon of falsehoods) proliferated in Indonesia, a group of volunteers began the task of recruiting technologically savvy individuals to find solutions. KawalCovid19 tweeted a call for volunteers, and was soon attracting almost a thousand volunteers for the initiative.<sup>26</sup>

**Figure 2: KawalCovid19 Portal**



Among other solutions, the KawalCovid19 volunteers built a portal (Figure 2) for accurate coronavirus-related news and information. The initiative believed that a one-stop portal was necessary for providing “information leadership” during the crisis, especially during the confusing period in early March 2020, when Indonesia announced its first two confirmed COVID-19 cases. To ensure that accurate information found more audience, the initiative reached out using social media platforms like Instagram, Twitter and Facebook as well.

<sup>26</sup> Interview with Ainun Najib, Co-Founder of KawalCovid19, 13 July 2020.

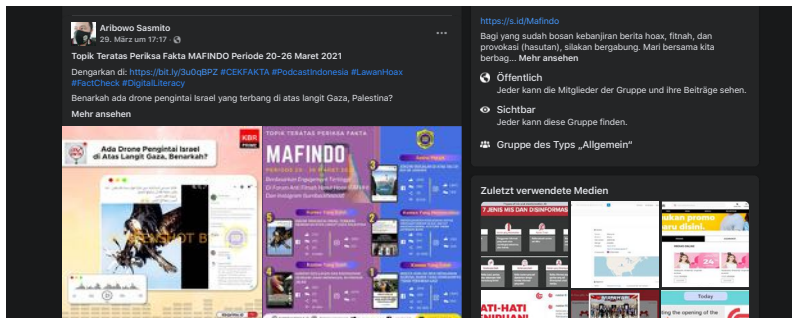


The KawalCovid19 portal shows updated statistics on confirmed cases, the number of those undergoing treatment, the number of those who have recovered and the number of deaths. News explainers on the portal also clarify any pandemic-related misconceptions. To ensure that the information on its site is accurate, KawalCovid19 verifies any information it puts on its portal with experts. Medical practitioners like doctors, virologists and epidemiologists are among those consulted before articles and infographics are put up on the site and shared on the initiative's social media channels. The site provides links to official sources related to the pandemic, such as the WHO website, the UNICEF Indonesia portal and official Indonesian government press releases and websites.

To debunk coronavirus-related hoaxes, KawalCovid19 partnered with an established fact-checking network, the Indonesian Anti-Slander Community (Mafindo). Mafindo gathers misleading content from anonymous volunteers online for fact-checking purposes. ■

Mafindo is an Indonesian civil society organisation established in 2015 that leverages crowdsourcing to identify and fact check false/misleading content. It is a part of the Poynter Institute’s International Fact-Checking Network (IFCN), which requires the organisation’s adherence to “non-partisanship and fairness, transparency of sources, transparency of funding and organisation, transparency of methodology, and a commitment to open and honest corrections.”<sup>27</sup>

**Figure 3: Forum Anti Hasut Fitnah dan Hoax Facebook Page**



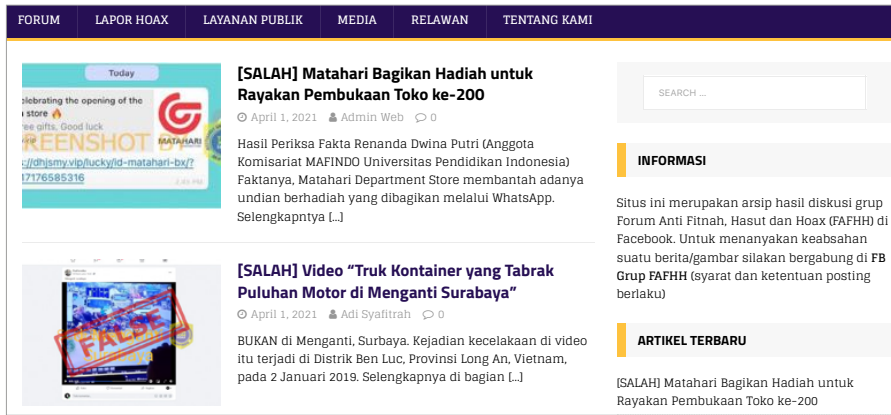
The public may report hoaxes to the initiative’s fact-checking team via several channels: email, SMS, WhatsApp or through an online form on the TurnBackHoax website.<sup>28</sup>

To debunk pandemic-related hoaxes, Mafindo’s fact-checking team worked with health practitioners, academics and university students. They also collaborated with local journalists, who have a much better understanding of the situation on the ground. Although the COVID-19 outbreak had affected the work of Mafindo’s journalist partners, preventing them from reaching people and situations due to lockdowns and road closures in some Indonesian cities, it has not significantly impacted Mafindo’s work, by and large due to its online nature.

<sup>27</sup> IFCN Signatory. 2019. “Mafindo Profile.” (<https://ifcncodeofprinciples.poynter.org/profile/mafindo>).

<sup>28</sup> Laporan Hoax. 2020. “Hoax Reporting.” [turnbackhoax.id](https://turnbackhoax.id/laporan-hoax/). (<https://turnbackhoax.id/laporan-hoax/>).

**Figure 4: Examples of Fact-Checked Articles on the TurnBackHoax Website**



The results of their fact-checking are posted on Mafindo’s public Facebook group, Forum Anti Hasut Fitnah dan Hoax (FAFHH) (Figure 3) and the TurnBackHoax website (Figure 4). The fact-checked articles are classified into one of seven types of misinformation and disinformation based on the framework formulated by media scholar Claire Wardle: misleading content, fabricated content, manipulated content, false connection, imposter content, false context or satire/parody.<sup>29</sup>

Members of the FAFHH group can also contribute articles and provide feedback if they find mistakes or insufficient details in the fact-checked results.<sup>30</sup> Mafindo has also built an API platform called the *Yudistira*, which is used to share its fact-checked articles with online media partners for dissemination purposes. ■

<sup>29</sup> Wardle, Claire. 2017. “Fake News. It’s complicated.” *First Draft*, 16 February. (<https://firstdraftnews.org/latest/fake-news-complicated/>).

<sup>30</sup> Interview with Septiaji Eko Nugroho, Founder and Chairman of Mafindo, 9 July 2020.

The three initiatives show that crowdsourcing for previously unknown solutions has been successful in terms of finding volunteers. Whether the proposed solutions “work” in terms of securing trust in the portals is, however, unclear. The initiatives had no benchmarks for measuring success as the situations during the pandemic were often fluid. The fact that volunteers showed up simply meant that many people cared enough to want to do something to tackle the pandemic even though they may not necessarily know what to do or how to go about it. This paper acknowledges the importance of trust in the platforms and believes that this will be an important area for future studies on crowdsourcing.

The case studies present several implications for the next digital decade. In any situation where governments fall short in providing information leadership, non-state actors can leverage online crowdsourcing to fill the gaps. While it is therefore tempting to argue that these non-state actors are competing with state actors for relevance during such times, the reality is much more complex. For example, the crowdsourcing initiatives highlighted in this paper depended on official data and information for their solutions as well. Although official communication remains an important aspect of governance during such times, it can be drowned in the sea of online noise in already-confusing times. And there is a need for credible voices to reach some segments of netizens who are inclined to dismiss official messages, being isolated within their filter bubbles. Instead of competing, ground-up initiatives can lend a credible voice to point people to verified information. It is therefore profitable for both sides to work towards a complementary relationship to tackle the most urgent problems in times of crises.

Non-state actors possessing a high level of technical knowledge and other expertise are likely to remain important actors during a crisis, able to mobilise quickly due to their horizontal way of organising to maximise ingenuity.

The evolution of technology also means that ground-up initiatives could benefit from technological advancements as much as states

do. Crowdsourcing, for example, could be more effectively conducted in the future. The increasing application of blockchain, a distributed ledger technology that allows data to be stored on thousands of servers globally, for example, could take crowdsourcing to the next level. This will find application not only in future epidemics but also in other governance-related issues such as election integrity and policy formulation. Blockchain will also improve identity management by enhancing methods to prove online identity, potentially preventing rogue input/volunteers from corrupting crowdsourcing initiatives and their solutions. Such technology may be available not only to state actors, but also, increasingly, non-state ones.

The challenge for policymakers is how to harness the energy of cyberactivism and the resources of the online crowd. In highly emotive situations that affect all levels of society, like disease epidemics, multiple stakeholders are needed more than ever to tackle the challenges in a quick and agile manner. Different constellations of actors can be encouraged to come together in shared, issue-specific areas. Depending on the issue at hand, private or non-state actors may even take the lead in finding solutions.

Policymakers could also consider hackathons or crowdsourcing exercises to identify useful projects for scaling up through funding and providing other much-needed resources in future crises. The EUvsVirus hackathon, for example, managed to attract solutions such as the Crithink app, a tool that helps people evaluate the information they receive before they share it.

Actively encouraging a wide set of actors to collaborate on shared, issue-specific areas such as fighting misinformation, therefore, is an aspect that governments should consider going forward. ■

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## Interviews

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Interview with Septiaji Eko Nugroho, Founder and Chairman of Mafindo, 9 July 2020.

Interview with Ainun Najib, Co-Founder of KawalCovid19, 13 July 2020.



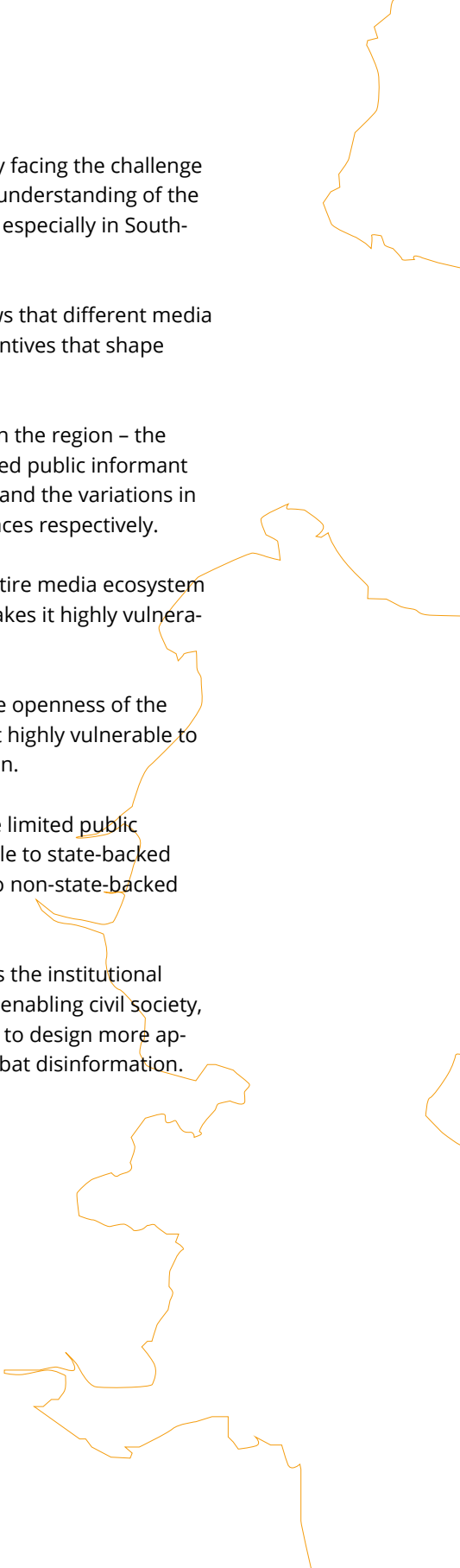




# **MEDIA SYSTEM APPROACH TO DISINFORMATION VULNERABILITY: DEVELOPING DISINFORMATION RESILIENCE IN SOUTHEAST ASIA**

Cleve V. Arguelles  
Jose Mari Hall Lanuza

# KEY TAKEAWAYS

- A diverse range of societies is increasingly facing the challenge of disinformation but we still need more understanding of the variations in disinformation vulnerability, especially in South-east Asia.
  - Across Southeast Asia, our research shows that different media system features produce a variety of incentives that shape disinformation.
  - We present three media system models in the region – the government mouthpiece model, the limited public informant model, and the public watchdog model – and the variations in disinformation vulnerabilities each one faces respectively.
  - The overwhelming state control of the entire media ecosystem in the government mouthpiece model makes it highly vulnerable to state-backed disinformation.
  - In the public watchdog model, the relative openness of the media system to different actors makes it highly vulnerable to state and non-state-backed disinformation.
  - The uneven media system features of the limited public informant model makes it more vulnerable to state-backed disinformation but also still susceptible to non-state-backed disinformation.
  - The spotlighting of media systems reveals the institutional sources of disinformation vulnerabilities, enabling civil society, government, and even the private sector, to design more appropriate and effective responses to combat disinformation.
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Around the world, diverse societies are increasingly facing a common challenge – that of disinformation. Whether in the form of electoral manipulation, medical misinformation, or communal violence, the effects of disinformation in varied media systems have been equally insidious for many countries. Governments, technology companies, and journalists are continually challenged to combat such disinformation. This is especially true for Southeast Asia where countries, in particular Indonesia, the Philippines and Thailand are now active laboratories for both disinformation innovations and consequent policy interventions.

We offer a media system approach to respond to disinformation vulnerability that can potentially be useful for Southeast Asia and elsewhere. Our research shows that media system features play a significant role in shaping how and why societies are equally but distinctively vulnerable to disinformation. In this chapter, we show how taking this approach can appropriately and better develop disinformation resilience in our societies.

We will present our proposed approach in more detail, and demonstrate the potential of a media system approach to developing disinformation resilience, drawn from our study of disinformation campaigns and media systems in Southeast Asia. Using comparative process tracing (CPT), we rigorously combined theory-informed case studies, process tracing, and within-case and cross-case comparative analysis of a wealth of secondary data from each of our 11 country cases from the region including existing scholarly works, government and non-government papers, and press organisation documents.

We did three stages of CPT to satisfy our research goals. In the first stage, we generated a typology of media system models in Southeast Asia. In the second stage, we reconstructed some of the most significant disinformation campaigns in representative country cases from 2010 to 2019 to trace the pathways of disinformation in each of the media system models. In the last stage, we brought together the data and findings from the first two stages to analyze how dis/similar media system features shape the production and dissemination of disinformation, and consequently, disinformation vulnerability. On this basis, we draw insights on the benefits and disbenefits of some of the most common policy responses to disinformation in the region. ■

# MEDIA SYSTEMS IN SOUTHEAST ASIA

We define ‘media system’ as the entirety of rules, norms, and institutions that regulate the relationship between media, state, and the broader public in a given country. The features of a media system have long been considered significant moderating factors of mass and political communication processes.<sup>1</sup> Different media system features can determine who sets the public agenda,<sup>2</sup> the effectiveness of the agenda-setting power of the mass media,<sup>3</sup> and even the quality and flow of political information to the general public.<sup>4</sup> In short, media system models can be distinguished based on the primary social role of the media in a given society – who has control of the media and for what purpose its power is used. We argue that media system features also play a role in enabling or inhibiting disinformation.

We categorise Southeast Asian media systems into the following three models: media as

- 1/ government mouthpiece,
- 2/ limited public informant, and
- 3/ a watchdog for the public.

With little studies on media systems in the region, we propose this original model of Southeast Asian media system. We take inspiration from the tradition of modeling media systems in Europe and North America<sup>5</sup>. We discuss the varied features of these different media system models as shown in *Table 1*.

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- 1 Hallin, Daniel and Paolo Mancini. 2004. *Comparing Media Systems: Three Models of Media and Politics*. Cambridge, United Kingdom: Cambridge University Press.
  - 2 Semetko, Holli, Jay Blumler, Michael Gurevitch, and David Weaver. 2013. *The Formation of Campaign Agendas: A Comparative Analysis of Party and Media Roles in Recent American and British Elections*. New York, USA: Routledge.
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**Table 1: Media System Models in Southeast Asia**

Model	Countries	Features			
		Form of media regulation	Type of media ownership	Level of journalistic independence from partisan actors	Degree of media freedom
<b>Media as government mouth-piece</b>	Brunei, Laos, Vietnam	Tight state regulation	State monopoly	No independence; nearly all are state press	Unfree
<b>Media as limited public informant</b>	Cambodia, Myanmar, Singapore, Thailand	Tight state regulation	A mixture of state monopoly and private ownership	Low independence; mostly partisan press	Unfree
<b>Media as watchdogs for the public</b>	Indonesia, Malaysia, Philippines, Timor-Leste	Media self-regulation	Private ownership	High independence; generally independent press	Partly free

Source: *The Authors*<sup>6</sup>

In the first model, the government exercises absolute control of the media environment to ensure that the media functions as the “throat and tongue” of the state. Government policies directly shape what media can and cannot do, show, or talk about, regardless of platform – whether it is print, radio, television, or even internet media. The defining characteristic of this model is the state monopoly of media ownership. The second model, one in which the media’s primary role is to be a limited public informant, shares

<sup>6</sup> As an exercise in regional comparison, some model features may not be applicable to all countries. Nevertheless, cross-model differences are argued to be more analytically meaningful than within-model variations. Media systems in transition, like that of Myanmar or Malaysia, are particularly more challenging to be included in regional models. The most recent political changes in Myanmar and Malaysia, from 2020 to present, have yet to be incorporated in our analysis.

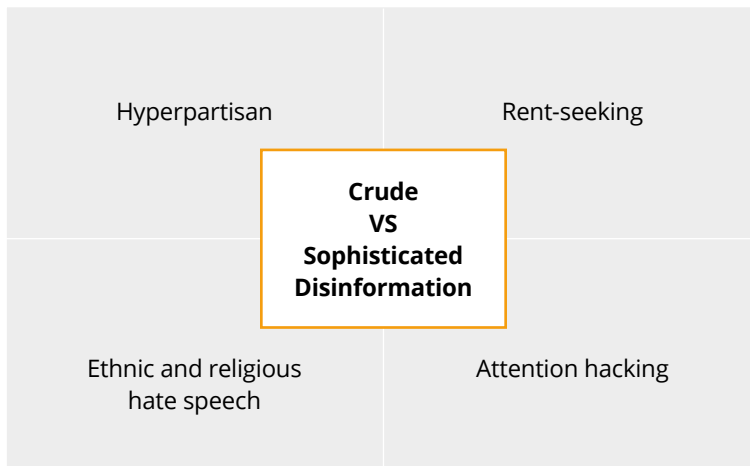


some of the features of the first one. State authorities impose a high degree of control over the media; however, rather than direct interference and ownership, the state exercises influence over the media through a culture of fear and self-censorship among journalists. There is a relative plurality of voices, journalists are more than just party watchdogs, and unregulated content thrives – especially in privately-owned media outlets.

In contrast to the first two models, in the third model, the press is given a significant role in advocating public interest – especially in times when it is at odds with the government agenda. One of the most important features of this model is media self-regulation. State laws set only minimal requirements for media outlets to operate freely and autonomously. Rather than the pressure of partisan or ideological lines, which issues get coverage and which get ignored is dictated by business capital. Regardless of these challenges, however, the relatively free media environment in this model is still markedly different from the others. ■

We define disinformation as any false information that is intentionally published to harm a person, community, or an entire society.<sup>7</sup> Corollary, we use the word ‘disinformative’ for contents, regardless of type, that fit this conceptualization. Although it could be personally harmful, the harm done through disinformation usually transcends the targeted individual; it hijacks public conversations to manipulate public opinion and erodes public trust in the media and in democratic institutions. The deception and harm is used primarily for partisan or private gains. This conceptualisation of disinformation distinguishes it from both misinformation (unintentionally harmful false information) or mal-information (intentionally harmful true information).

**Figure 1: Types of Disinformative Content and Forms of Disinformation in Southeast Asia**



Source: The Authors

We spotlight the four convergent varieties of disinformation observed across various media systems in Southeast Asia. As shown

<sup>7</sup> Wardle, Claire, and Hossein Derakhshan. 2018. “Thinking about ‘Information Disorder’: Formats of Misinformation, Disinformation, and Mal-Information.” In *Journalism, ‘Fake News’ & Disinformation*, edited by Cheryl Ireton and Julie Posetti. Paris: Unesco. 43–54; Humprecht, Edda, Frank Esser, and Peter Van Aelst. 2020. “Resilience to Online Disinformation: A Framework for Cross-National Comparative Research.” *The International Journal of Press/Politics*. (<https://doi.org/10.1177/1940161219900126>).



in Figure 1, disinformation across the region converges around several ideas:

- 1/ hyper-partisanship,
- 2/ rent-seeking,
- 3/ ethnic & religious conflict, and
- 4/ attention hacking.

We describe how these varieties operate, focusing on the media system manipulation tactics associated with each. Looking at the means and efficacy of production and dissemination, these varieties of disinformation can further be categorised to be either (1) crude or (2) sophisticated in form.

‘Hyper-partisan disinformation’ is characterised by the use of disinformative content that is extremely biased in favor of one political faction. Such disinformation can be employed by both the administration and opposition camps through media manipulation tactics involving multiple actors in a network, making it more sophisticated. Hyper-partisan disinformation is often found in anonymous pages, websites, mobile instant messaging chat rooms, or multimedia channels that report extremely-skewed news framed disinformatively. Political actors take advantage of weak regulatory regimes or media capture by contributing to hyper-partisan disinformation, in a race to churn out content for political control.

Some disinformative content functions to tarnish the reputation of market competition. We call this ‘rent-seeking disinformation’ since the ultimate aim is economic profit. In Southeast Asia the circles of the economic and the political elite greatly overlap and are secured through informal protection pacts,<sup>8</sup> making rent-seeking disinformation a highly viable tool for both state and economic actors. As such, the region has seen both state-led and private-led variants of commercially motivated disinformation.

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<sup>8</sup> Slater, Dan. 2010. *Ordering Power: Contentious Politics and Authoritarian Leviathans in Southeast Asia*. New York: Cambridge University Press.

Disinformation playing on ethnic and religious divides aim to subjugate groups and exercise political control over them, through either state propaganda or independent and bigoted social media activities. This variety usually uses false narratives with incendiary and uncivil language that leads to very real threats to the safety and welfare of the targeted groups. These sentiments come in the form of hyper-aggressive comments, fake news, and memes.

Lastly, 'attention-hacking disinformation' is mostly personally motivated, and uses clickbait tactics to spread disinformation across the media system. This variety relies on spectacle, whether based on reliability of everyday experiences or shock and awe. Such narratives include false posts and videos that may portray politicians as more relatable by using out-of-context quotes, images, or videos to sell messages. While not necessarily less harmful, its intent may be less insidious; yet, spotlighting this variation helps since it exploits the same media system vulnerabilities that other variations do.

Some of these varieties are more complex than others in both form and content. The varieties with more complicated dissemination mechanisms can be considered 'sophisticated disinformation' and are usually deployed for high political stakes. Sophisticated disinformation typically involves either advertising and public relations firms or networked individuals or both, working closely with political actors from either the administration or the opposition, to create disinformation that is challenging to trace. The use of "cheap fakes", content seeding via social media influencers, or the use of closed online groups are some of the examples of this form.

Less complex disinformation can be described as crude and has relatively lower stakes, but may still be used for political gain. 'Crude disinformation' usually only involves an individual and their limited network, but virality may play a role in wide dissemination. State or farm trolls are the most popular crude forms of disinformation and social media platforms tend to zero in on this form of disinformation given its simple nature. ■

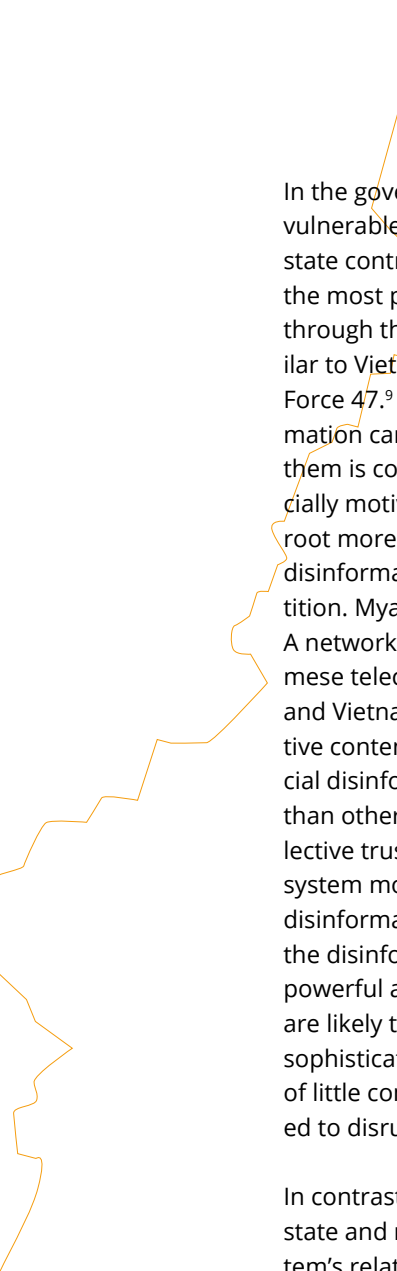
# VARIETIES OF DISINFORMATION VULNERABILITY

We define disinformation vulnerability as the state of susceptibility of a media system to the potential risks and damaging consequences of disinformation. It refers to the diminished capacity of a media system to detect, minimise, respond to, and recover from the harm resulting from a disinformation campaign. Our research shows that all media systems face the hazards of disinformation, but each is distinctively vulnerable: varied media system features make societies more vulnerable to some forms of disinformation over others. We show this in *Table 2*. Media system features affect the distribution of institutionalised incentives for the kinds of social actors who engage in disinformation work as well as the likely form of disinformation, which in turn, produce variations in disinformation vulnerability.

**Table 2: Varieties of Disinformation Vulnerability in Southeast Asia**

Media System Model	Disinformative Actors	Form of Disinformation	Disinformation Vulnerability
<b>Government mouthpiece</b> (Brunei, Laos, Vietnam)	Mainly state actors; partisan and commercial actors	Mostly crude	High vulnerability to state-backed disinformation across platforms; Limited disinformation activity for non-state actors
<b>Limited public informant</b> (Cambodia, Myanmar, Singapore, Thailand)	Both state and non-state actors	Uneven mix of crude and sophisticated	More vulnerable to state-backed disinformation, but some platforms are also susceptible to non-state-backed disinformation
<b>Public watchdog</b> (Indonesia, Malaysia, Philippines, Timor Leste)	Both state and non-state actors	Mostly sophisticated	High vulnerability to both state and non-state-backed disinformation, especially digital media

Source: *The Authors' Compilation*




In the government mouthpiece model, media systems are highly vulnerable to state-backed disinformation given the overwhelming state control of the entire media ecosystem. State propaganda is the most prevalent kind of disinformation whether it is executed through the state-controlled press or state-sponsored trolling similar to Vietnam's 10,000-strong 'public opinion brigades' called the Force 47.<sup>9</sup> The costs of non-state-backed hyper-partisan disinformation campaigns are extremely high and the space available for them is consequently low. Apart from state propaganda, commercially motivated disinformation operations are also likely to take root more in this media system. Since politics is generally off limits, disinformation is used to rig economic rather than political competition. Myanmar's state-owned media system is an example of this. A network of Facebook accounts and pages linked to MyTel, a Burmese telecommunications company indirectly owned by Myanmar and Vietnamese militaries, were found to be producing disinformative contents to tarnish the reputation of its competitor.<sup>10</sup> Commercial disinformation may be less insidious but it is no less harmful than other varieties of disinformation campaigns: it erodes the collective trust of the public in the media, thereby making the media system more vulnerable to future disinformation. Cruder forms of disinformation, like the Myanmar example, also tend to dominate the disinformation scene in this model. There is low incentive for powerful actors to go beyond crude forms of disinformation that are likely to produce the same outcomes but at a lower cost than sophisticated ones. Despite their crudeness, they still work because of little competition. More importantly, state forces are not expected to disrupt a media system already working as their mouthpiece.

In contrast, the public watchdog model is highly vulnerable to both state and non-state-backed disinformation given the media system's relative openness to different actors. As incumbents do not have a monopoly of access to media outlets, other political groups also make use of the media to advance their partisan aims. They usually rely on privately-owned

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<sup>9</sup> "Vietnam unveils 10,000-strong cyber unit to combat 'wrong views.'" *Reuters*, 26 December 2017. (<https://www.reuters.com/article/us-vietnam-security-cyber-idUSKBN1EKOXN>); Hookway, James. 2017. "Introducing Force 47, Vietnam's new weapon against online dissent." *The Wall Street Journal*, 31 December. (<https://www.wsj.com/articles/introducing-force-47-vietnams-new-weapon-against-online-dissent-1514721606>).

<sup>10</sup> Murphy, Hannah, and John Reed. 2020. "Facebook accuses telecoms groups of disinformation tactics." *Financial Times*, 12 February. (<https://www.ft.com/content/1096ad54-4d5f-11ea-95a0-43d18ec715f5>).



media outlets which are heavily commercially dependent, and as such, are prone to favour content that will drive the revenue up regardless of the harm it may cause. As state actors exploit state-owned media for their propaganda, other partisan groups take advantage of the privately-owned press to advance their own agenda, either through buying their own media spaces or gaming the profit logic of commercial media. The open-for-all system also incentivises a more sophisticated form of disinformation since only this form has a chance of simultaneously attracting public attention, circulating quickly, and creatively circumventing shared industry norms in an open but crowded media system. The Philippines is a good example of this case. Election-related disinformation on Facebook during the 2016 and 2019 Philippine elections shifted from the use of influencers and fake accounts as conduits of disinformation to micro- and nano-influencers, as well as closed interest groups and local newsgroups – the last being more difficult to monitor and leaving fewer digital traces.<sup>11</sup> Behind these innovations are a range of big and small advertising and public relations agencies all competing, innovating their products and services, for a slice of the fast growing disinformation industry pie.<sup>12</sup> The use of professional help to produce, disseminate, and innovate election-related disinformation campaigns is increasingly becoming more common in Indonesia,<sup>13</sup> another country with a relatively open media system.

The public watchdog model is especially vulnerable to disinformation in the digital media because of the incentives provided by media self-regulation and private ownership of media. Moreover, as the newest form of media, shared informal and formal norms of professional conduct among those who use digital media have yet to develop fully. In comparison, traditional print and broadcast media have established safeguards to secure themselves from media manipulation – including dealing with advertising and public relations agencies doing commu-

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**11** Ong, Jonathan Corpus, Ross Tapsell, and Nicole Curato. 2019. “Tracking Digital Disinformation in the 2019 Philippine Midterm Election.” *New Mandala*. (<https://www.newmandala.org/wp-content/uploads/2019/08/Digital-Disinformation-2019-Midterms.pdf>).

**12** Ong, Jonathan Corpus, and Jason Vincent A. Cabañes. 2018. “Architects of Networked Disinformation: Behind the Scenes of Trolls Accounts and Fake News Production in the Philippines.” *Newton Tech4Dev Network*. (<https://newtontechfordev.com/wp-content/uploads/2018/02/ARCHITECTS-OF-NETWORKED-DISINFORMATION-FULL-REPORT.pdf>).

**13** Ong, Jonathan Corpus and Ross Tapsell. 2020. “Mitigating Disinformation in Southeast Asian Elections: Lessons from Indonesia, Philippines and Thailand.” *NATO Strategic Communications Centre of Excellence*. (<https://www.stratcomcoe.org/mitigating-disinformation-south-east-asian-elections>).

nication work for their clients. This does not mean that traditional media is immune to disinformation, but there are barriers to entry which are absent in digital media.

In comparison, societies with a limited public informant media system are more vulnerable to state-backed disinformation but may also be susceptible to non-state-backed disinformation due to the uneven regulation, ownership, and independence structures of media platforms. State-dominated platforms are used for state propaganda while non-state actors try to use private media for disinformation operations. For example, print media in Singapore is tightly regulated while print media in Thailand enjoys relative independence. The logic of disinformation vulnerability in the government mouthpiece model extends to Singapore's print media while the form of disinformation vulnerability observed in the public watchdog model extends to Thailand's print media. This is why one can expect an uneven mix of crude and sophisticated disinformation activity in this model, depending on the platform. As media ownership is also mixed, disinformation operations take an even more partisan form. Media platforms have evolved to be highly biased towards one side, making them more vulnerable to disinformation. Thailand's broadcast media, for example, is generally divided along pro-establishment and anti-government television channels which tend to promote skewed, hyper-partisan, and sometimes disinformative contents depending on their favored interests. However, the limited public informant model is still more vulnerable to state-backed disinformation considering that state actors usually have far more institutionalised advantages in terms of media control and resources. ■



# DEVELOPING DISINFORMATION RESILIENCE

We define disinformation resilience as the capacity of a media system to prepare for, respond to, and recover from the hazards and harms of disinformation. We argue that developing disinformation resilience requires identifying and responding to the particular disinformation vulnerability of each media system. Our research finds, however, that the policy responses to disinformation in Southeast Asia have yet to benefit from a media system approach. Despite diverse media systems, three general policy approaches are increasingly becoming common in Southeast Asia: (1) state-led content regulation, (2) mainstreaming disinformation literacy, and (3) technology firm-led content regulation.<sup>14</sup> In *Table 3*, we show that the application of these policy approaches without the benefit of a media system context cannot minimise disinformation vulnerability in the region.


**Table 3: Common Policy Responses to Disinformation and its Impact on Media Systems in Southeast Asia**

Common Policy Responses to Disinformation in Southeast Asia	Media System Models in Southeast Asia		
	Government mouthpiece model	Limited public informant model	Public watchdog model
<b>State-led content regulation</b>	Unable to address state-backed disinformation; will reinforce total state capture of media	Unable to address state-backed disinformation; will even out state dominance in all media platforms	Could be ineffective given that state regulatory apparatus is weak; may facilitate state-backed disinformation more

<sup>14</sup> Arguelles, Cleve V. 2020. "From Self-Regulation to State Intervention: Shifting Modes of Social Media Regulation in Asia." In *Regulating the Cyberspace*, edited by Gisela Elsner and Aishwarya Natarajan. Singapore: Konrad-Adenauer-Stiftung, Rule of Law Programme Asia, 79–94.

<b>Mainstreaming disinformation literacy</b>	Ineffective in state-dominated platforms	Ineffective in state-dominated platforms; potentially effective in high-choice media platforms	Potentially effective but not against sophisticated disinformation
<b>Tech firm-led content regulation</b>	Potentially effective except if co-opted by state; does not address disinformation beyond social media		Potentially effective but may lack transparency and accountability; will balkanise disinformation activity

Source: *The Authors' Compilation*



One of the most popular policy responses is to grant states more power to regulate content across different media platforms, most especially social media. States are called to impose legal sanctions on the production and dissemination of disinformative content. Penalties include censorship, fines, and jail time. Yet this is both inadequate and dangerous for some media systems. In the government mouthpiece and limited public informant models, content regulation appeals to the government since it lends them more power to shape public discourse, and more often than not, restrict public dissent. It also empowers states to legitimise censorship under the guise of defending the public from disinformation. Singapore's Protection from Online Falsehoods and Manipulation Act (POFMA) for example, has been increasingly used against opposition politicians and state critics.<sup>15</sup> The same issue can be observed in the public watchdog model where although states have less capacity to regulate disinformative content, they primarily use it for politicised and partisan purposes.<sup>16</sup> But even if state actors are willing, they will still need to build state capacity to regulate media content in general. State-led content regulation is unlikely to build disinformation resilience in media systems that are vulnerable to

<sup>15</sup> "POFMA Office directs Brad Bowyer to correct Facebook post in first use of 'fake news' law." *Channel News Asia*, 25 November 2019. (<https://www.channelnewsasia.com/news/singapore/bradbowyer-facebook-post-falsehood-pofma-fake-news-12122952>); "Facebook bows to Singapore's 'fake news' law with post 'correction'", *BBC News*, 30 November 2019. (<https://www.bbc.com/news/world-asia-50613341>).

<sup>16</sup> Arguelles. 2020. "From Self-Regulation to State Intervention."



state-backed disinformation, especially considering that most media systems are vulnerable to it.

Another policy response, which many civil society groups have devoted their resources to, is to mainstream disinformation literacy norms among the public. This response includes establishing fact-checking initiatives online and offline as well as educating people on how to spot fake news. Aside from civil society initiatives, some governments those of Cambodia and the Philippines have also formally incorporated media literacy into their school curricula.<sup>17</sup> However, the disinformation literacy approach does not address the institutional distribution of incentives for different media system actors. It may encourage states and societies to pass on the responsibility to safeguard media systems to ordinary educators and citizens whose influence on the media market largely depends on media system features. More importantly, fact-checking initiatives are increasingly being pulled in partisan and polarised directions, too.<sup>18</sup> Mainstreaming disinformation literacy is least effective in state-dominated media systems where media consumers exercise little influence. If the press market is limited to state outlets, they are less likely to be incentivised to respond to fact-checking initiatives and even to a more discerning population. The approach may benefit high choice media systems more, such as the public watchdog model, since media consumers have significant leverage on the media market. However, the increasing sophistication of disinformation may pose a challenge. The public will be drawn to play cat and mouse with disinformation producers – and it will be a tiring cyclical game that the general population will not be able to sustain for an extended length of time. It will become harder and harder for common media consumers to recognise disinformation designed to evade detection by even professional fact checkers. Mainstreaming disinformation literacy without addressing institutional incentives will thus be inadequate in developing disinformation resilience.

And lastly, it has also become fashionable in the region – as it has across the world – to pressurise technology companies into regu-

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<sup>17</sup> Salaverria, Leila B. 2017. “PH, Cambodia Agree to Fight ‘Fake News.’” *Inquirer. Net*, 17 December. (<https://globalnation.inquirer.net/163065/ph-illippines-cambodia-fake-news-martin-andanar-khieu-kanharith>).

<sup>18</sup> Ong and Tapsell. 2020. *Mitigating Disinformation in Southeast Asian Elections*.

lating their platforms against threats of disinformation. Firms ban suspicious users, take down content, and demote untrustworthy accounts using both professional content moderators as well as algorithms. Facebook, for example, has been publicising its decision to ban users and pages from its platform that are deemed to be behaving inauthentically especially during election seasons.<sup>19</sup> Another example is Twitter's recent move to label all state-controlled government and media accounts.<sup>20</sup> These moves, however, may create new harms in societies where technology companies exercise unparalleled power. In many countries in the region, social media platforms are informational giants with a monopoly on online data.<sup>21</sup> Platform bans and other measures being taken by these firms are rarely a product of deliberation with the broader public. In fact, other researchers have observed that technology platforms rarely engage with, or pay attention to government and civil society in Southeast Asia compared to their counterparts in Western Europe and North America.<sup>22</sup>

Technology firm-led content regulation is potentially the most useful tool to develop disinformation resilience in different media systems. But this potential does not come without its specific dangers. In the government mouthpiece and limited public informant models, this approach may be effective, especially if technology platforms exercise their power to challenge the monopoly or uneven influence of the state over the entire media ecosystem. Their platforms may interrupt an otherwise closed media system filled with either state propaganda or state-backed disinformation. However, technology platforms may be also forced to pander to state actors due to a fear of being sanctioned or losing access to a country's market. For instance, Facebook in Thailand recently banned foreign election-related ads as well as online groups critical of the monarchy. Journalists are worried that

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<sup>19</sup> Chan, Francis. 2017. "Indonesian Police Uncover 'Fake News Factory.'" *The Straits Times*, 17 September. (<https://www.straitstimes.com/asia/se-asia/indonesian-police-uncover-fake-news-factory>); "Facebook Dan Instagram Hapus Akun Terkait Papua Barat." *CNN Indonesia*, 4 October 2019. (<https://www.cnnindonesia.com/teknologi/20191004180933-185-436840/facebook-dan-instagram-hapus-akun-terkait-papua-barat>); "Taking Down Coordinated Inauthentic Behavior in Indonesia." *Facebook*, 1 February 2019. (<https://about.fb.com/news/2019/01/taking-down-coordinated-inauthentic-behavior-in-indonesia/>).

<sup>20</sup> "About Government and State-Affiliated Media Account Labels on Twitter." *Twitter*, 26 August 2020. (<https://help.twitter.com/en/rules-and-policies/state-affiliated>).

<sup>21</sup> Iosifidis, Petros, and Leighton Andrews. 2020. "Regulating the internet intermediaries in a post-truth world: Beyond media policy?" *International Communication Gazette* 82, 3: 211–230.

<sup>22</sup> Ong and Tapsell. 2020. *Mitigating Disinformation in Southeast Asian Elections*.

this may unfairly benefit only the already powerful military-backed government.<sup>23</sup> If such methods are adopted more often by the state, technology platforms may merely reinforce state dominance over traditional media and extend that dominance to include the digital media. The China model, where major technology platforms are either completely banned or follow state rules of censorship, stands as a worrying example especially because the Chinese government has been actively exporting its regulation model to its neighboring countries in Asia.<sup>24</sup>

In the public watchdog model, the danger of platform-led content regulation stems from the nature of technology firms as private entities: they cannot always be expected to be either transparent or accountable to the public. The media in the public watchdog model is already challenged by dominant commercial media interests. But this approach essentially allows commercial technology firms to assume an even more prominent role in governance – raising valid concerns about the incompatibility of commercial interests and public interests. For instance, many of the social media platforms earn huge profits from highly-engaged disinformative content and have been even responsible for the continuing violence against some marginalised groups in the region including the Rohingyas in Myanmar.<sup>25</sup> Technology firms develop platforms where disinformation can be financially rewarding for them and they have been rarely held accountable for it.<sup>26</sup> Technology firm-led content regulation may end up reinforcing the overwhelming influence that the private media industry currently enjoys in shaping media governance, possibly at the expense of other sectors in society.

Most importantly, while we and other researchers see great potential in platform bans in developing disinformation resilience,<sup>27</sup> there is a need to ensure that media system-level drawbacks is

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23 “Facebook blocks foreign ads before Thai election amid fears junta will benefit”, *South China Morning Post*, 31 January 2019. (<https://www.scmp.com/news/asia/southeast-asia/article/2184460/facebook-will-block-foreign-ads-and-bad-actors-thai>); BBC News. 2020. “Facebook blocks Thai access to group critical of monarchy.” *BBC News*, 25 August 2020. (<https://www.bbc.com/news/world-asia-53899816>).

24 Arguelles. 2020. *From Self-Regulation to State Intervention*.

25 United Nations Human Rights Council. 2018. *Report of the Detailed Findings of the Independent International Fact-Finding Mission on Myanmar*. (<https://digitallibrary.un.org/record/1643079?ln=en>).

26 Lewis, Rebecca. 2018. “Alternative Influence: Broadcasting the Reactionary Right on Youtube.” *Data & Society*. ([https://data-society.net/wp-content/uploads/2018/09/DS\\_Alternative\\_Influence.pdf](https://data-society.net/wp-content/uploads/2018/09/DS_Alternative_Influence.pdf)).

27 Lewis. 2018. “Alternative Influence: Broadcasting the Reactionary Right on Youtube.”



not overwhelming. Addressing disinformation in the digital media but not in traditional media may only balkanise disinformation in the media system. The reach of traditional media is still unparalleled and it is the platform mostly dominated by either commercial or state interests. It is too important to the entire media system to be left out. In fact, highly-publicised platform bans or content take-downs may unwittingly let disinformation travel from digital media to print and broadcast media. Mainstream media generally reports these actions of technology firms and this can lead to popularising disinformative content through a takeover of the mainstream news cycle.<sup>28</sup> The platform boundaries in a media system can be porous, and disinformation operators can easily take advantage of that. A balkanised response to disinformation will be inadequate to face the challenges of media system-wide disinformation vulnerability. ■

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<sup>28</sup> Phillips, Whitney. 2018. "The Oxygen of Amplification: Better Practices for Reporting on Extremists, Antagonists, and Manipulators Online." Data & Society. (<https://datasociety.net/library/oxygen-of-amplification/>).

# CONCLUSION

Using a media system approach to disinformation vulnerability, our research shows that all societies are equally but differently vulnerable to disinformation regardless of their media system model. Varied media system models consequently produce varied forms of disinformation vulnerability. Our research argues that in order to develop disinformation resilience, policy responses, rather than being applied uniformly across all media system types, must be responsive to specific forms of disinformation vulnerability. Our proposed initiatives demand institutional changes and will be more helpful in the long-run than in the short-term.

In the government mouthpiece model, disinformation is essentially a consequence of state capture of the media. This means that addressing disinformation vulnerability in this model would require less state control over the entire media landscape. State-led content regulation is likely to worsen state-backed disinformation; a disinformation-literate population is unlikely to have any significant leverage over state press; and technology firm-led content regulation can potentially be partially effective if not co-opted by the state. The state's monopoly control of media allows it to simultaneously play both the role of disinformation producer and regulator without external checks and balances, leaving media audiences especially vulnerable and severely limited in their capacity to respond. Developing disinformation resilience in this model, then, requires arduous long-term media system-wide initiatives that can help media develop autonomy from the state – in social role, ownership, regulation, and professional practice.

In the public watchdog model, disinformation is generally a result of the business capture of the media. Policies to address disinformation must encourage media freedom not only from state interests but also commercial ones. State-led content regulation is likely to be ineffective if it is not disruptive of media self-regulation norms; mainstreaming disinformation literacy can partially safeguard its high-choice media environment, and technology firm-led content regulation is potentially one of the most effective means to combat disinformation – but only in the digital media. Developing disinformation resilience in this model is a matter of creating

disinformation-related self-regulation protocols and norms among journalists and media platforms. This is an attainable task but the presence of varied actors with varied interests may mean that it may take a longer time – and can make the media system deeply vulnerable in the meantime.

In the limited public informant model, disinformation vulnerability is a function of a mix of state and business capture of the media – but mostly skewed in favor of the state. Responding to disinformation vulnerability in this model is tricky as even small shifts in institutionalised incentives may exacerbate one form of media system capture over another. Depending on the particular platform, the advantages and disadvantages of the policy approaches analysed can parallel those of the other two models. Social media is likely to benefit from technology firm-led content regulation like in the public watchdog model while state-led content regulation for broadcast media is similarly dangerous like in the government mouthpiece model. Developing disinformation resilience in this media system type will require platform-specific initiatives. In platforms where the state plays a strong role, developing media autonomy is key. Otherwise, developing a self-regulation process targeting disinformation can be beneficial.

Ultimately, disinformation vulnerability can be traced to media system-wide weaknesses, which in turn are borne out of social and historical specificities. Media systems – like political systems – were “strongly shaped by the same social conflicts and by the institutions and cultural patterns that emerged out of them”<sup>29</sup> including disinformation. And while institutions like media systems can be strongly resilient to change, moments of crises are also moments of opportunity to re-shape institutions. The recent disinformation plague is proving to be a crisis that is challenging media systems in Southeast Asia and the rest of the world. By employing a media system approach, we hope that our research shows the possibilities of how we can use this crisis to not only deal with disinformation as a persistent issue of the day, but to also reshape media systems to be more responsive to the needs of the public and the demands of democracy and human rights in the long-run.

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<sup>29</sup> Hallin and Mancini. 2004. *Comparing Media Systems*. 301.

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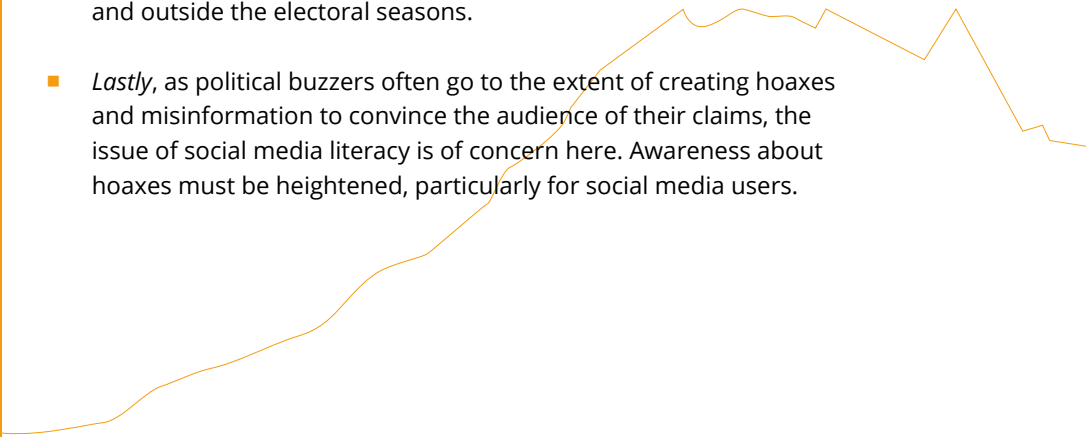




# **THE INDUSTRY OF POLITICAL BUZZING IN INDONESIA AND ITS IMPACT ON SOCIAL MEDIA GOVERNANCE: EXAMINING VIRAL TWEETS**

Dr. Mirta Amalia  
Klara Esti  
Mohammad Rinaldi Camil

# KEY TAKEAWAYS

- In the past few years, we have seen a surge in the use of buzzers on social media for promoting political agendas in Indonesia. A political buzzer is regarded as an individual who owns social media account(s) with thousands or millions of followers, and is assigned by the running candidates to amplify certain political issues by creating viral posts on social media.
  - Political buzzing in Indonesia nowadays bears a negative connotation, as buzzers often craft opinions based on hoaxes and misinformation. Such practices deteriorate public conversation on social media, further perplexing social media governance.
  - Issues concerning the ecosystem of political buzzing and its link with social media governance are underexplored. This qualitative study attempts to address this gap by exploring the actors behind the industry of political buzzing, examining buzzing strategies and investigating the virality of a message.
  - This study finds three major players behind the political buzzing industry: (1) politicians and political parties as the clients; (2) marketing agencies as the mediators who maintain a central role in connecting the demand and supply of buzzers; and (3) the buzzers themselves whose target is to create viral posts. Understanding the logic of each actor is key to improving social media governance.
  - Our findings shed a light on at least three aspects that should be considered for promoting social media governance in the context of political buzzing.
  - *First*, the regulatory framework is the primary aspect to be addressed.
  - *Second*, state capacity must be improved to enforce the laws, within and outside the electoral seasons.
  - *Lastly*, as political buzzers often go to the extent of creating hoaxes and misinformation to convince the audience of their claims, the issue of social media literacy is of concern here. Awareness about hoaxes must be heightened, particularly for social media users.
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Indonesia first saw the massive spread of political buzzing on social media in the 2012 Jakarta gubernatorial election. Political buzzing refers to an act of amplifying political issues. The term ‘political buzzer’ itself resonates with terms like ‘trolls’ in the Philippines,<sup>1</sup> and ‘cyber troops’ widely used in the US and the UK.<sup>2</sup>

During the 2012 election, buzzers were recruited by the running candidates to raise the public’s awareness of the candidates and their programmes.<sup>3</sup> They were paid to post frequent updates on social media (mainly on Twitter) around issues relevant to the candidates. They were also often involved in offensive debates intended to smear the opponents’ image.<sup>4</sup> While this practice is nothing new in politics, the use of hoaxes and misinformation to craft arguments attracted controversy.<sup>5</sup> Such practices distinctly deteriorated public debate, particularly on social media in Indonesia,<sup>6</sup> and contributed to bringing the issue of social media governance into the spotlight.

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- 1 Ong, Jonathan Corpus and Jason Vincent A. Cabañes. 2018. “Architects of Networked Disinformation: Behind the Scenes of Troll Accounts and Fake News Production in the Philippines.” ([https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1075&context=communication\\_faculty\\_pubs](https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1075&context=communication_faculty_pubs)).
  - 2 Bradshaw, Samantha and Philip N. Howard. 2017. “Troops, trolls and troublemakers: A global inventory of organized social media manipulation.” Computational Propaganda Research Project, Working Paper no. 2017.12.
  - 3 “Complex vibrations: What drives political buzzers.” *Tempo*, 6 December 2019. (<https://en.tempo.co/read/1280726/complex-vibrations-what-drives-political-buzzers>).
  - 4 Lim, Merlyna. 2017. “Freedom to hate: social media, algorithmic enclaves, and the rise of tribal nationalism in Indonesia.” *Critical Asian Studies* 49, 3.
  - 5 Potkin, Fanny and Agustinus Beo Da Costa. 2019. “In Indonesia, Facebook and Twitter are ‘buzzer’ battlegrounds as elections loom.” *Reuters*, 13 March. (<https://www.reuters.com/article/us-indonesia-election-socialmedia-in-sigh/in-indonesia-facebook-and-twitter-are-buzzer-battlegrounds-as-elections-loom-idUSKBN1QUoAS>).
  - Board, Jack. 2019. “Inside Indonesia’s ‘fake news’ war room, fighting political hoaxes in election season.” *Channel News Asia*, 13 April. (<https://www.channel-newsasia.com/news/asia/indonesia-election-fake-news-war-room-fighting-political-hoaxes-11439398>).
  - Lamb, Kate. 2018. “‘I felt disgusted’: Inside Indonesia’s fake Twitter account factories.” *Guardian*, 23 July. (<https://www.theguardian.com/world/2018/jul/23/indonesias-fake-twitter-account-factories-jakarta-politic>).
  - 6 Mohamad, Paramita. 2020. “Can think tanks save public debates from political buzzers?” *Communication for Change*, 12 June. (<https://communicationforchange.id/can-think-tanks-save-public-debates-from-political-buzzers/>).

Globally, a number of countries have drafted laws and regulations to address hate speech and fake news. These include Germany<sup>7</sup>, Singapore<sup>8</sup>, and Thailand<sup>9</sup>. However, the notion of governance is understood as broader than regulation and policy, stretching to the stakeholders participating in the process.<sup>10</sup> There is very little research that examines the ecosystem of political buzzing and its link with social media governance. This study attempts to address this gap by shedding light on the actors in the political buzzing industry and the buzzing strategies in Indonesia.

It is worth noting that this research was conducted in 2017.<sup>11</sup> The increasing use of social media in Indonesia has led to the growth of the political buzzing ecosystem. A recent report has revealed increased government spending on hiring influencers, from 17,6 billion Rupiahs (equivalent to US\$ 118.000) in 2017, to 90,54 billion Rupiahs (equivalent to US\$ 609.000) in 2020.<sup>12</sup> The term ‘influencers’ was specifically used as distinct from the term ‘buzzers’. It is thus necessary to understand the characteristics of buzzers and influencers, which will be elaborated in subsequent sections of this paper. ■

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7 Echikson, Wiliam and Olivia Knodt. 2018. “Germany’s NetzDG: A key test for combating online hate.” CEPS Policy Insight, 22 November. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3300636](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3300636)).

8 Singapore Legal Advice. 2020. “Singapore Fake News Laws: Guide to POEMA (Protection from Online Falsehoods and Manipulation Act).” (<https://singapore-legaladvice.com/law-articles/singapore-fake-news-protection-online-falsehoods-manipulation/>).

9 Ganjanakhundee, Supalak. 2020. “Social Media and Thailand’s Struggle over Public Space.” ISEAS Yusof Ishak Institute Perspective 2020, No. 67.

10 Napoli, Philip M. 2015. “Social media and the public interest: Governance of news platforms in the realm of individual and algorithmic gatekeepers.” Telecommunications Policy 39, 9.

11 Camil, Rinaldi, Natasha H. Attamimi, and Klara Esti. 2017. “Di Balik Fenomena Buzzer: Memahami Lanskap Industri dan Pengaruh Buzzer di Indonesia” (Behind the Scenes of the Buzzer Phenomenon: Understanding the Landscape of the Industry and the Influence of Buzzer in Indonesia). Jakarta: Centre for Innovation Policy and Governance.

12 Moch, Fiqih Prawira Adijie. 2020. “Jokowi administration spends Rp. 90.4 billion on ‘influencers’: ICW.” The Jakarta Post, 20 August. (<https://www.thejakartapost.com/news/2020/08/20/jokowi-administration-spends-rp-90-4-billion-on-influencers-icw.html>).

This study employs a combination of three methods to collect its data. The *first* is desk study, which helps identify the key events and the actors involved in the political buzzing industry. Because academic research on the political buzzing phenomenon is limited, we also turn to grey literature such as blogs and presentations.

The *second* method is semi-structured, in-depth interviews. The interviews are directed to reveal the emergence of the buzzer and the working mechanism of the buzzing industry. From February to April 2017, we conducted a total of ten individual, in-depth interviews, which consisted of five influencers, two public relations agencies, two social media experts, and one academic. Although the number of interviewees was small, our aim was to gain in-depth insights from experts who represent different groups of actors in the industry. We used snowball sampling in our attempts to harness more insights. During our interviews, we learned that political buzzing is a sensitive topic. Therefore, the names of interviewees presented here are not their real names.

The *third* method is social network analysis (SNA). For the purposes of this study, SNA helps to understand the spreading of a message and the typology of the messages that attracted the public's attention within a network. We took two Twitter networks from two influencers' accounts (i.e. @nukman & @ulinyusron) as our case study. We obtained their Twitter network data on 19 April 2017 for 24 hours; this was the day the 2017 Jakarta gubernatorial election took place. We retrieved tweets, converted data into Excel spreadsheets and extracted each user's data manually. We then categorized each user based on the reply, retweet and mention options in Twitter. As a result, we found 505 users in @nukman's network and 1,255 users in @ulinyusron's network. We applied the Kamada-Kawai graph partitioning algorithm<sup>13</sup> to generate the network layouts and analysed the spread of information within each network.

Although this research was conducted in 2017, it remains relevant in the current context as understanding buzzing is critical for developing regulatory frameworks of social media governance. ■

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<sup>13</sup> Kamada-Kawai is an algorithm for drawing general undirected graphs. Kamada, Tomihisa and Satoru Kawai. 1989. "An algorithm for drawing general undirected graphs." *Information processing letters* 31, 1.



# WHAT CHARACTERISES A POLITICAL BUZZER?

Very little literature has specifically covered the discourse of political buzzing. As such, to construct our understanding, we draw from the literature of marketing, the practice from which buzzing originates.

Buzz marketing is defined as “the amplification of initial marketing efforts by third parties through their passive or active influence”.<sup>14</sup> Buzzing is seen as an intensified form of word-of-mouth (WOM) marketing.<sup>15</sup> That is, two or more individuals exchange comments and thoughts about a certain product or service,<sup>16</sup> mostly through informal conversation.<sup>17</sup> Firms recruit people – some are paid, while others are volunteers– to go out and actively talk about a brand, a product or a service.<sup>18</sup> Those recruited people are referred to as ‘buzzers’ – the focal actors in the industry.

The aspect of influence as understood by Thomas<sup>19</sup> perhaps finds its root in a study of personal influence by Katz and Lazarsfeld.<sup>20</sup> Their studies found that ‘opinion leaders’ were more influential than mass-media on affecting people’s voting decisions during the 1940 US Presidential Election. Katz and Lazarsfeld argue that being influential highly depends on one’s structural position in a network: individuals may become opinion leaders if they have a strategic position that gives them an advantage for disseminating information and exerting personal influence.<sup>21</sup>

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- 14 Thomas Jr., Greg Metz. 2004. “Building the buzz in the hive mind.” *Journal of Consumer Behaviour: An International Research Review* 4, 1.
  - 15 Carl, Walter J. 2006. “What’s all the buzz about? Everyday communication and the relational basis of word-of-mouth and buzz marketing practices.” *Management Communication Quarterly* 19, 4.
  - Kirby, Justin and Paul Marsden. 2006. *Connected marketing: the viral, buzz and word of mouth revolution*. London: Elsevier.
  - Rosen, Emanuel. 2002. *The anatomy of buzz: How to create word of mouth marketing*. New York: Doubleday.
  - Dye, Renée. 2000. “The buzz on buzz.” *Harvard business review* 78, 6.
  - 16 Arndt, Johan. 1967. “Word of mouth advertising: A review of the literature.” Advertising Research Foundation.
  - 17 Cross, Robert L. and Andrew Parker. 2004. *The hidden power of social networks: Understanding how work really gets done in organizations*. Boston: Harvard Business Press.
  - 18 Kirby, Justin and Paul Marsden. 2006. *Connected marketing: the viral, buzz and word of mouth revolution*.
  - 19 Thomas Jr., Greg Metz. 2004. “Building the buzz in the hive mind.”
  - 20 Katz, Elihu and Paul Lazarsfeld. 1955. *Personal influence*. New Jersey: Transaction Publishers.
  - Keegan, Brendan J., Jennifer Rowley and Jane Tonge. 2017. “Marketing agency–client relationships: towards a research agenda.” *European Journal of Marketing*.
  - 21 Katz, Elihu and Lazarsfeld, Paul. 1955. *Personal influence*.
  - Katz, Elihu. 1957. “The two-step flow of communication: An up-to-date report on an hypothesis.” *Public opinion quarterly* 21, 1.
  - Keegan, Rowley, and Jane Tonge. 2017. “Marketing agency–client relationships: towards a research agenda.”

Burt suggests that opinion leaders are basically brokers who carry information across social boundaries, between groups.<sup>22</sup> Subramani and Rajagopalan attest that they are mere knowledgeable helpers.<sup>23</sup> The emphasis tends to be on the function they perform, and their position in a relational network. They spread influence by giving advice and recommendations, serving as role models, persuading others, or by contagion – a process where ideas or behaviours are spread with neither initiator nor recipient being aware of any intentional attempt at influence.<sup>24</sup> These ways of influencing others then determine the nature to the type of relational network in which the opinion leaders are operating. For example, in a socio-centric network, influence is created by contagion,<sup>25</sup> whereas in an egocentric network, opinion leaders are deemed influential to their followers as they tend to possess a similarity of thought.<sup>26</sup>

In buzz marketing, agencies play a central role.<sup>27</sup> They are the match-makers between the supply and demand for buzzing, and profit from it.<sup>28</sup> They are contacted by the clients and recruit the buzzers,<sup>29</sup> and also design, execute, monitor and evaluate the campaign.

The rapid growth of social media attracted the attention of agencies and buzzers alike. With user-generated content as its lifeblood, social media has to some extent changed the ways we communicate,<sup>30</sup> and the practice of buzz marketing follows suit.<sup>31</sup>

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- 22 Burt, Ronald S. 1999. "The social capital of opinion leaders." *The Annals of the American Academy of Political and Social Science* 566, 1.
- 23 Subramani, Mani R. and Rajagopalan, Balaji. 2003. "Knowledgesharing and influence in online social networks via viral marketing." *Communications of the ACM* 46, 12.
- 24 Weimann, Gabriel. 1994. *The influentials: People who influence people*. New York: State University New York Press.
- 25 Burt, Ronald S. 1987. "Social contagion and innovation: Cohesion versus structural equivalence." *American journal of Sociology* 92, 6.
- 26 McPherson, Miller, Lynn Smith-Lovin, and James M. Cook. 2001. "Birds of a feather: Homophily in social networks." *Annual review of sociology* 27, 1.
- 27 Keegan, Rowley and Jane Tonge. 2017. "Marketing agency-client relationships: towards a research agenda."
- 28 Balter, David and John Butman. 2005. *Grapevine: The new art of word-of-mouth marketing*. New York, NY: Portfolio.
- Dye, Renée. 2000. "The buzz on buzz."
- Godin, Seth and Malcolm Gladwell. 2001. *Unleashing the Ideavirus: Stop Marketing AT People! Turn Your Ideas into Epidemics by Helping Your Customers Do the Marketing Thing for You*. New York: Hachette Books.
- Rosen, Emanuel. 2002. *The anatomy of buzz: How to create word of mouth marketing*.
- 29 Carl, Walter J. 2006. "What's all the buzz about? Everyday communication and the relational basis of word-of-mouth and buzz marketing practices." *Management Communication Quarterly* 19, 4.
- 30 Baruah, Trisha Dowerah. 2012. "Effectiveness of Social Media as a tool of communication and its potential for technology enabled connections: A micro-level study." *International Journal of Scientific and Research Publications* 2, 5.
- 31 Taufique, Khan and Faisal Mohammad Shahriar. 2011. "Online social media as a driver of buzz marketing: Who's riding?" *International Journal of Online Marketing (IJOM)* 1, 2.

Another stakeholder in the political buzzing industry is the politician. Political parties and figures recognise the need to market themselves,<sup>32</sup> and buzzing on social media helps them achieve this goal. Social media platforms offer opportunities for politicians to profile themselves.<sup>33</sup> Twitter, in particular, has been used actively by politicians, candidates and voters alike to generate a lot of buzz.<sup>34</sup>

Before we delve into the discussion, we first need to have a firm understanding of the characteristics of a political buzzer. We found none in the available literature, and so we conducted expert interviews. There are several uptakes from these interviews.

*First*, a buzzer possesses the ability to communicate their messages to their followers. This is important as buzzing requires exchanges of comments and thoughts.<sup>35</sup> Our interviews suggest that most buzzers have a journalistic background and are either bloggers or journalists. It makes them skilful and familiar with the entire process of content production. They also need to have a distinct and unique point of view which makes them stand out from the crowd and be followed by others, as the audience views the buzzers as 'knowledgeable helpers'.<sup>36</sup>

The *second* characteristic is their ability to influence others. Although the majority of our expert interviewees suggest that a buzzer can indeed influence their followers, it is interesting to note that not all of the interviewed experts agree with this. One expert states that buzzers are simply a type of commercial service, actually powerless and with no influence on the audience, merely drawing their attention.<sup>37</sup> This suggests that, recalling Thomas'<sup>38</sup> defini-

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**32** Scammell, Margaret. 1999. "Political marketing: Lessons for political science." *Political studies* 47, 4.

O'Casey, Aron. 1996. "Political marketing and the marketing concept." *European Journal of Marketing* 30, 10/11.

Lock, Andrew and Phill Harris. 1996. "Political marketing-vive la différence!" *European Journal of Marketing* 30, 10/11.

**33** Kruikemeier, Sanne, Guda van Noort, and Rens Vliegthart. 2013. "The relationship between campaigning on Twitter and electoral support: Present or absent." *Conference papers: International Communication Association: Annual Meeting Vol. 2013*.

**34** Murthy, Dhiraj. 2015. "Twitter and elections: are tweets, predictive, reactive, or a form of buzz?" *Information Communication & Society* 18, 7.

**35** Arndt, Johan. 1967. "Word of mouth advertising: A review of the literature."

**36** Subramani, Mani R. and Balaji Rajagopalan. 2003. "Knowledge sharing and influence in online social networks via viral marketing."

**37** Enda Nasution, *Social Media Expert*, interview, 24 February 2017.

**38** Thomas Jr., Greg Metz. 2004. "Building the buzz in the hive mind."

tion, buzzers exert “passive influence”. It differentiates them from ‘influencers’, i.e. trusted individuals with a large social network who “supply the authority that allows a message to be conveyed quickly and reliably through WOM techniques”.<sup>39</sup> As indicated by the term, it is the ‘influencers’ who exercise a more “active influence”.

The *third* characteristic is they are known for having a vast network of social media followers. The attention of a large audience needs to be drawn for a buzz to be created. Otherwise, the logic of buzz marketing to amplify a message, as suggested by Thomas<sup>40</sup>, will likely fail.

Our analyses suggest that a buzzer signifies the characteristics of an ‘opinion leader’. However, given that they are merely exercising passive influence, they are deemed rather as – borrowing from Burt<sup>41</sup> – ‘opinion brokers’, who carry information across social boundaries. It is the ‘influencers’ whose opinions are sought, implying they are the ‘opinion leaders’.

To put it simply, the objective of buzzers is to solely stimulate a buzz, i.e. “contagious talk” about a certain issue.<sup>42</sup> In our specific context, a political buzzer is therefore seen as an individual or an online account with the capability to amplify messages by drawing the netizen’s attention, and create conversations on anything that relates to politics. In the social media realm, being ‘contagious’ means going viral.<sup>43</sup> As such, examining the aspect of virality is key to investigating the practice of buzzing. ■

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<sup>39</sup> Kiss, Christine, and Martin Bichler. 2008. “Identification of influencers – measuring influence in customer networks.” *Decision Support Systems* 46, 1.

<sup>40</sup> Thomas Jr., Greg Metz. 2004. “Building the buzz in the hive mind.”

<sup>41</sup> Burt, Ronald S. 1999. “The social capital of opinion leaders.”

<sup>42</sup> Carl, Walter J. 2006. “What’s all the buzz about? Everyday communication and the relational basis of word-of-mouth and buzz marketing practices.” *Management Communication Quarterly* 19, 4.

<sup>43</sup> Berger, Jonah. 2016. *Contagious: Why things catch on*. New York: Simon and Schuster

# LOOKING INTO THE CASES OF VIRAL TWEETS

The industry of political buzzing has further complicated social media governance. This section explores the actors behind the industry of political buzzing, examines their buzzing strategies and investigates the virality of a message.

## 1. The Context

Indonesia is an archipelagic country located in South-East Asia, inhabited by over 260 million people spread across 17,000 islands. In 2019, its GDP was around US\$ 1 trillion, making it the 16th largest economy in the world.<sup>44</sup> There were 175.4 million internet users in Indonesia by January 2020, of which 160 million are social media users.<sup>45</sup> Economic activities mostly take place in the island of Java, particularly in Jakarta – the capital of Indonesia.

Indonesia has had a multi-party political system since 1999, with 9 parties represented in national and regional legislatures and 11 additional parties only represented in regional legislatures. These parties and political figures indeed use the media – both conventional and digital – for political communication, but regulations and the state capacity to govern the practice are not well integrated.

There are three laws related to our discussion. One, there is the General Election Committee Regulation no. 23/2018 on electoral campaigns, including the use of social media during campaigns. Two, with regard to advertisements, there is the Indonesian Broadcast Law no. 32/2002 supported by the Indonesian Code of Ethics for Advertisers. However, advertising for politics is not specifically mentioned here. Three, one law governs the use of the Internet, i.e. the Indonesian Law for Electronic Information and Transaction no. 11/2008. Again, the issue of social media governance is not specifically addressed. There is thus a clear lack of integrated regulatory frameworks for social media governance.

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<sup>44</sup> World Bank. 2020. “Indonesia – Data.” (<https://data.worldbank.org/country/indonesia>).

<sup>45</sup> Datareportal, 2020. “Digital 2020: Indonesia.” (<https://datareportal.com/reports/digital-2020-indonesia>).

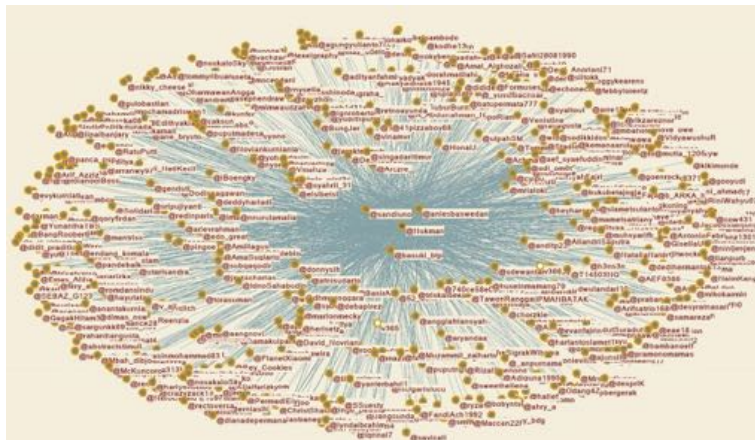
In terms of state capacity, there is the Indonesian Election Supervisory Board which supervises the conduct of elections, including the practices of political parties. However, the Board only operates during electoral seasons. Anything that happens outside the electoral season is practically under-supervised.

## 2. Characterising the Network

Making a message or tweet go viral is crucial for online influencers and buzzers alike. Investigating the virality of a message could shed light on the strategy undertaken by influencers to create a viral message and the characters of the network. Here, we examine viral tweets from two influencers during the 2017 Jakarta gubernatorial Election date.

Within a day (19 April 2017), Nukman produced nine tweets, triggering a total of 511 responses (488 retweets, 12 replies, 11 mentions) from 505 accounts.

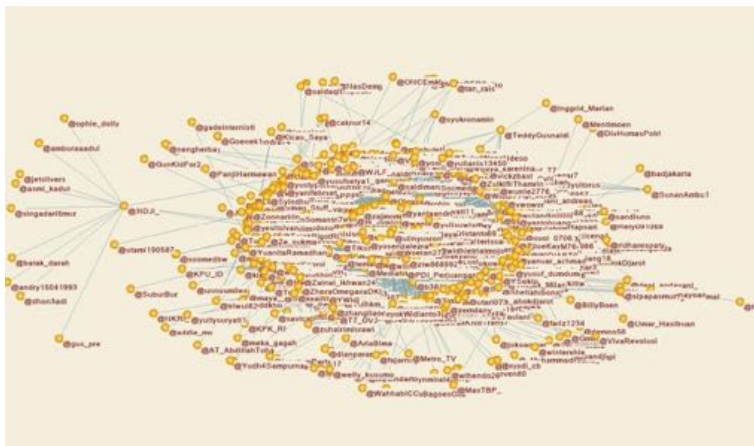
**Figure 1: The Network of @nukman, 19 April 2017.**  
**Network Measures: N=505; d=0.01248505; 4-core.**



Source: Camil et al (2017)

Illustrated in Figure 1, Nukman's network demonstrates a strong egocentric pattern with limited interaction between nodes. Nukman himself had become the primary core and remained the core source of information. Every interaction in the network had a direct connection to Nukman without any discussion among users. It represents a two-step flow of information in which an opinion leader spreads information from the media to a wider population.<sup>46</sup>

**Figure 2: The Network of @ulinyusron, 19 April 2017.  
Network Measures: N=1,255; d=0.00366597; 8-core.**



Source: Camil et al (2017)

On the same day (19 April 2017), Ulin Yusron produced 14 tweets via Twitter with the highest response tweet (331 retweets and 120 likes) attached with photos and text. In one day, the interaction generated by Ulin successfully invited a total of 1,584 responses (1,411 retweets, 131 replies, and 42 mentions) from 1,255 accounts.

Depicted in Figure 2, Ulin's network shows heterogeneous interactions with reactions from its audience ranging from agreement to strong disagreement toward the message. This creates a socio-centric network which represents a high intensity of message/

<sup>46</sup> Katz, Elihu. 1957. "The two-step flow of communication: An up-to-date report on an hypothesis." *Public opinion quarterly* 21, 1.




content distribution across a network. Borrowing the idea of Burt (1987), this socio-centric network shows a contagion process, which generates adoption behaviour within groups. This interaction and network structure affects the concentration of power as people begin to argue and address the content. It means that he has the ability to spread word about the issue, and likewise, spread information, access new ideas, and trigger discussion. The key characteristic of this network is the influencer's ability to create a discourse by becoming the centre of the issues' polarity as well as an important hub in the network.

### 3. How the Tweets Went Viral

We also examine the tweets from both influencers that went viral, i.e. tweets receiving the highest responses.

**Figure 3: Tweet from @nukman That Earned the Highest Responses on 19 April 2017**

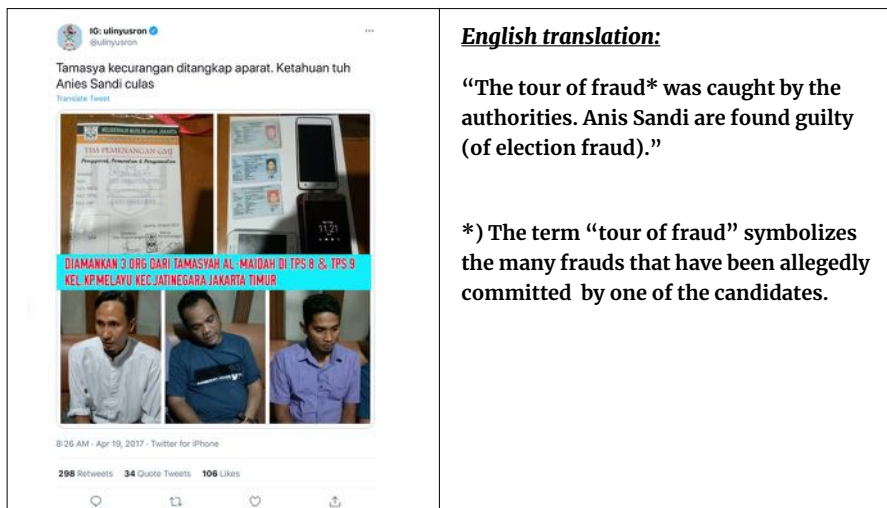
	<p><b><u>English translation:</u></b></p> <p>“Salute to @basuki_btp. A 70% satisfaction level is an extraordinary achievement. Hopefully it becomes an encouragement for @aniesbaswedan and @sandiuno.”</p>
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Source: Camil et al (2017)

In a tweet from Nukman (depicted in Figure 3) that earned the highest responses, he strategically embeds an online news link on which he based his opinion and mentions three Twitter accounts that belong to the competing candidates. His tweet has a positive tone, appreciating the late governor (@basuki\_btp), while encouraging the newly elected candidates to work.



**Figure 4: Tweet from @ulinyusron That Earned the Highest Responses on 19 April 2017**



Source: Camil et al (2017)

On the other hand, Ulin’s tweet with the highest response (illustrated in Figure 4) attached a photo collage and a text “Three people were arrested from Al-Majdah tour (of cheat/fraud) at polling station 8 and 9 in Kampung Melayu, Jatinegara, East Jakarta”. This provocative tweet triggered other accounts to express their opinions. Ulin became the centre of issues polarity and one of the most primary hubs of all. In Ulin’s network, people were still concentrated to him, but they also engaged with other accounts.

From these two instances, we learn that there are numerous ways to make a tweet go viral, an important method of creating a buzz on Twitter. Considering its importance, we explore the different strategies of making tweets viral in the following section.

## 4. The Strategies of Political Buzzers

With the increasing users and conversations on social media, political buzzers need to strategise so as to generate a buzz. As one of our interviewees reveals,

□□ *The intention is indeed to draw people's attention by making noise. The noise is like a lure, when noise is huge, people get curious, 'What is this sudden noise?' They click and see, 'Oh, it's about this [issue].' So, the primary function of buzzer is to create noise, a lot.*<sup>47</sup>

A buzzer's success is often measured by making a certain issue a trending topic, as it means they reach a wider audience<sup>48</sup> and people begin talking about it,<sup>49</sup> thereby implying that a buzz is happening. This study finds that buzzers employ three key strategies.

First, a unique hashtag (#) is created with a catchy phrase designed to deliver the message. A team of buzzers usually agrees upon the hashtag then tweets it at the same time according to the schedule. An organised deployment speeds up the hashtag to become a trending topic. Hashtags are used as a means to coordinate a distributed discussion, as suggested by Bruns and Burgess.<sup>50</sup>

Second, a buzzer often embeds a link or a screenshot from a news portal to make his/her tweets look credible – thus, more convincing.<sup>51</sup> Some even go further by creating a fake news portal and linking click-bait, which are common practices for spreading misinformation on Twitter.<sup>52</sup> Messaging applications help spread provocative content easily. Buzzers usually join several chat groups, each with hundreds of members, and circulate the content from their own circles.

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<sup>47</sup> Edo, Buzzer, interview, 22 February 2017.

<sup>48</sup> Chang, Hsia-Ching. 2010. "A new perspective on Twitter hashtag use: Diffusion of innovation theory." *Proceedings of the American Society for Information Science and Technology* 47, 1.

<sup>49</sup> Arndt, Johan. 1967. "Word of mouth advertising: A review of the literature."

<sup>50</sup> Bruns, Axel and Jean E. Burgess. 2011. "The use of Twitter hashtags in the formation of ad hoc publics." *Proceedings of the 6th European consortium for political research (ECPR) general conference 2011*.

<sup>51</sup> Gupta, Aditi and Ponnuramam Kumaraguru. 2012. "Credibility ranking of tweets during high impact events." *Proceedings of the 1st workshop on privacy and security in online social media*, Volume April.

<sup>52</sup> Shao, Chengcheng et al. 2017. "The spread of fake news by social bots." *Indiana University*. ([https://www.researchgate.net/publication/318671211\\_The\\_spread\\_of\\_fake\\_news\\_by\\_social\\_bots](https://www.researchgate.net/publication/318671211_The_spread_of_fake_news_by_social_bots)).

Finally, buzzers may create conversation by splitting the team into two opposing groups. Each group then develops the content accordingly, agreeing upon a specific hashtag and tweeting schedule. These groups – which actually belong to the same buzzing team working for the same agency and client – will then initiate a discussion or start a Twitter war about the issue. Such a strategy can provoke curious netizens to get involved, as the issue receives wider attention. As suggested by many scholars<sup>53</sup>, these conversations serve as the basis for a buzz to happen.

The above-mentioned strategies ride on a Twitter algorithm, as suggested by Lotan<sup>54</sup>, that favours a sharp spike rather than gradual sustained growth. This means that for a topic to become a trend, it has to be popular – a lot of people tweeting about it in a short period of time. It can be a new topic that has never been popular before, or a recurring topic that is picked up by a new group of people. So the abovementioned effective strategies revolve around increasing the reach of the message – in other words, making the message viral.

## 5. The Actors Within the Industry of Political Buzzing

The preceding section demonstrates that for buzzers to succeed, they cannot operate on their own. While buzzers are on the front line, there are other important actors that carry out the work of the industry. Social media governance requires in-depth insights about the actors involved in the industry.

In the buzzing industry, as depicted in Figure 5, there are three actors. Clients procure the buzzing service through a marketing agency, who then hire buzzers to carry out the required tasks. This section will elaborate on each of these actors.

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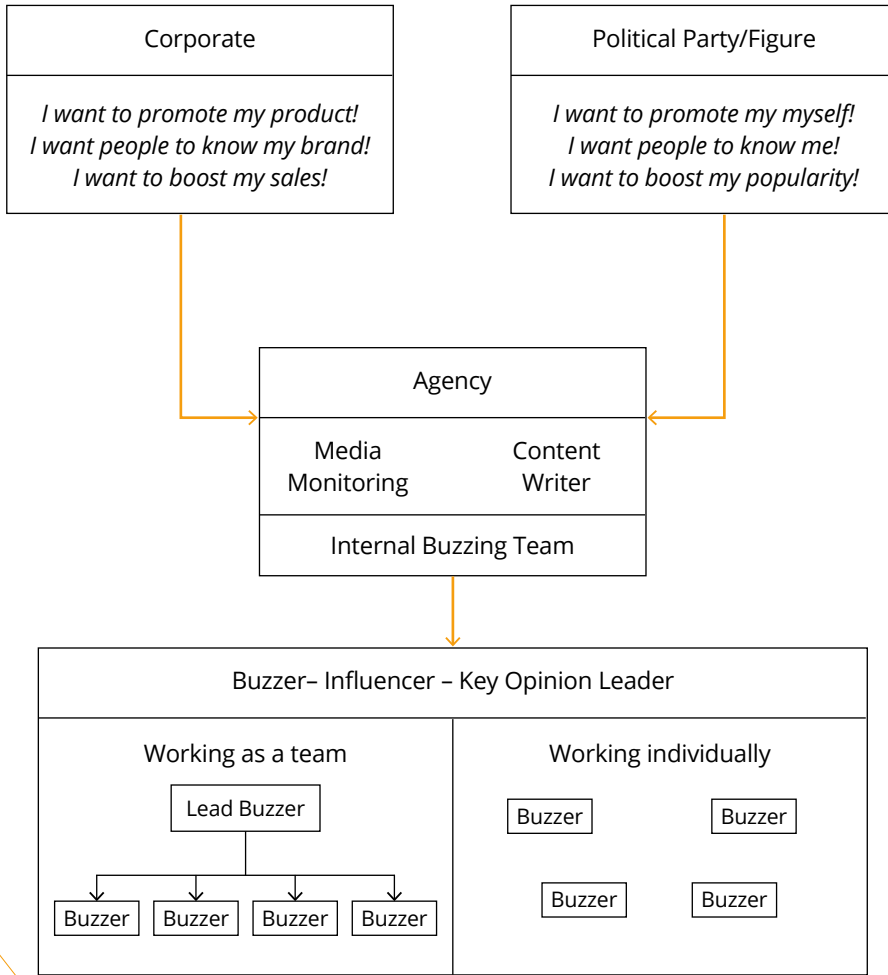
<sup>53</sup> Carl, Walter J. 2006. "What's all the buzz about? Everyday communication and the relational basis of word-of-mouth and buzz marketing practices." Cross, Robert L. and Andrew Parker. 2004. *The hidden power of social networks: Understanding how work really gets done in organizations.* Arndt, Johan. 1967. "Word of mouth advertising: A review of the literature."

<sup>54</sup> Lotan, Gilad. 2015. "#FreddieGray – is not trending on Twitter?" Medium, 24 April. (<https://medium.com/i-data/freddiegray-is-not-trending-on-twitter-9e4550607a39>).

**Figure 5: Workflow in the Commercial Buzzing Industry**

**Workflow in the Buzzing Industry**

→ Flow of money



Source: Camil et al (2017)

## 5.1 The Clients: Political Parties and Figures

In the industry of political buzzing, the politicians act as the clients.

□□ ... Politics enter that field because a number of researches tell that social media conversation and positive sentiment determine someone's electability. That's why we see the emergence of agencies undertaking social media surveys, such as Sentigram and Politicawave. This ecosystem has pushed political entities to use buzzers. Buzzer that was previously used to promote products, now has moved to politics.<sup>55</sup>

As implied in the above interview, buzzing is a way to market the politicians' image and to make their programmes known to the public.<sup>56</sup> As illustrated in Figure 5, politicians contact and pay marketing agencies for buzzing services. We, however, did not interview any political actors for this study. Therefore, many areas, including how and when they procure the buzzing service, or the evaluative mechanisms they use need to be explored further from their perspective.

## 5.2 The Agency: A Mediating Actor

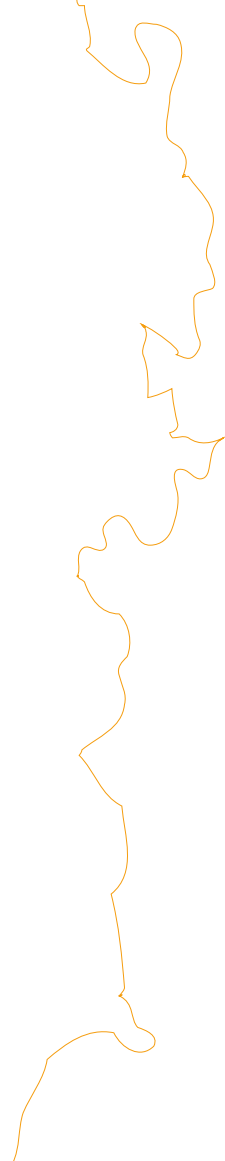
Another actor in the political buzzing industry is the marketing agency. As implied in Figure 5, agencies act as intermediaries between politicians and buzzers.<sup>57</sup> They are responsible for buzzer recruitment, content strategy, and execution. Their main purpose is to market the image of the politician.

One crucial step undertaken by the agency is to match the influencers and the issue. In the realm of Twitter, the agency does this by carefully looking into the timeline history. Frequently, the agency acquires assistance from buzzer scouts or head-hunters who specialise in mapping buzzers/influencers. The characteristics of the clients and their target audience affect the choice of social media to be used as the buzzing platform.

<sup>55</sup> Ujo, Buzzer-Online Influencer, interview, 27 March 2017.

<sup>56</sup> Scammel, Margaret. 1999. "Political marketing: Lessons for political science." O'Casey, Aron. 1996. "Political marketing and the marketing concept."

<sup>57</sup> Confirming, among others Balter, David and John Butman. 2005. *Grapevine: The new art of word-of-mouth marketing*; Dye, Renee. 2000. "The buzz on buzz."; Godin, Seth and Malcolm Gladwell. 2001. *Unleashing the Ideavirus*.



Our study further reveals that not all of the agencies operate legally. There are some agencies who work 'under the shadow', and are often linked with negative or black campaigns. These agencies work to improve and maintain their client's image by constantly defaming their clients' competitors.<sup>58</sup> They are able to recruit massive numbers of voluntary buzzers. Messaging applications play a central role in the recruitment and coordination process. The agencies create chat groups for these purposes, consisting of individuals who are willing to quickly engage in discussion and in spreading the issue. In order to build discourse and draw the public's attention, the agencies often create an online news portal. They recruit individuals to write articles, often with bombastic titles as click bait. One of our interviewees shares this basic process of hoax production.

*□□ The package might include creating fake online media, along with numbers of accounts to spread the content from that fake online media. Short information, teasers are spread through social media accounts, but the longer information is provided on the web, it appears like coming from a reputable online media..."<sup>59</sup>*

The abovementioned instances are evidence that a blueprint of regulation for social media governance cannot but address the crucial role of marketing agencies in the industry of political buzzing.

### **5.3 The Buzzers: How They Came About**

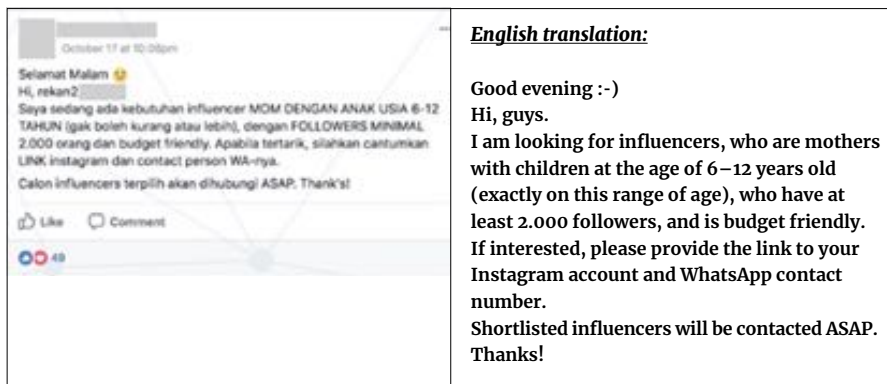
The other actors are the buzzers themselves. A buzzer is enlisted through open recruitment and scouting. For the first, the agency representatives announce the need for buzzers/influencers with specific criteria (Figure 6 illustrates an example of the announcement).

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<sup>58</sup> Rahman, Media Consultant, interview, 9 March 2017.

<sup>59</sup> Yogi, Media Consultant, interview, 16 March 2017.

**Figure 6: A Facebook Post in a Closed Group (17/10/2017)  
Announcing the Need for Influencer Mom**



Source: Camil et al (2017)

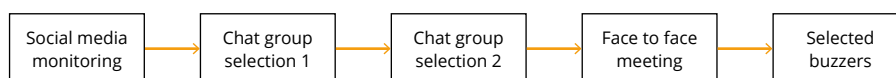
In terms of scouting, a direct approach and tiered selection are common practices to recruit political buzzers. A marketing agency might directly approach a buzzer, as explained by one of our interviewees below.

*□□ Usually, the agency or the (candidate's/party's) communication team contacts me. They give me the concept, then we discuss the range of services, the payment, and the time period. I execute that concept in various tweets in a certain period of time based on what we have agreed. That's all. I set my rate, for them to see how much I want to be paid to do this [service]."<sup>60</sup>*

Agencies also recruit large numbers of political buzzers through tiered selections. In such a process, the agency monitors social media accounts that have actively retweeted, shared, and liked certain issues. Those active accounts are then admitted to a chat group. As the process moves along, individuals who quickly engage in the discussion and spread the issue are then admitted to another chat group and eventually get invited to meet the 'lead buzzer' (Figure 7

illustrates the process). A lead buzzer is responsible for coordinating a team of fellow buzzers during a certain campaign. Even though it is not a formally assigned role, only seasoned buzzers occupy such a position, thus receiving higher payment.

**Figure 7: The Political Buzzers Tiered Selection**



*Source: Camil et al (2017)*

This understanding of how a buzzer comes about sheds a light on some of the critical issues of political buzzers as a profession. In Indonesia, political buzzing is yet to be acknowledged as a legitimate profession, thus complicating its accountability.

Our findings and analysis are evidence that the industry of political buzzing has formed a complex and rich ecosystem. These accounts also display the complexity involved in social media governance. Nevertheless, efforts to govern social media should be carried out promptly, before the growth of the industry increases the entanglements. ■



# CONCLUSIONS AND RECOMMENDATIONS

Many experts and the civil society have expressed their apprehensions about how political buzzers have deteriorated the quality of public debate. Indonesian society has experienced how political buzzers can leverage the convenience of social media to disseminate their propaganda. This phenomenon further adds to the complexity of social media governance.

The efforts to govern social media, specifically in the context of political buzzing, can happen on multiple dimensions. Our findings have shed light on at least three aspects of this. *First*, a regulatory framework is perhaps the primary aspect to be addressed. For this, regulators must have a firm definition of what characterises a buzzer.

Understanding other actors involved in the industry is crucial to discern their roles in it, and thus to govern them. Ethics directives must also be imposed to safeguard the public. Having in-depth insights into the strategies enacted by political buzzers would help to rectify the practice. Our findings particularly reveal that some political buzzers went to the extent of creating fake news portals in order to convince the public of their claims. Regulators should therefore also address the issues of eradicating hoaxes and misinformation.

The analysis of the virality of a message can be employed to understand how influential a buzzer's account is, and its role in the network. Authorities could map the key accounts associated with certain political party, figure or campaign. This could in turn offer useful insights for investigations into cases of black campaigns and the spreading of hoaxes and misinformation.

The *second* effort concerns improving state capacity. When the regulations are in place, there should be an assigned authority to enforce the laws, within and outside the electoral seasons. The need to have a state board to supervise the conduct of political parties, including their use of political buzzers, is imperative to have as part of the social media governance.

*Lastly*, as our findings reveal that political buzzers go to the extent of creating hoaxes and misinformation to convince the audience, the issue of social media literacy<sup>61</sup> is of concern here. Awareness of hoaxes needs to be improved, particularly for social media users. That way, they will have better judgment while deciding which claims are based on true evidence and which are not, thus limiting the spread of false information and news.

These findings highlight the importance of social media governance, particularly in the context of curbing political buzzers. Experts, civil societies, and members of the public alike should be summoned to work along with the authorities for this task. This is, at the very least, necessary to halt the deterioration of public debate. ■

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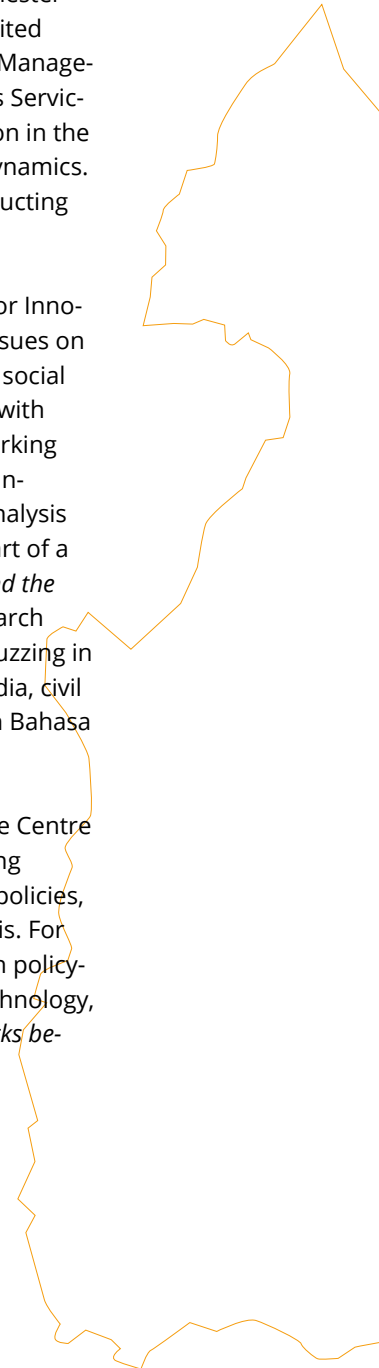
<sup>61</sup> Or 'information literacy', as suggested by Jones Jones-Jang, S. Mo, Tara Mortensen, and Jingjing Liu. 2019. "Does media literacy help identification of fake news? Information literacy helps, but other literacies don't." *American Behavioral Scientist*.

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*hind the Buzz: Unravelling the Industry of Noise in Indonesia* – one of the pioneer studies on political buzzing in Indonesia which received extensive attention from the media, civil society and members of the public alike (Research report in Bahasa Indonesia is available at <https://cipg.or.id/buzzer/>).

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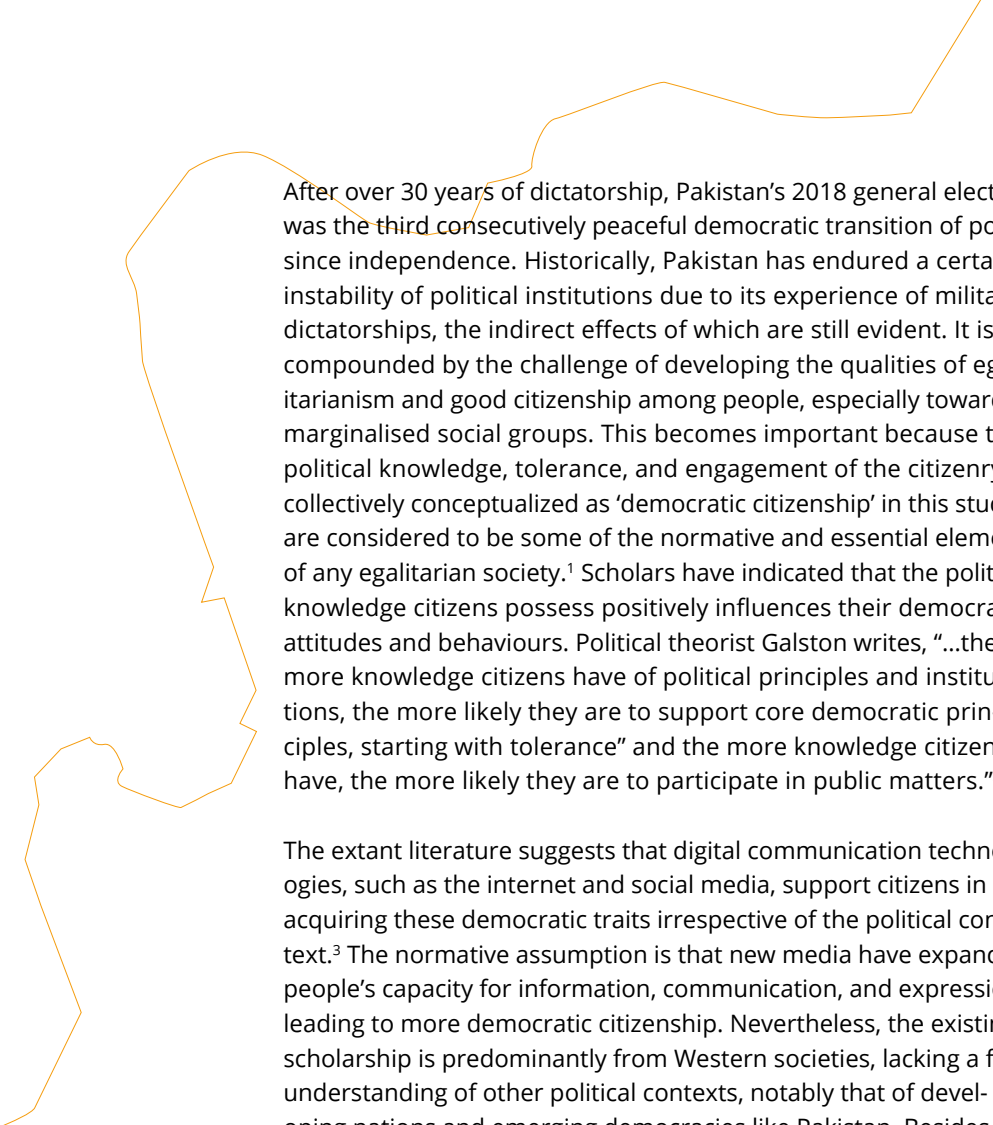
**DIGITAL DIVIDE  
AND DEMOCRATIC  
CITIZENSHIP:  
A TALE OF TWO  
VALLEYS IN THE  
WESTERN  
HIMALAYAS**

Muhammad Masood

# KEY TAKEAWAYS

- This study attempts to answer the question: Does the digital divide in Pakistan affect values connected to democratic citizenship, such as knowledge, tolerance, and engagement between Muslim and minority religious communities.
- The study compares two valleys in the region of Gilgit-Baltistan, one which lacks internet access of any kind, and the other with internet connectivity.
- Through interviews with local residents from both valleys, the study explores residents' knowledge and awareness of major issues pertaining to religious minorities in Pakistan and provides a qualitative and comparative understanding of the relationship.
- Data suggests Muslim locals who have access to the Internet and who use social media are more knowledgeable and willing to engage in protests in support of religious minorities than their counterparts who do not.
- Digital platforms work as alternative media, differing from Pakistani mainstream media in terms of content and dissemination, by providing alternative perspectives on socio-political issues.
- Findings from this study suggest that these values of democratic citizenship could be enhanced through improving access to internet infrastructure, initiating digital media literacy programmes, online inter-faith harmony campaigns, and, most importantly, monitoring the digital public sphere to reduce polarisation between different religious groups.
- This preliminary study of two valleys situated in a relatively unique socio-economic context suggests further research on digital divide and attitudes of the majority group towards marginal social groups.





After over 30 years of dictatorship, Pakistan's 2018 general election was the third consecutively peaceful democratic transition of power since independence. Historically, Pakistan has endured a certain instability of political institutions due to its experience of military dictatorships, the indirect effects of which are still evident. It is compounded by the challenge of developing the qualities of egalitarianism and good citizenship among people, especially towards marginalised social groups. This becomes important because the political knowledge, tolerance, and engagement of the citizenry, collectively conceptualized as 'democratic citizenship' in this study, are considered to be some of the normative and essential elements of any egalitarian society.<sup>1</sup> Scholars have indicated that the political knowledge citizens possess positively influences their democratic attitudes and behaviours. Political theorist Galston writes, "...the more knowledge citizens have of political principles and institutions, the more likely they are to support core democratic principles, starting with tolerance" and the more knowledge citizens have, the more likely they are to participate in public matters."<sup>2</sup>

The extant literature suggests that digital communication technologies, such as the internet and social media, support citizens in acquiring these democratic traits irrespective of the political context.<sup>3</sup> The normative assumption is that new media have expanded people's capacity for information, communication, and expression, leading to more democratic citizenship. Nevertheless, the existing scholarship is predominantly from Western societies, lacking a full understanding of other political contexts, notably that of developing nations and emerging democracies like Pakistan. Besides, previous studies have rarely focused on how new media changes its users' democratic citizenship vis-a-vis minority groups in their communities. ■

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# THE STATE OF RELIGIOUS MINORITIES IN PAKISTAN

Pakistan was founded in August 1947 based on the critical narrative that minority Muslims in the Indian subcontinent should acquire an independent state to protect their fundamental rights.<sup>4</sup> Today, there are several non-Muslim minority groups in Pakistan, and the failure to fully protect them has been challenging the country's underlying ideology.<sup>5</sup> According to the 2017 census, a little less than 5% of Pakistan's population is non-Muslim. Hindu (1.8%) and Christian (1.6%) communities are the two dominant groups within the minorities. Since the new government took office in July 2018, at least 31 deaths, 58 injuries, seven attacks on places of worship, and 25 blasphemy cases against religious minorities have been reported.<sup>6</sup> On the other side, the Constitution of Pakistan safeguards the rights of minorities by protecting their interests and representing them in national and provincial assemblies on reserved seats. However, the constitutional protections and institutional representations do not always align with the opinions and actions of citizens. It is hoped that through the use of digital media, Pakistani citizens could get better acquainted with religious minorities, which could potentially lead to a positive change in attitudes and behaviours. Thus, this paper seeks to explore the impact of the internet and social media on democratic citizenship (i.e., knowledge, tolerance and engagement) of the Pakistani Muslim majority regarding non-Muslim minorities. ■

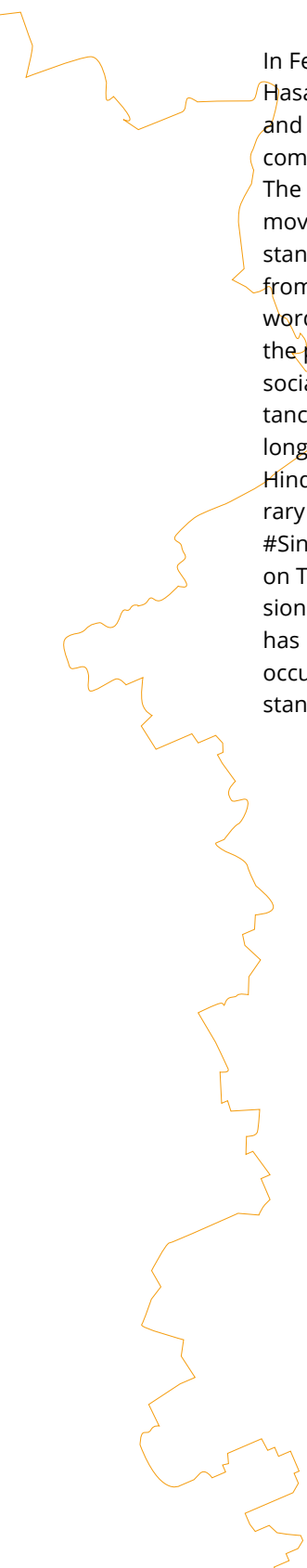
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5 Fuchs, Maria-Magdalena, and Simon Wolfgang Fuchs. 2020. "Religious Minorities in Pakistan: Identities, Citizenship and Social Belonging." *South Asia: Journal of South Asian Studies* 43, 1: 52–67; [freedomhouse.org](https://freedomhouse.org). 2020. "Pakistan." (<https://freedomhouse.org/country/pakistan/freedom-world/2019>); and US Department of State. 2017. "2017 Report on International Religious Freedom: Pakistan." (<https://www.state.gov/reports/2017-report-on-international-religious-freedom/pakistan/>).

6 Mirzahe, Jaffer, A. 2020. "Religious Minorities in 'Naya Pakistan'." *The Diplomat*, 16 March. (<https://thediplomat.com/2020/03/religious-minorities-in-naya-pakistan/>).

# THE RISE OF CIVIL SOCIETY IN PAKISTAN



In February 2019, the provincial information minister Fayyaz-ul-Hasan Chohan was swiftly removed after making controversial and derogatory remarks against Hindus in the wake of a recent air combat engagement between the Pakistani and Indian militaries. The decision to dismiss the minister was taken following an online movement against him instigated by Kapil Dev, a high-profile Pakistani Hindu activist, whose tweets went viral.<sup>7</sup> Civil society activists from across the country condemned the minister for using the words 'Hindu' and 'India' interchangeably.<sup>8</sup> The forced removal of the provincial minister shows the influential and emerging role of social media in mobilising the public on issues of national importance, having a positive influence on Pakistani democracy in the long term. This event was one of the notable cases linked to the Hindu community and general citizen engagement in contemporary Pakistan. The civil society recently also contributed to making #SindhRejectsForcedConversion one of the most tweeted hashtags on Twitter in Pakistan.<sup>9</sup> To give some context, the forced conversion of underage girls from religious minorities by extremist goons has been a critical issue in Sindh province.<sup>10</sup> When some new cases occurred in June 2020, the hashtag was seen trending across Pakistani social media networks.

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7 Schaflechner, Jürgen. 2020. "Betwixt and Between: Hindu Identity in Pakistan and 'Wary and Aware' Public Performances." *South Asia: Journal of South Asian Studies* 43, 1: 152–168.

8 Schaflechner, Jürgen. 2020. 167.

9 Shahid K, K. 2020. "#SindhRejectsForcedConversions trends as minority girls continue to be targeted." *Pakistan Today*, 9 June. (<https://www.pakistantoday.com.pk/2020/06/09/sindhrejectsforcedconversions-trends-as-minority-girls-continue-to-be-targeted/>).

10 Ackerman, Reuben. 2018. "Forced Conversions & Forced Marriages In Sindh, Pakistan." *University of Birmingham*. (<https://www.birmingham.ac.uk/Documents/college-artslaw/ptr/ciforb/Forced-Conversions-and-Forced-Marriages-in-Sindh.pdf>); Jahangir, Sulema. 2020. "Forced conversions." *Dawn*, 12 April. (<https://www.dawn.com/news/1548550/>).

**Figure 1: A Hindu Activist Shared a Screenshot of the Hashtag Thanking Progressive Muslims.<sup>11</sup>**



Furthermore, Pakistan sent a positive message to the world by opening the Kartarpur Corridor, which connects Pakistan with India, allowing Sikh devotees from the neighbouring country to visit the *Gurdwara Darbar Sahib* without a visa. *Gurdwara Darbar Sahib* is the shrine of *Guru Nanak*, the founder of Sikhism. It is located in the Punjab province of Pakistan and is one of the holiest sites for the Sikh community in the world. News related to the opening ceremony circulated widely on mainstream media and social media, indirectly educating Muslim Pakistanis about members of other religions in the country. Moreover, this project was collectively supported by politicians. Another example of politicians endorsing interreligious tolerance on social media is Prime Minister Imran Khan's series of posts regarding the Kartarpur Corridor.<sup>12</sup> As a result, Pakistanis are increasingly accepting and aware of the existence and grievances of the millions of people from religious minorities in their country.

<sup>11</sup> Maheshwari, Bheish Kumar. 2020. "Twitter / @iambheishk: Thank you comrades..." Twitter, 6 June ([https://twitter.com/search?q=%40iambheishk%20progressive%20Muslim&src=typed\\_query](https://twitter.com/search?q=%40iambheishk%20progressive%20Muslim&src=typed_query)).

<sup>12</sup> Khan, Imran Official. 2020. "Facebook / @ImranKhanOfficial: Islam preaches peace..." Facebook, 6 June (<https://www.facebook.com/ImranKhanOfficial/photos/a.149165218459240/4022759264433130>).

Likewise, the recent federal government land allocation and approval for constructing the first temple for the Hindu community in Islamabad is a promising step. Although extremists spread hate speech against Hindus and vandalised the initial construction, online discourse supporting the temple's construction and religious minorities' rights was also notably visible, as were offline protests in favour of the temple's construction by civil society in the capital.<sup>13</sup> In conclusion, the internet and social media have enabled Pakistani civil society members to directly acquire information, communicate, and express their opinions about events related to Pakistani religious minorities; also, to translate their online pro-minority behaviours into offline actions.<sup>14</sup> ■

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**13** *Abi-Habib, Maria.* 2020. "Islamists Block Construction of First Hindu Temple in Islamabad." *The New York Times*, 8 July. (<https://www.nytimes.com/2020/07/08/world/asia/hindu-temple-islamabad-islamists-pakistan.html>).

**14** *Masood, Muhammad.* 2020. "Construction of blurred social boundaries on Twitter: Discourse analysis of #JusticeForNimrita movement in Pakistan." *103<sup>rd</sup> Annual Association for Education in Journalism and Mass Communication (AEJMC 2020)-Virtual Conference*.



# THE PAKISTANI DIGITAL LANDSCAPE

In recent years, digital media penetration in Pakistan has been growing significantly. According to the Pakistan Telecommunication Authority, as of August 2020, there are 85 million 3G/4G subscribers (40% penetration) and 169 million cellular connections (80% penetration).<sup>15</sup> There are also more than 37 million active social media users.<sup>16</sup> Facebook is the most popular social networking site, and WhatsApp is the most popular instant messaging application.<sup>17</sup> In 2020, there was an increase of 17% of internet subscribers, 6.2% of mobile connections, and 7% of active social media users compared to the previous year.<sup>18</sup> This number could grow exponentially as the state has recently launched the “Digital Pakistan” initiative to expand digital connectivity.<sup>19</sup> However, the digital divide still exists on a large scale, especially in the digitally unconnected rural areas where close to two-thirds (64%) of the population resides.<sup>20</sup> The digital divide is not only between urban and rural areas but also exists between gender and generation in the male-dominant and young population of Pakistan.<sup>21</sup> Currently, the significant majority of social media users are between 18–34 years old (75%) and male (79%).<sup>22</sup> These users are likely to have high socioeconomic status and to be from urban areas.

The growth in internet usage demonstrates the potential for digital democracy in Pakistan. Digital democracy includes public administration via digital apps, online deliberation on civic issues, mediated contact with politicians, and many other such possibilities. However, among the socio-political challenges mentioned in the introduction section, interreligious relations in Pakistan attract news media attention worldwide. Nevertheless, there has been little or no

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<sup>15</sup> Pakistan Telecommunication Authority. 2020. “Telecom Indicators.” (<https://www.pta.gov.pk/en/telecom-indicators>).

<sup>16</sup> Datareportal. 2020. “Digital 2020: Global Digital Overview.” (<https://datareportal.com/reports/digital-2020-global-digital-overview>).

<sup>17</sup> Datareportal. 2020. “Digital 2020: Global Digital Overview.”

<sup>18</sup> Datareportal. 2020. “Digital 2020: Global Digital Overview.”

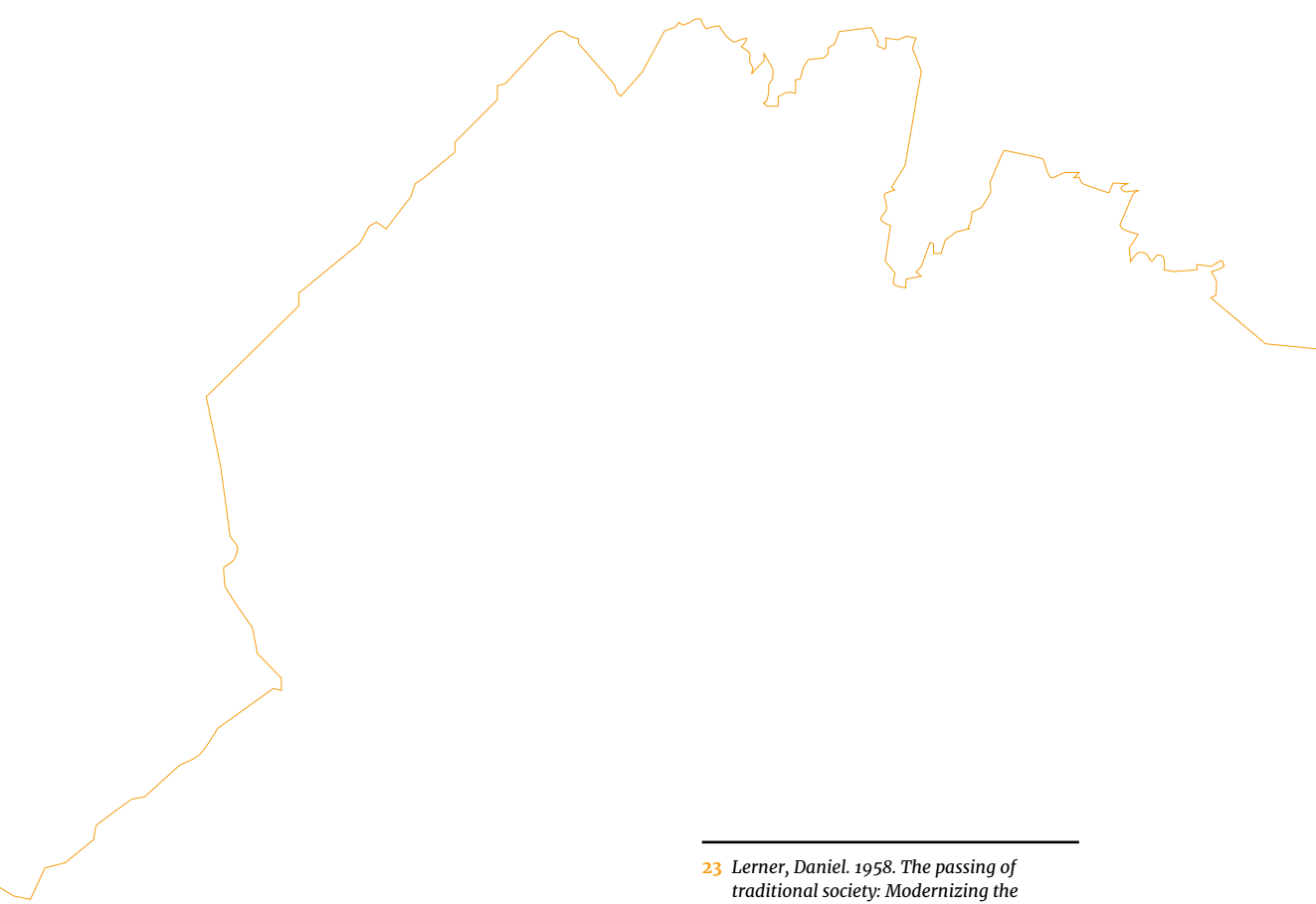
<sup>19</sup> News Desk. 2019. “PM Imran launches ‘Digital Pakistan’ initiative.” *The Express Tribune*, 5 December. (<https://tribune.com.pk/story/2112360/8-digital-pakistan-pm-imran-addresses-launch-ceremony/>).

<sup>20</sup> Pakistan Bureau of Statistics. 2017. “District Wise Census Results Census 2017.” (<http://www.pbs.gov.pk/content/provisional-summary-results-6th-population-and-housing-census-2017-0>).

<sup>21</sup> Datareportal. 2020. “Digital 2020: Global Digital Overview.”

<sup>22</sup> Datareportal. 2020. “Digital 2020: Global Digital Overview.”

study exploring the association between the growing popularity of digital media and evolving relationships between religions. Hence, it is an opportune moment to investigate whether the internet and social media platforms can promote democratic citizenship – defined for the purposes of this study as knowledge, tolerance, and the engagement levels of people with respect to marginalised social groups. In the past, traditional media has played a role in modernising different parts of the world, and in the present, digital media could play the role of democratisation.<sup>23</sup> This paper examines the (un)democratic citizenship impact of the digital divide in two remote adjacent valleys of Pakistan to investigate these normative assumptions. ■



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<sup>23</sup> Lerner, Daniel. 1958. *The passing of traditional society: Modernizing the Middle East*. Glencoe: The Free Press.; and Michaelsen, Marcus. 2011. *New media vs. old politics. The Internet, social media, and Democratisation in Pakistan*. Berlin: Friedrich-Ebert-Stiftung.

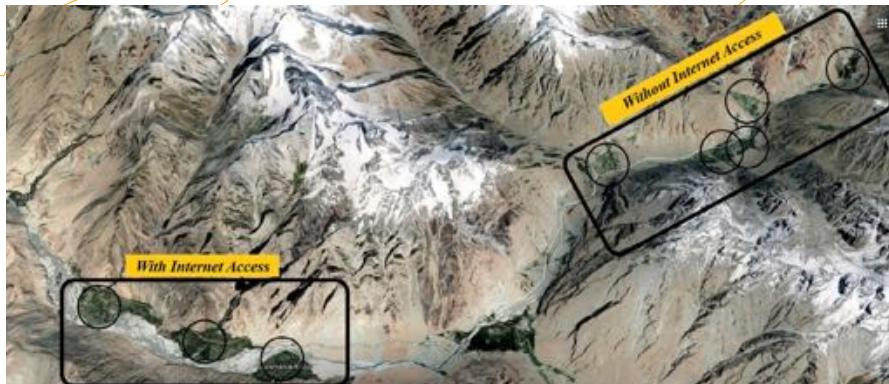
# STUDY CONTEXT

The two valleys in the study are comprised entirely of Muslim residents and located in Gilgit-Baltistan – the region also known as the Western Himalayas of Pakistan. Only one valley has an internet connection, but both valleys have access to satellite television and radio services.

I explore whether local people from a valley with internet access show more knowledge, tolerance, and willingness to engage with issues concerning Hindu and Christian religious minorities in Pakistan compared to their counterparts. In general, locals can only know about other faiths via media or opinion leaders, such as clerics. Face-to-face contact and learning opportunities with members of other religions are not readily available unless people from outside the region travel to the valleys for tourism or business purposes. Both valleys are culturally similar but socioeconomically slightly different. In other words, the populations of both valleys speak the same language, follow the same faith (but different denominations; both populations have Shia and Noorbakhshia Muslims), and have similar cultural characteristics due to their geographical proximity (a distance of approximately 20 kilometres separates them). The valley with internet access is more developed (e.g., better road infrastructure and educational institutions) and has a bigger population than the valley without internet access, which is located at the furthest point of the region.

The valley with internet access is known as “sub-Masherbrum” (it comprises Gulshan-e-Kabir, Sino, and Thagas villages, and consists of 1078 households), and the valley without internet access is known as “Kondus” (representing five small villages, including Khorkondo, Lachet, Choghogrong, Thang, and Karmanding, and 544 households). Moreover, variability in internet services is not purely natural. For instance, among several factors, the Kondus valley has a small population with a particular terrain, which might require more than one telecom tower to provide signals to its five small villages, which are at some distance from each other.

**Figure 2: Aerial View of the Two Remote Valleys Located in the Gilgit-Baltistan (Google Maps).**



For the purpose of comparing attitudes and behaviours regarding religious minorities in Pakistan, I asked the following three central questions to locals from both valleys.

- 1/ a) In your opinion, what are the political issues, including political rights, political challenges, etc., of Hindus and Christians in Pakistan?
- b) Can you name some of the Hindu and Christian politicians in Pakistan?
- c) Do you know that Pakistan's supreme court recently freed a Christian lady from prison due to a lack of evidence about an act of blasphemy in Punjab?
- d) Do you know that last year a Hindu girl, a BDS student, was found dead in her hostel room in Sindh, which became a big issue related to minorities' safety?
- 2/ In your opinion, do you think Hindu and Christian religious minorities in Pakistan should be free to express their political views like Muslims are?
- 3/ Are you willing to participate in a protest or demonstration for the protection of Hindu and Christian religious minorities in Pakistan? ■

# METHOD

A total of twenty-four semi-structured interviews with only male participants were conducted, twelve from each valley. According to qualitative analysts, twelve interviews are a reliable number to extract meta themes.<sup>24</sup> Interview data was collected in May 2020 via a research assistant, and audio-recorded for analysis. Adult respondents across age, education, and income groups were included. The average age of participants from each valley was 33, ranging between 24 to 60 years old from the valley with internet (sub-Masherbrum), and 25 to 50 years old from the valley without internet (Kondus). The average income of participants from both valleys was similar, but the average education level from the valley with the internet was higher than its counterpart. All the interviewees from Kondus valley belonged to the Shia denomination of Islam. However, sub-Masherbrum valley interviewees were mixed, being from the Shia and Noorbakshia denominations of Islam. Interviews were conducted in the 'Balti' language, a dialect of the Tibetan language spoken in the Baltistan region of Pakistan where the two valleys are located. Lastly, it is essential to note that this study only interviewed locals who had not spent a significant amount (e.g., more than a year) of their lives outside their native valleys and the Gilgit-Baltistan region. ■

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<sup>24</sup> Guest, Greg, Arwen Bunce, and Laura Johnson. 2006. "How many interviews are enough? An experiment with data saturation and variability." *Field Methods* 18, 1: 59–82.

Firstly, when the interviewees were asked about their daily life in the valley, many from the valley with internet access brought up the increasing role of social media in their everyday life. In contrast, some interviewees from the valley without internet access mentioned their lack of communication facilities. It is to be noted that these responses might have been influenced by the consent form for the interview, where the research topic was introduced. Facebook, WhatsApp, and YouTube were the most popular social media platforms among interviewees from the valley with internet access, and most of them spend more than three hours on their favourite platform every day. Google was the most common search engine among internet users.

When asked “how do you keep yourself informed about what is going on in Pakistan?”, all interviewees from the valley with internet access explicitly said they got most of their information through the internet and from social media platforms. In contrast, most interviewees from the valley without internet access reported that they received information from traditional media, primarily television. It must be mentioned here that with the help of satellite television, locals access not only national media channels but also international ones, such as Indian media channels, the content of which is easier for them to understand due to language similarities between Urdu and Hindi.

They were also specifically asked about their sources of information about religious issues and minorities in Pakistan, mainly about Hindus and Christians and their problems. Again, most interviewees from the valley with internet access named the internet and social media, with examples. A majority of them explained that they do not intentionally search for such information on digital platforms, but the exposure is incidental. This finding is in line with the notion of incidental cross-cutting exposure, which argues that although social media algorithms may play a role in forming echo-chambers, there is always the possibility of incidental learning via different groups, pages, friends, and friends of friends.<sup>25</sup> According to incidental learning literature, social media usage frequency is the key

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<sup>25</sup> Lu, Yanqin, and Jae Kook Lee. 2019. “Stumbling upon the other side: Incidental learning of counter-attitudinal political information on Facebook.” *New Media & Society* 21, 1: 248–265.

predictor of incidental cross-cutting exposure. The interviewees from the valley with internet access reported that they spend more than three hours on social media during a typical day, which is above average. However, most interviewees from the valley without internet access reported that they predominantly learn about Pakistani Hindus and Christians and their problems through television and books, particularly from their school curricula.

Furthermore, the interviewees from the valley without internet access were less aware of the latest events related to religious minorities in Pakistan than their counterparts. For instance, some interviewees from the valley with internet access were aware of the Hindu temple construction issue and related happenings in the country's capital, whereas the residents from the valley without internet access were not – most likely due to their dependence solely on traditional media for news and information. A recent study shows that Pakistani mainstream news provides limited space for religious minorities.<sup>26</sup> Thus, digital platforms work as alternative media, differing from mainstream media in terms of content and dissemination by providing alternative perspectives on socio-political issues. Besides, when the interviewees from the valley with internet access were asked to name Hindu and Christian Pakistani politicians, most of the interviewees either recalled names or at least mentioned which party the politician represented or the politician's designation, such as a minister. As compared to respondents from the valley without internet access who did not have such information, many respondents from the valley with internet access also knew about the alleged blasphemy case against Asia Bibi, the Christian woman, and gave positive responses.<sup>27</sup> Some indicated that they knew about the case of the Hindu girl who died mysteriously in the Sindh province of Pakistan.<sup>28</sup> It is probable that they were more aware of the former story because of the huge global and national attention it had garnered. Notably, a few interviewees from both valleys said they were not interested in issues related to Pakistani religious

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<sup>26</sup> Rehmat, Adnan. 2019. "Helping minorities find a voice in Pakistani media." *International Media Support*, 24 May. (<https://www.mediasupport.org/blogpost/helping-minorities-find-a-voice-in-pakistani-media/>).

<sup>27</sup> Sherwood, Harriet. 2020. "Asia Bibi begins new life in Canada – but her ordeal may not be over." *The Guardian*, 8 May. (<https://www.theguardian.com/world/2019/may/08/asia-bibi-begins-new-life-in-canada-but-her-ordeal-may-not-be-over>).

<sup>28</sup> Khurram, Shahjahan. 2019. "Twitter wants justice for Larkana medical student Nimrita Kumari." *National Courier*, 17 September 17. (<https://www.natcour.com/news/2019/09/twitter-wants-justice-for-larkana-medical-student-nimrita-kumari/>).

minorities and their challenges. Therefore, the individual's interest is also a key factor, irrespective of the digital divide and levels of democratic citizenship.

Knowledge of an issue can be a strong predictor of attitudinal and behavioural changes.<sup>29</sup> On the one hand, regarding tolerance, when locals were asked whether Hindu and Christian religious minorities in Pakistan should be allowed to express their political views freely, just as Muslims are, the majority of the interviewees from both valleys expressed that Pakistani religious minorities should have political opportunities equal to those of the religious majority. Most interviewees mentioned that persons from religious minorities are fellow citizens, and the country's constitution allows marginalised social groups to express their political views. This finding is in line with the common in-group identity model, which argues that a common social identity should be highlighted to achieve intergroup harmony over an in-group identity.<sup>30</sup> These responses could have been shaped by the school curricula, which contain lessons on Pakistani religious minorities and their constitutional rights. On the other hand, regarding engagement, when asked about the locals' willingness to participate in a protest or demonstration to protect Hindu and Christian religious minorities in Pakistan, most respondents from the valley with internet access responded that they are willing to participate in such protests. This response was possibly influenced by the various calls for protests or mobilisation information that reached the respondents via the internet and social media platforms, organised by civil society activists and organisations. Their higher levels of knowledge might have also influenced their responses compared to their counterparts from the other valley. However, some interviewees said their willingness is conditionally connected to the clarity of purpose, such as participation not harming their religion. Hence, locals from both valleys exhibited equal levels of tolerance, but locals from the valley with internet access were more willing to engage in civic activities due to a grasp of the relevant issues, most likely with the help of the alternative narratives from digital platforms. In sum, locals of the valley with internet access possess a greater degree of democratic citizenship than their counterparts.

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<sup>29</sup> Galston, William A. 2001. "Political knowledge, political engagement, and civic education." *Annual Review of Political Science* 4: 217–234.

<sup>30</sup> Dovidio, John F., Samuel L. Gaertner, and Gladys Kafati. 2000. "Group identity and intergroup relations: The common in-group identity model." *Advances in Group Processes* 17: 1–34.



**Figure 3 (left): A Telecom Tower;**  
**Figure 4 (right): A Young Local Using Facebook**



Finally, since both valleys have satellite television and radio services, locals with traditional media in their homes have access to information, but at a low level – due to television and radio’s limited capacity to cover issues related to religious minorities, as well as the lack of reportage.<sup>31</sup> On the other hand, locals from the valley with internet access receive news both from traditional media and through their smartphones. Their information consumption patterns are transitioning from listening to the news in the evening to constant browsing online. They have not only substantial sources of information consumption but also information exploration and dissemination. Thus, one can assume that access to traditional media does not significantly add to peoples’ stores of information as compared to access to the internet and social media. Besides, regular internet users in the valley with internet access can potentially influence non-users by sharing their acquired information offline. For instance, social media users might share a hashtag movement about religious minorities with their friends and family members. ■

This case study presents an inquiry into examining the role that digital access plays in (un)democratic citizenship by taking advantage of a “naturally occurring” variability in internet availability in Pakistan. It finds the differences in knowledge and engagement levels between the natives of two valleys, but no difference regarding tolerance, indicating that locals from the valley with internet access have a higher level of democratic citizenship.

One could argue about the undemocratic impacts of digital media platforms, such as the social media filter bubble causing polarisation. Given the role of echo chambers, the internet may re-trigger pre-existing prejudices, biases, and stereotypes leading to undemocratic attitudes and behaviours regarding marginalised social groups. Yet, some studies criticise taking social media for granted as a cause of this problem.<sup>32</sup> For instance, a study of the entire Facebook network showed that, on average, every user is at only four degrees of separation from the other,<sup>33</sup> showing a greater likelihood of cross-cutting exposure or conversation with different others on social media platforms. Therefore, the debate is shifting from whether the new communication “environment is good or bad for democratic politics to how and in what contexts specific attributes of this environment are having an influence on specific theories and practices of democracy,” as the political theorist Michael Carpinì avers.<sup>34</sup> In the case of this study, one way to address the question is to investigate whether people are now less polarised on the issues faced by religious minorities, as well as less knowledgeable, intolerant, and unwilling to engage with matters concerning them than before the arrival of the internet in Pakistan. We could also compare reported incidents of communal violence against religious minorities before and after the internet era. It is suggested that scholars focus on this comparison in future studies.

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- <sup>32</sup> Barberá, Pablo. 2014. “How social media reduces mass political polarization. Evidence from Germany, Spain, and the US.” *Job Market Paper*, New York University 46; Anderson, Janna and Rainie Lee. 2020. “Hopeful themes and suggested solutions.” PEW, 21 February. (<https://www.pewresearch.org/internet/2020/02/21/hopeful-themes-and-suggested-solutions/>); and Thompson, Nicholas. 2020. “Why Are We Polarized? Don’t Blame Social Media.” WIRE, 13 February. (<https://www.wired.com/story/why-are-we-polarized-dont-blame-social-media-ezra-klein/>).
- <sup>33</sup> Backstrom, Lars, Paolo Boldi, Marco Rosa, Johan Ugander, and Sebastiano Vigna. 2012. “Four degrees of separation.” *Proceedings of the 4th Annual ACM Web Science Conference*: 33–42.
- <sup>34</sup> Carpinì, Michael X. Delli (ed.). 2019. *Digital Media and Democratic Futures. Democracy, Citizenship, and Company*. Philadelphia: University of Pennsylvania Press. 167.

Moreover, since Pakistani religious minorities do not impose any political threat to the religious majority due to their significantly small population size, the digital public sphere is less likely to be polarised on the issues related to them. Hence, the Muslim majority has a greater chance to learn about fellow citizens with differing religious beliefs through the internet and social media platforms, likely resulting in greater tolerance and engagement with the minority communities. However, not all religious minorities share equal social status and similar life experiences in Pakistan. For instance, the case of Pakistani Ahmadiyyas is unique compared to other religious minorities, so focusing individually on each minority group could be interesting to explore in future studies as well.

In addition, while marginalised groups have been discriminated against and have been victims of violence, digital media has the potential to spread religious harmony in Pakistan.<sup>35</sup> The proliferation of digital media in the country has increased horizontal connectivity across diverse social groups, connecting and opening channels of communication between people of different faiths and geographies. New communication technologies also provide a space for religious minorities to present themselves, allowing ordinary Muslims to receive detailed information about other religions in contrast to the traditional mainstream media in Pakistan, which provides limited coverage to Pakistani religious minorities.<sup>36</sup> As a result of these relationships, the Muslim majority could come forward and speak for non-Muslim minorities. Human rights activists and organisations are active in the digital public sphere, too, spreading awareness among the public.<sup>37</sup> They use these platforms for instant information reception and dissemination on issues like the challenges faced by minorities, which assist in gaining support from the religious majority, as well as to organise campaigns, mobilise people, and network with other activists and organisations. Based on these normative assumptions, one could argue that the acceptance of religious minorities in contemporary Pakistani society is likely to increase, compared to the era before the internet. ■

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35 Hussain, Syed Ali, and B. William Silcock. 2019. "Social Media Campaign to Improve Religious Tolerance." *Narratives of Storytelling across Cultures: The Complexities of Intercultural Communication*: 217.

36 Rehmat, Adnan. 2019. "Helping minorities find a voice in Pakistani media."

37 Yusuf, Huma, et al. 2013. "Mapping digital media: Pakistan." *Open Society Foundations*. (<https://www.opensocietyfoundations.org/publications/mapping-digital-media-pakistan>).

Although there is a valley without internet access for reference (i.e., as a control group), it is critical to determine whether any differences in democratic citizenship between these two valleys are only due to the arrival of the internet in one of them. Caution is required in order to avoid arriving too easily at a purely technological deterministic conclusion. There could be other critical factors, such as the interest and education levels of participants from the internet valley and the valley's socioeconomic development level compared to its counterpart. In other words, merely internet availability is not necessarily enough for democratic citizenship – the users' interest and capacity play an essential role as well.

Furthermore, the findings of this case study might have been influenced by its unique contextual setting. Although Pakistan's rural population is almost two times larger than its urban counterpart, generalising the results should be done with caution. Gilgit-Baltistan is very different from other rural regions. For instance, almost its entire population is Muslim, and the region has never experienced interfaith conflict. The crime rate in Gilgit-Baltistan is significantly lower, and it is one of the most peaceful parts of the country. The literacy rate is also the third-highest in the country (72%).<sup>38</sup> The region is known for its tourist destinations and attracts thousands of foreign and domestic tourists every year. Hence, locals might have experienced contact with non-local non-Muslims. Besides, locals of the two valleys belong to Shia and Noorbakshia denominations of Islam. They are a sectarian minority in Pakistan compared to Sunni Muslims, who constitute above 75% of the population. The Shia community, especially, has been the victim of many attacks in the past, losing thousands of lives. Hence, their acceptance of non-Muslims could be high as they empathise with the perceived minority status of the non-Muslims.<sup>39</sup> They could also be likely to share the same online filter bubbles with non-Muslims and get relevant knowledge about them via social media, resulting in high degrees of tolerance and willingness to engage on their behalf. Finally, since this study attempted to mainly focus on the locals' responses regarding Pakistani Hindus and Christians, findings cannot be fully translated towards other religious minority groups, such as Ahmadis, who experience a different set of challenges. ■

<sup>38</sup> Rehman, Abdul, Luan Jingdong, and Imran Hussain. 2015. "The province-wise literacy rate in Pakistan and its impact on the economy." *Pacific Science Review B: Humanities and Social Sciences* 1, 3: 140–144.

<sup>39</sup> Kalin, Michael, and Niloufer Siddiqui. 2020. "National identity, religious tolerance, and group conflict: Insights from a survey experiment in Pakistan." *Conflict Management and Peace Science* 37, 1: 58–82.

# IMPLICATIONS

Normatively speaking, access to digital media has multiple democratic implications. Notably, its effect on knowledge, tolerance, and engagement of citizenry can lead towards strengthening the democratic structure of emerging democracies, which have small groups of religious minorities, such as Pakistan. This paper hopes to enhance the ability of organisations and individuals to understand the egalitarian impact of a digitally connected society. Future scholarly collaboration between social scientists and policymakers could be built to develop more nuanced research and policies. For instance, democratic citizenship could be achieved by improving access to internet infrastructure, initiating digital media literacy programmes, online interfaith harmony campaigns, and, most importantly, monitoring the digital public sphere to reduce polarisation between different social groups. It could also help members of civil society to promote social harmony and integrate different religious groups digitally.<sup>40</sup> ■

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<sup>40</sup> Hussain, Syed Ali, and B. William Silcock. 2019. "Social Media Campaign to Improve Religious Tolerance."

## The Author

**Muhammad Masood** is a PhD student at the Department of Media and Communication, City University of Hong Kong. Muhammad's dissertation examines the impact of the internet on the socio-political landscape of contemporary Pakistani society, focusing on how social media use has changed the attitudes and behaviours of the Muslim majority towards non-Muslim minorities in Pakistan. His research interests also include political communication, public opinion, and civic engagement.

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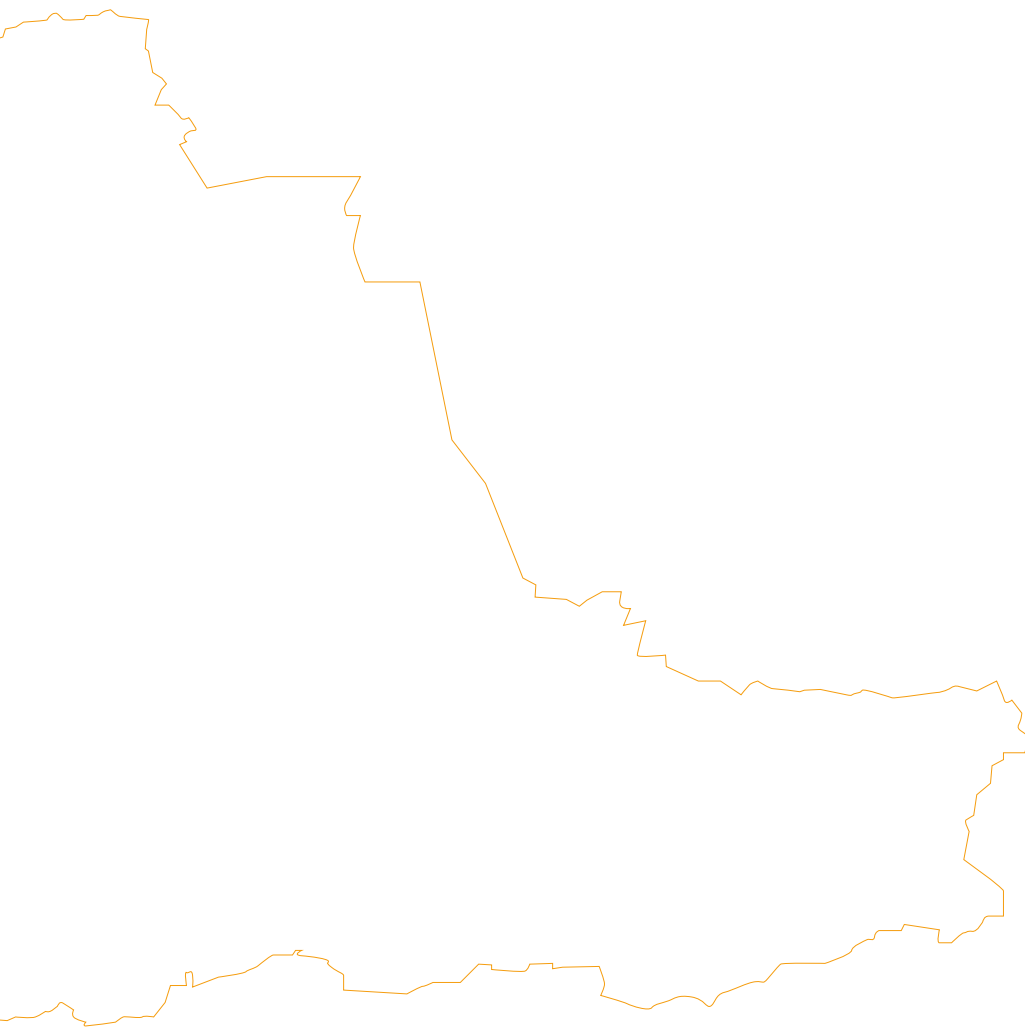
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# 3

## PUBLIC SECTOR INNOVATION





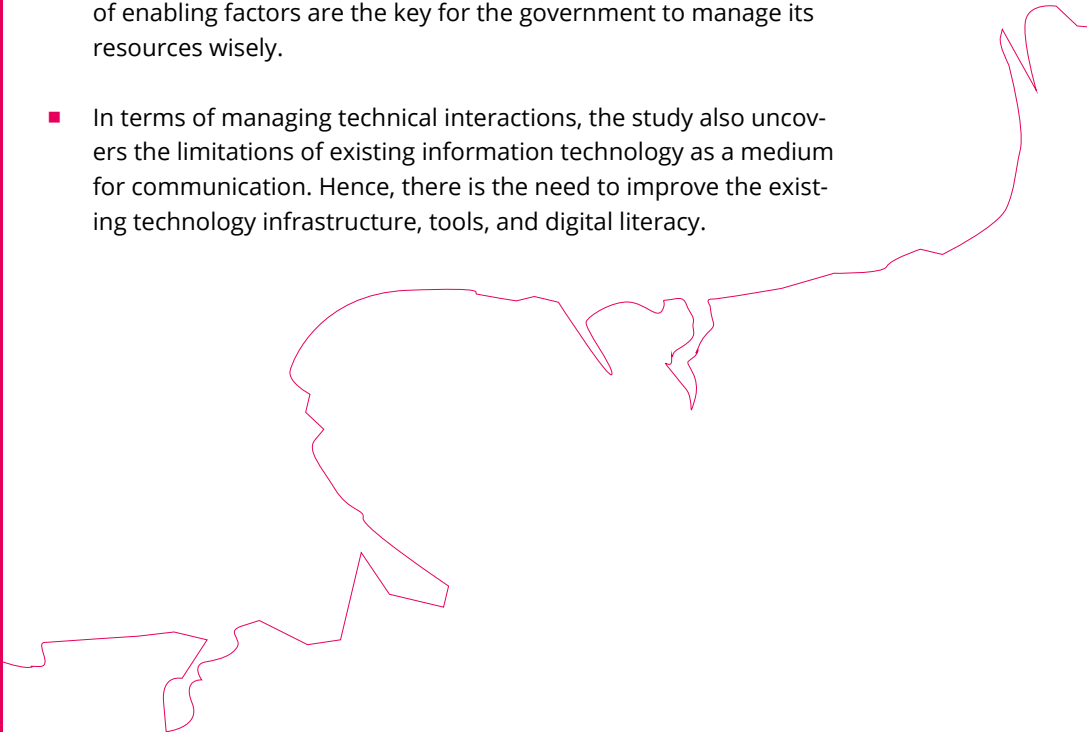


**UNDERSTANDING  
THE EFFECTIVENESS  
OF E-INVITED SPACES  
IN INDONESIA:  
A LITERATURE  
REVIEW USING THE  
HUMAN ACTION  
PERSPECTIVE**

Arthur Glenn Maail

# KEY TAKEAWAYS

- Public-sector digitisation has transformed significantly from the early emergence of websites with limited functionalities to the current efforts to build transparency, accountability, and citizen engagement under the concept of e-Invited spaces.
- By introducing a human action perspective framework, this paper argues that the effectiveness of government-citizen interactions in e-Invited spaces depends on the alignment of governments' and citizens' expectations, along with supportive contextual factors for enabling social and technical interaction within the space.
- Based on the review of the two prominent e-Invited spaces in Indonesia, namely Lapor! and e-Musrenbang, the study reveals that managing the complexities of social interactions is the biggest challenge for building an effective e-Invited space. This is due to the fact that key factors for managing social interactions are embedded in local practices, cultures, and norms.
- There are different sets of enabling factors depending on the type of social interaction (i.e., strategic, communicative, or discursive action). This means, going forward, policy makers need to realise that there is no one-size-fits-all solution in managing an e-Invited space. Understanding of the types of interactions and these sets of enabling factors are the key for the government to manage its resources wisely.
- In terms of managing technical interactions, the study also uncovers the limitations of existing information technology as a medium for communication. Hence, there is the need to improve the existing technology infrastructure, tools, and digital literacy.



In recent years, the scope of a digital government has evolved significantly from mere digitisation and automation of government services towards more engagement, greater contextualisation, and specialisation of services and policy.<sup>1</sup> Prior studies have suggested that the effectiveness of the e-Invited space will depend on the alignment of providers' and citizens' expectations, along with supportive institutional incentives.<sup>2</sup> However, little is known about how such alignment can be achieved and which enabling factors can support it.

This study attempts to address this gap, to understand ways to improve the alignment of citizen-government interactions within the 'invited' spaces. Specifically, within the space where ICT is used to mediate interactions between the citizens and the government. Hence, the main question here is **how can an effective citizen interaction in ICT-mediated invited (e-Invited) spaces be achieved?** In addressing the question, the study introduces the concept of participation equilibrium as a key measure for the effectiveness of e-Invited spaces. It takes the perspective of the human action approach by utilising Habermas' Theory of Communicative Action (TCA) to understand ways to achieve participation equilibrium. The selection was made based on the results of the review of prior theories used in Information Systems literature,<sup>3</sup> which showed that Habermas' TCA, particularly his typology of human action, can be useful in explaining human actions during development of information systems, including user participation. The applicability of the framework is then tested by reviewing past studies on the effectiveness of two major e-Invited spaces implemented by local governments in Indonesia, namely LAPOR! and e-Musrenbang. ■

- 1 Janowski, Tomasz. 2015. "Digital Government Evolution: From Transformation to Contextualization." Elsevier; World Bank Group. 2016. "World Development Report 2016, Digital Dividends." Washington DC, USA: International Bank for Reconstruction and Development.
- 2 Wetterberg, Anna, Jana C Hertz, and Derick W Brinkerhoff. 2018. "Social Accountability in Frontline Service Delivery: Citizen Engagement and Provider Response in Four Indonesian Districts." *Development Policy Review* 36.
- 3 Lyytinen, Kalle, and Heinz Klein. 1985. "The Critical Theory of Jürgen Habermas as a Basis for a Theory of Information Systems." in *Research Methods in Information Systems*. ed. E. Mumford, et al. Amsterdam: Elsevier.; Lyytinen, Kalle. 1992. "Information Systems and Critical Theory." in *Critical Management Studies*, ed. Mats Alvesson and Hugh Willmott. London, Newbury Park, New Delhi: Sage Publications.



# EFFECTIVENESS OF E-INVITED SPACES

The new wave of democratic experiments aiming at transforming older forms of governance has led to a widening of the political space for public engagement of citizens with their government. Inspired by the promise of achieving better decision-making, improving government transparency and accountability, and maintaining efficient public service delivery, the creation of the “invited” space offers a reconfiguration of relationships and responsibilities that transforms interactions between citizen and state.<sup>4</sup> There are spaces where citizens are invited to participate by various authorities, from the neighbourhood forum initiated by the local government to a complaint-handling system at the national level. These spaces are referred to as “invited” spaces.<sup>5</sup>

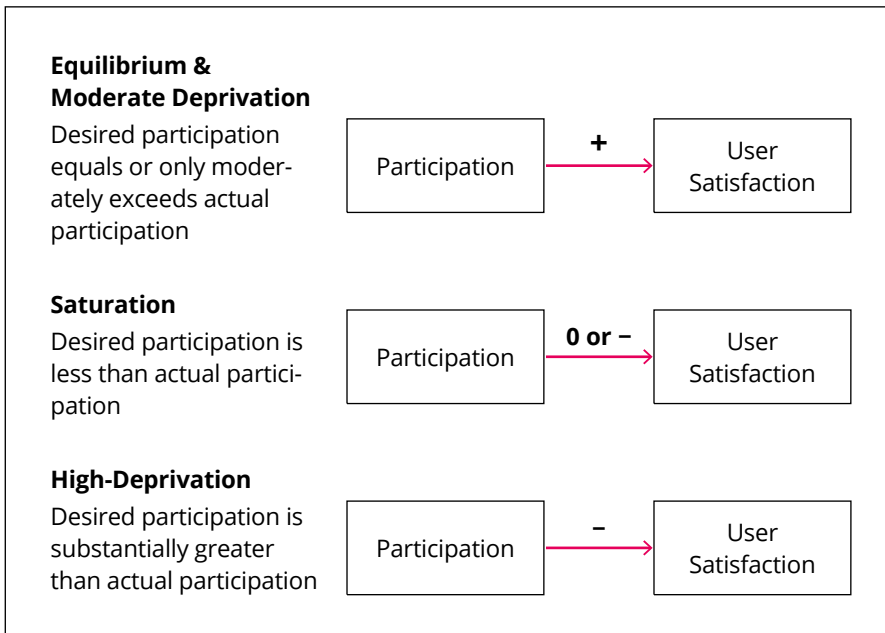
While opening spaces for citizen-government interaction is necessary, it is by no means sufficient to ensure effective citizen participation. If the spaces are not carefully designed or implemented, it may delay decisions, increase conflict, disappoint participants, and lead to more distrust. Indeed, previous studies have shown some inconsistencies concerning the effectiveness of government-citizen interactions in invited spaces,<sup>6</sup> particularly since there could be different interpretations of what constitutes effectiveness.<sup>7</sup> The theoretical framework introduced in this paper seeks to address this gap.

In Figure 1, the discrepancy model of user participation in the context of information systems development shows the conflicting findings regarding the effectiveness of user participation.<sup>8</sup> The model suggests that when the desired participation level is less or greater than the actual participation level, it has a negative or no effect on user satisfaction which is used to measure the success of user participation. Doll and Torkzadeh (1989) posited that user participation will have

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- 4 Cornwall, Andrea. 2008. “Unpacking ‘Participation’: Models, Meanings and Practices.” *Community Development Journal* 43, 3.
  - 5 Gaventa, John. 2006. “Finding the Spaces for Change: A Power Analysis,” *IDS bulletin* 37, 6; Cornwall, Andrea and VPS Coelho. 2006. “Spaces for Change? The Politics of Participation in New Democratic Arenas: Citizen, Participation and Accountability.” *Sussex: Institute of Development Studies*; Cornwall, Andrea. 2004. “Introduction: New Democratic Spaces? The Politics and Dynamics of Institutionalised Participation.” *IDS bulletin* 35, 2.
  - 6 Yang, Kaifengand, and Sanjay K Pandey. 2011. “Further Dissecting the Black Box of Citizen Participation: When Does Citizen Involvement Lead to Good Outcomes?” *Public Administration Review* 71, 6.
  - 7 Berner, Maureen M, Justin M Amos, and Ricardo S Morse. 2011. “What Constitutes Effective Citizen Participation in Local Government? Views from City Stakeholders.” *Public Administration Quarterly*.
  - 8 Doll, William J, and Gholamreza Torkzadeh. 1989. “A Discrepancy Model of End-User Computing Environment.” *Management Science* 35, 10.

a positive impact only when it was done under the equilibrium condition, which exists when the actual level of participation roughly corresponds to the desired level of participation designed by the system. They found that under this condition, participation, whether low or high, has positive effects on all three physiological measures (i.e., value attainment, cognitive, and motivational).

**Figure 1: Discrepancy Model of Participation<sup>9</sup>**



In practice, the desired level of participation is made up of different types of human actions expected to be performed during the interactions within the space, while the actual level of citizen participation is affected by contextual factors that make up a complex social and political structure within the space. Hence, achieving the equilibrium condition requires exploration of these elements. In this paper, two important concepts within Habermas' Theory of Communicative Action (TCA)<sup>10</sup>, the typology of human action and the action-constitutive resources, are used to guide this exploration. ■

<sup>9</sup> Doll, William J, and Gholamreza Torkzadeh. 1989. "A Discrepancy Model of End-User Computing Environment."

<sup>10</sup> Habermas, Jürgen. 1984. *The Theory of Communicative Action: Reason and the Rationalization of Society*. 2 vols., vol. 1. Boston, Massachusetts: Beacon Press.

# TYPOLGY OF HUMAN ACTION

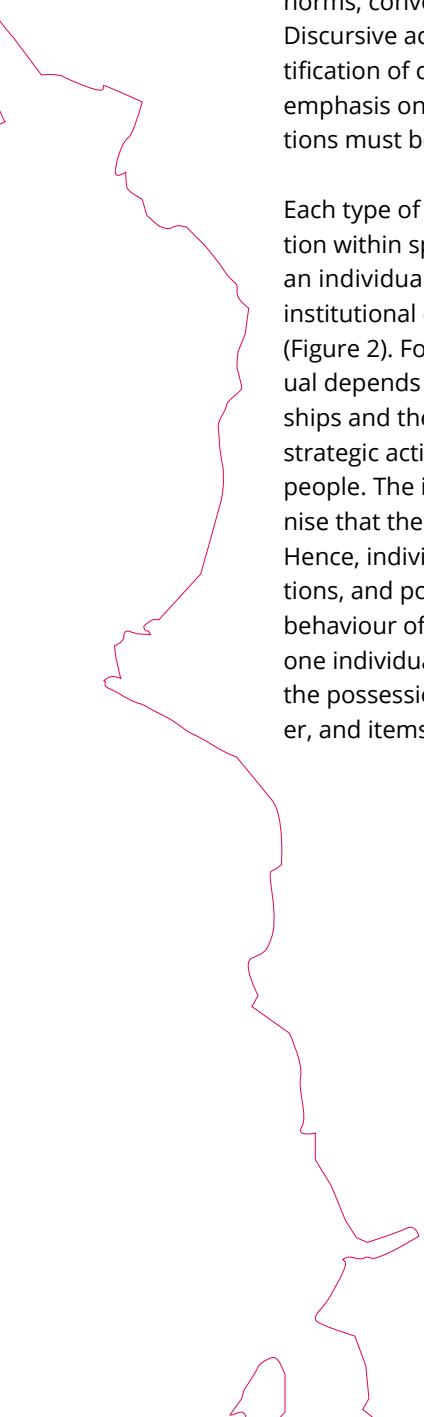
In TCA, Habermas derives a typology of human actions based on the observation of two human tendencies or orientations<sup>11</sup> (see Table 1). The first type of action is based on the tendency towards achieving their own success, which is called the “purposive-rational action”. Purposive-rational actions are actions that are directed towards the achievement of given objectives. If the action is an intervention in the physical world and is achieved by following technical rules (or the non-social domain), the action is called “instrumental action”. If the purposive-rational action is taken by considering the impact of the action on social situations or other people who may engage in counteraction, the action is called “strategic action”.

**Table 1: Habermas’ Typology of Human Action.**<sup>12</sup>

<i>Domain of Action</i>	<i>Type of Action</i>		<i>Type of Interaction</i>
	<b>Purposive-rational or teleological</b> <i>One or more actors are oriented towards their own success</i>	<b>Communicative</b> <i>Actors (at least two) are oriented towards mutual agreement</i>	
Non-social	Instrumental action	N/A	Technical Action
Social	Strategic action	Communicative action Discursive action	Social Interaction

<sup>11</sup> Habermas, Jürgen. 1987. *Knowledge and Human Interests*. Cambridge: Polity; Lyytinen, Kalle, and Heinz K Klein. 1985. “The Critical Theory of Jürgen Habermas as a Basis for a Theory of Information Systems.”

<sup>12</sup> Habermas, Jürgen. 1984. *The Theory of Communicative Action: Reason and the Rationalization of Society*.



The second type of human action is based on human orientation to achieve a mutual agreement. Here, the success orientation is replaced by a desire to understand a communicating partner. There are two types of action in this orientation: “communicative action” and “discursive action”. With communicative action, people reach an agreement by having a common background of values, shared norms, conventions, habits, and assumptions about the world. Discursive action is oriented towards achieving clarification and justification of claims by providing reasons and evidence. It places an emphasis on the concept of argumentation where various assumptions must be carefully examined, clarified, and tested.

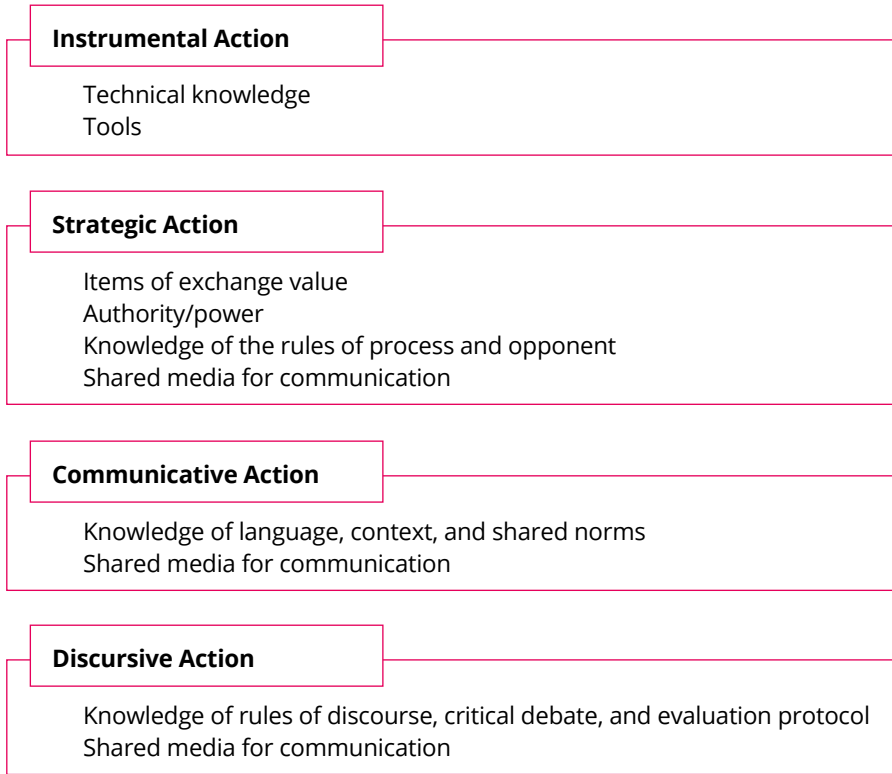
Each type of action assumes a set of resources for enacting the action within specific institutional practices. The basic resources that an individual needs to skillfully perform the action within specific institutional contexts are called “action constitutive resources”<sup>13</sup> (Figure 2). For the enactment of the instrumental action, the individual depends upon the technical knowledge of input-output relationships and the tools needed to achieve the given ends. In contrast, strategic action focuses on transforming the behaviour of other people. The individuals who engage in strategic action also recognise that their opponent may engage in intelligent counteraction. Hence, individuals need to recognise their opponent’s goals, positions, and potential for counter actions.<sup>14</sup> The transformation of the behaviour of other people consequently requires the domination of one individual over the others. This power can be attained through the possession of social resources like social status, authority/power, and items of exchange value (e.g., time, expertise).

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**13** Ngwenyama, Ojelanki K, and Kalle Lyytinen. 1997. “Groupware Environments as Action Constitutive Resources: A Social Action Framework for Analysing Groupware Technologies.” *The Journal of Collaborative Computing* 6.

**14** Ngwenyama, Ojelanki K, and Allen S Lee. 1997. “Communication Richness in Electronic Mail: Critical Social Theory and the Contextuality of Meaning.” *MIS Quarterly* 21, 2.

**Figure 2: Action Constitutive Resources for Each Human Action<sup>15</sup>.**



Communicative and discursive actions aim to achieve agreement among the participating individuals. Both actions presuppose the existence of shared media for communication. The communicative action is enacted via language and other forms of symbolic interaction to seek a possible basis for agreements and compromises, interpretations of shared norms, values, and the meanings of situated action. When the validity of the agreement is challenged, the individuals enter the discursive action, which is oriented towards restoring agreement and conditions for coordinated action. Discursive activity manifests through critical debate and argumentation. These two activities form the basis for joint decision-making and agreement. Habermas argues that the effectiveness of discursive activity depends on the existence of rules of discourse and critical debate, as well as the tools for analysis and evaluation of alternative arguments. ■

<sup>15</sup> Ngwenyama, Ojelanki K, and Kalle Lyytinen. 1997. "Groupware Environments as Action Constitutive Resources: A Social Action Framework for Analysing Groupware Technologies."

The findings from this study were largely derived from extensive desk research. This activity largely consists of reviews of prior studies related to the effectiveness of the two prominent e-Invited spaces, namely LAPOR! and e-Musrenbang created by local governments in Indonesia. A total of nine papers and five papers were identified for LAPOR! and e-Musrenbang respectively.

Using the proposed framework as the theoretical lens, insights gathered from the literature were divided into two main subsections. First, the typology of government-citizen interactions in LAPOR! and e-Musrenbang is explained by describing the types of human actions associated with the interactions. The second section describes the enabling factors for achieving participation equilibrium in the implementation of LAPOR! and e-Musrenbang. These factors were first identified from the papers described in the previous section.

### **Typology of Government-Citizen Interactions in LAPOR! and e-Musrenbang**

LAPOR! (translated in English as “report”) is seen as a successful e-Invited space in Indonesia. LAPOR! was introduced in 2011 to enable citizens to file reports or complaints regarding public services. These may range from a small, unfixed pothole in front of their homes to reported acts of bribery by public officials. The users can use the website [www.lapor.go.id](http://www.lapor.go.id), Short Message Service (SMS), Twitter (@lapor1708) and mobile applications (Android and iOS) to access LAPOR!. As of January 2019, LAPOR! has 801,257 users and has registered more than 1.39 million complaints. The majority of the report is related to social security assistance, such as the social security card and temporary direct cash assistance.<sup>16</sup>

In LAPOR! once the citizens send their enquiries/complaints, they get a unique tracking number for each report and a notification when there is an official response. The government agencies are supposed to respond within five working days. If a citizen does

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<sup>16</sup> Surjandari, Isti, et al. 2016. “Application of Text Mining for Classification of Textual Reports: A Study of Indonesia’s National Complaint Handling System.” Paper presented at the 6th International Conference on Industrial Engineering and Operations Management. Kuala Lumpur: IEOM.

not get a response within this time period, LAPOR!'s team calls the agency's liaison officer. If a week later there is still no progress, it sends a report to a senior official. The report includes which units in the agency received the most complaints and how they were managed. This usually pushes agencies to be more responsive. Finally, if that does not work, the agency can be reported to the Ombudsman of Indonesia which will investigate the case and give a binding order to the agency.

From the TCA perspective, the government-citizen interaction in LAPOR! appears to be manifested in the form of instrumental, strategic, and communicative action (shown in Table 2). The workflow indicates that the government will decide how to satisfactorily address the complaint from the LAPOR! platform. In these two instances, there is no room for citizens to negotiate government action other than to accept, ignore, or file a new complaint. For a complaint-handling system like LAPOR!, the strategic interaction starts when citizens submit their complaints through the system with the objective that they will be satisfactorily addressed by the government.

**Table 2: Typology of Citizen Interaction for LAPOR! and e-Musrenbang**

<i>E-Invited Space</i>	Type of Human Action		
	Instrumental	Strategic	Communicative
<b>LAPOR!</b>	<ul style="list-style-type: none"> <li>■ The citizens connect and interact with LAPOR! via website, SMS, or mobile apps.</li> </ul>	<ul style="list-style-type: none"> <li>■ The citizens send their enquiries/ complaints.</li> <li>■ Government officials verify the enquiries/ complaints.</li> <li>■ Government officials decide on the best solution to the enquiries/complaints.</li> <li>■ Citizens decide whether the solution is satisfactory, if yes, the case is closed. Otherwise, a new case ID will be opened.</li> </ul>	<ul style="list-style-type: none"> <li>■ Government officials communicate the solutions to the citizens</li> <li>■ Government officials check with the citizens if the solution is satisfactory.</li> </ul>
<b>e-Musrenbang</b>	<ul style="list-style-type: none"> <li>■ The citizens connect and interact with e-Musrenbang website</li> </ul>	<ul style="list-style-type: none"> <li>■ The citizens send their suggestions</li> <li>■ Government officials verify the citizens' suggestions</li> <li>■ Government officials decide the priority of the solutions and create the list of suggestions</li> <li>■ Citizens may monitor the suggestions but have little or no opportunity to change the solution</li> </ul>	



“Musrenbang” is an Indonesian abbreviation of the Development Planning Assembly. It is an annual process of community discussion about local development needs that takes place every January. Citizens deliberate on the issues facing their communities and decide upon priorities for short-term improvement which can be implemented in the following fiscal year. These discussions generally happen offline and are led by the head of the community unit. Once a list of priorities is made, it is submitted to the local government planning department via the online e-Musrenbang portal. Subsequently, the priority lists collected from the community units are discussed at the higher administrative levels, which are the subdistrict and city-wide levels. Based on these discussions, the final priority list is suggested and approved by the city councils, which assign resources to each neighbourhood depending upon the available funds and according to priority needs. Citizens can monitor whether their suggestions made it to the final list via e-Musrenbang portal.

In contrast to LAPORI, Table 2 shows that human interaction in the e-Musrenbang platform only involves instrumental and strategic action. The instrumental action happens when citizens interact with the e-Musrenbang portal. Meanwhile, the interaction between the government and citizens is strategic, where the citizens provide suggestions on the development priorities, but it is the government who will decide on the final list of priorities. There is a lack of official data on how many suggestions are accepted by the government annually. However, a study by Ashari et al<sup>17</sup>, shows that only 21% of the proposed projects in the final government annual development plan in the North Lombok district were derived from the proposals from the community. This number may vary from one local government to the other depending on several factors, including budget availability, quality of the proposal, urgency, and political interest. Except for the ability to monitor via the portal, citizens have little ability to influence the decision-making process. In strategic action, each human actor focuses on transforming the behaviour of other human actors. The government agency still maintains the authority to make the final decision about the development priority. Hence, in this instance, the agency is performing a strategic action.

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<sup>17</sup> Ashari, Masjudin. 2016. “Analisis Perencanaan Pembangunan Daerah Di Kabupaten Lombok Utara (Studi Kasus Perencanaan Partisipatif Tahun 2009–2013).” *Jurnal Ekonomi & Kebijakan Publik* 6, 2.

## Understanding the Enabling Factors to Achieve Participation Equilibrium

Identifying the types of human action performed helps to understand the key enabling factors to achieve participation equilibrium in the e-Invited space. From the TCA's perspective, these enabling factors refer to the action-constitute resources, which are the resources needed to perform the human action.

**Table 3: Mapping of the Enabling Factors for LAPOR! and e-Musrenbang from the Human Action Perspective**

Interaction	Enabling Factors	Action-Constitutive Resources
Technical	<ul style="list-style-type: none"> <li>■ Public awareness regarding the platform<sup>18</sup></li> <li>■ Human resource's e-Literacy<sup>19</sup></li> <li>■ Citizen's ICT self-efficacy<sup>20</sup></li> </ul>	<i>Technical knowledge</i>
	<ul style="list-style-type: none"> <li>■ Access to ITC infrastructure and tools<sup>21</sup></li> <li>■ Availability of easy-to-use technology (i.e., SMS, social media)<sup>22</sup></li> </ul>	<i>Tools</i>

<sup>18</sup> Siregar, Fajri et al. 2017. "Complaining to Improve Governance: Four Stories of Complaint-Handling Systems in Indonesia." in *Making All Voices Count Research Report*. Brighton: IDS.; For further supporting literature, please consult the reference list.

<sup>19</sup> Jahidi, Idi and Ayuning Budiati. 2019. "The Improvement of E-Administration in Indonesia: An Analysis Based on U Theory." Paper presented at the First International Conference on Administration Science, ICAS 2019.;

<sup>20</sup> Hidayanto, Nizar A et al. 2017. "Factors Influencing Citizen's Intention to Participate Electronically: The Perspectives of Social Cognitive Theory and E-Government Service Quality." Paper presented at the 2017 International Conference on Advanced Computer Science and Information Systems, ICACSIS.

<sup>21</sup> CIPG. 2015. "How Public Is Public Reporting Tools?" Paper presented at the Presented for Indonesian Conference on Governance and Sustainability 2015, Jakarta.;

<sup>22</sup> Feruglio, Francesca, and Amhad Rifai. 2017. "Participatory Budgeting in Indonesia: Past, Present and Future.";

Interaction	Enabling Factors	Action-Constitutive Resources
Strategic	<ul style="list-style-type: none"> <li>■ Clear incentives to the citizens (i.e., more funding at the neighbourhood level, better public services)<sup>23</sup></li> </ul>	<i>Items of exchange value</i>
	<ul style="list-style-type: none"> <li>■ Support from the key political champion(s)<sup>24</sup></li> </ul>	<i>Authority/power</i>
	<ul style="list-style-type: none"> <li>■ Consistent policies and regulations that support citizen engagement<sup>25</sup></li> <li>■ Availability of clear guidelines for citizen participation<sup>26</sup></li> <li>■ Capacity development for government officials and citizen groups<sup>27</sup></li> </ul>	<i>Knowledge of the rules of process and opponent</i>
	<ul style="list-style-type: none"> <li>■ Variety of communication channels<sup>28</sup></li> </ul>	<i>Shared media for communication</i>
Communi- cative	<ul style="list-style-type: none"> <li>■ Prior government-user relationships<sup>29</sup></li> <li>■ User's prior experience with the e-Invited space</li> <li>■ Citizens attitude towards the e-Invited space<sup>31</sup></li> </ul>	<i>Knowledge of contexts, language, and shared norms</i>
Discursive	<ul style="list-style-type: none"> <li>■ Relevant communication channels<sup>32</sup></li> </ul>	<i>Shared media for communication</i>

<sup>23</sup> Feruglio and Rifai; Akbar, Gugun Geusan et al. 2019. "Innovation in the Public Sector: The Effectiveness of 'Lapor!' As One of the Smart City Programs in Bandung." Paper presented at the International Symposium on Social Sciences, Education, and Humanities, ISSEH 2018.

<sup>24</sup> Kusumasari, Bevaola. 2018. "Humanizing or Dividing? The Challenge of Digital Democracy Implementation in Indonesia." *Management Research and Practice* 10, 4.

<sup>25</sup> OECD. 2016. "Open Government in Indonesia."

<sup>26</sup> Aswad, Setiawan et al. 2012. "The Roles of Procedural Justice and Social Learning in Improving Self Organizing Capabilities of Local Communities for Sustainable Development in Decentralized Indonesia." *OIDA International Journal of Sustainable Development* 3, 10.

<sup>27</sup> OECD.

<sup>28</sup> CIPG.

<sup>29</sup> Wetterberg, Hertz, and Brinkerhoff.

<sup>30</sup> Wetterberg, Hertz, and Brinkerhoff.

<sup>31</sup> Wetterberg, Hertz, and Brinkerhoff; Akbar et al..

<sup>32</sup> CIPG.

*The e-Literacy impacts the citizens' ability to perform technical interaction in e-Invited spaces. Prior studies have suggested that creating awareness is the key for continued use of the complaint-handling system.*<sup>33</sup> Also, access to the ICT tools including access to the Internet is necessary. Siregar, et al<sup>34</sup> noted that "the geographic spread of complaints [submitted to LAPOR!] corresponds with the varying state of development across Indonesia, [but it] has not been able to reach more isolated citizens, who have no access to basic ICT infrastructure". Moreover, the availability of easy-to-use technology is essential to interact with the digital platform.<sup>35</sup> To this extent, LAPOR! offers several flexibilities. For example, to submit their complaint, citizens can use SMS, mobile apps, or the web portal. Citizens can use their Facebook or Twitter account to log into the system.

Looking through the lens of Habermas' TCA, strategic social interaction requires both government and citizens to rely on the resources at their disposal. Such resources are what Habermas describes as "social and material resources that are involved in the generation of power and dominion of some actors over others".<sup>36</sup> Habermas contends that such resources may include charisma, social status, authority, time, and financial resources or items of exchange value. Therefore, a symbolic action of support by the political champion contributes to the legitimisation of the e-Invited space and may persuade citizens to expend the effort required to participate meaningfully. Similarly, the incentive given to users is another important enabling factor. The literature on organisational change theory posits that people are generally used to the status quo and any disruptions may evoke human resistance.<sup>37</sup> However, when the perceived impacts are in line with their goals, people are more willing to participate.<sup>38</sup> Firuglio and Rifai<sup>39</sup> suggest that such benefits can be in the form of efficiency due to streamlining of budgeting processes or in the distribution of funds to the neighbourhood level.

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**33** Siregar et al.

**34** Siregar et al.

**35** Feruglio and Rifai.

**36** Ngwenyama and Lyytinen, 76.

**37** Tait, Peter and Iris Vessey. 1988. "The Effect of User Involvement on System Success: A Contingency Approach." *MIS Quarterly* 12, 1.

**38** Lin, Winston T and Benjamin BM Shao. 2000. "The Relationship between User Participation and System Success: A Simultaneous Contingency Approach." *Information & Management* 37.

**39** Feruglio and Rifai.

Also, the availability of clear and consistent guidelines for citizen participation is necessary to provide an understanding of rules and processes. While the e-Musrenbang process is an important formal opportunity to involve the public in determining development priorities of local governments, several steps have been taken to improve the quality of the e-Musrenbang, such as socialisation to try to build a culture of participation and engagement, as well as measures to ensure concrete follow-ups.<sup>40</sup> Social interaction also requires a shared medium for communication. Implementation of LAPOR! and e-Musrenbang showed that IT can contribute to successful social interactions in the electronic-based system. Integration of the electronic system into the traditional Musrenbang has significantly expanded capacity and coverage of citizens included in the planning process. Likewise, the availability of easy-to-use technology such as social media or SMS has helped citizens to interact in the space. ■

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<sup>40</sup> Siliwanti. 2014. "Measuring Civic Engagement for Better Open Government Policies and Services." in OGP Asia Pacific Regional Conference 2014.

The paper has introduced the concept of participation equilibrium in defining the effectiveness and TCA as the theoretical framework to understand enabling factors to achieve the equilibrium condition. Based on the findings from the literature, several insights emerged from the study.

### **Sets of Conditional Factors**

From the perspective of TCA, the emergence of e-Invited spaces indeed marks the shift from the purposive-rational oriented approach towards the communicative-oriented approach in public sector digitisation. This transformation also means that the government needs to be able to manage complexities related to human action(s) associated with each of the stages to achieve the participation equilibrium. These actions may be related to technical aspects in dealing with ICT systems (i.e., instrumental action) or social interactions (strategic, communicative, or discursive action) that happen within the spaces.

The framework also suggests that there are different sets of enabling factors for each e-Invited space depending on the type of human interactions performed within the space. With such knowledge, the government can focus on the key set of factors to achieve the equilibrium condition. This is particularly useful for the government to manage its limited resources wisely.

### **Technological Limitations**

ICT provides a “medium for communication” necessary for social interactions among the key stakeholders in invited spaces. ICT also provides scale and speed in communication, which allows for effective and efficient use of resources during interactions within the space. Nevertheless, it is also apparent that the current ICT solutions have some limitations as we have shifted towards communicative-oriented interactions. The design of LAPOR! and

e-Musrenbang as feedback mechanism systems limits citizens' capability to perform follow-up action, which is needed when citizens need to perform discursive actions such as clarification, debates, or negotiation. At present, this limitation can be overcome by combining IT-based interactions with traditional in-person ones. For example, citizens can submit feedback using the IT-based system and use an in-person consultation session for discussing follow-up actions. In the future, e-Invited spaces may utilise advancements in digital communication technologies to replace in-person consultation.

Furthermore, in the context of developing countries, access to adequate ICT infrastructure and easy-to-use tools, as well as building the user's ICT knowledge and skills are still lacking. These limitations highlight the role of an intermediary to enable interaction between technology and the users who lack access to ICT due to many factors including illiteracy, lack of digital skills, financial constraints, and social empowerment issues.<sup>41</sup> The users who interact with the technology through an intermediary are often called secondary users.<sup>42</sup> Secondary users often emerge when digital technology implemented in developing countries, where direct interaction between users with technology might not be feasible. Depending on their technology operation competency, the intermediary may act as a surrogate, as an enabler, or as a translator.<sup>43</sup>

## Local Context Matters

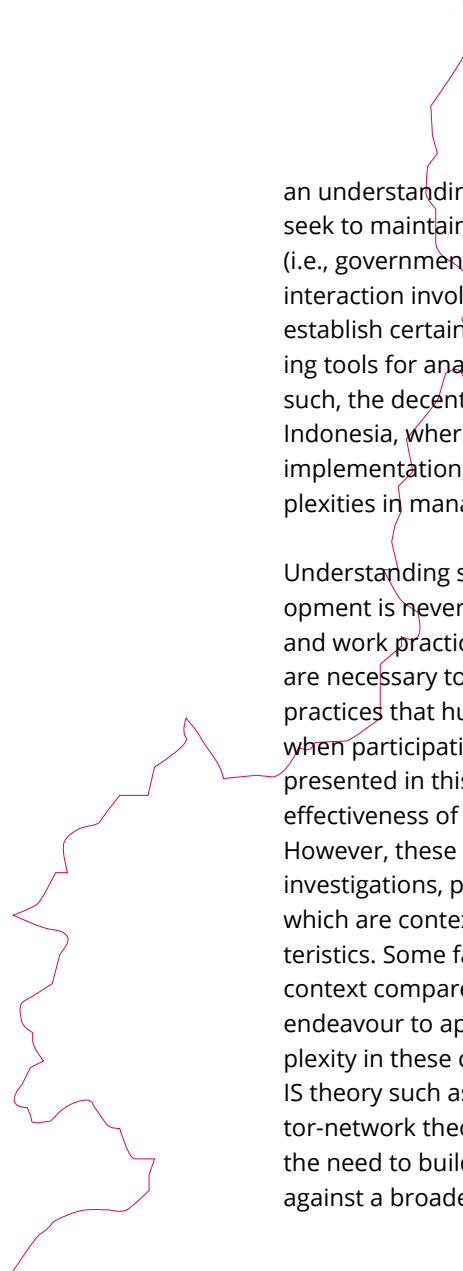
Facilitating social interaction in e-Invited spaces is a challenging task. This means that a one-size-fits-all strategy in governing the e-Invited space will certainly overlook these social complexities. The spaces with dominant strategic interaction will require an understanding of the needs of citizens and the ability to fulfil these needs. TCA referred to these resources as items of exchange value. On the other hand, the spaces with dominant communicative and discursive interaction require

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<sup>41</sup> Rajalekshmi, Kiran Gopakumar. 2007. "E-Governance Services through Telecenters: The Role of Human Intermediary and Issues of Trust." *Information Technology for Development* 4, 1; Sein, Maung K and G Harindranath. 2004. "Conceptualizing the Ict Artifact: Toward Understanding the Role of ICT in National Development." *Information Society* 20, 1.

<sup>42</sup> Parikh, Tapan S and Kaushik Ghosh. 2006. "Understanding and Designing for Intermediated Information Tasks in India," *IEEE Pervasive Computing* 5, 2.

<sup>43</sup> Sambasivan, Nithya et al. 2010. "Intermediated Technology Use in Developing Communities" Paper presented at the CHI 2010, Human Factors in Computing Systems, Atlanta.



an understanding of contexts and shared norms and values as they seek to maintain mutual understanding among participating actors (i.e., government and citizens) engaged in coordinated action. As interaction involves discursive actions, the spaces also need to establish certain rules and procedures for critical discourse, including tools for analysis and evaluation of alternative arguments. As such, the decentralised implementation of the e-Invited spaces in Indonesia, where each local government is responsible for system implementation, has followed the right approach to navigate complexities in managing these social interactions.

Understanding social action in the context of community development is never fixed but involves the construction of knowledge and work practices of the local community. Hence, further studies are necessary to understand cognitive, emotional, and political practices that human actors nurture in their in-situ environment when participating in digital development projects. The typology presented in this paper also outlines sets of conjectures for the effectiveness of government-citizen interactions in e-Invited spaces. However, these need to be further refined through more empirical investigations, particularly the factors affecting social interactions which are contextually embedded in local practices and characteristics. Some factors might be more prominent in a certain local context compared to others. For this reason, future research may endeavour to apply different theories useful to capture the complexity in these contexts. Prior studies have applied contemporary IS theory such as Pettigrew's contextualist theory,<sup>44</sup> Latour's actor-network theory,<sup>45</sup> or Giddens' structuration theory<sup>46</sup> to confront the need to build analytical capability to account for IS innovation against a broader social context. ■

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<sup>44</sup> Pettigrew, A.M. 1985. "Contextualist Research and the Study of Organisational Change Processes." in *Research Methods in Information Systems*, ed. E. Mumford, et al. Amsterdam: Elsevier.

<sup>45</sup> Latour, Bruno. 1991. *Technology Is Society Made Durable: A Sociology of Monsters*, ed. Law John, *Essays on Power, Technology and Domination Law*. London: Routledge.

<sup>46</sup> Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity.



# CONCLUSION

The effectiveness of e-Invited space depends upon the alignment between the government and citizens' expectations. This paper introduces the concept of participation equilibrium as a measure to achieve such alignment. It also demonstrates the usefulness of TCA in identifying human action and subsequently the factors that enable effective interactions within the e-Invited space.

This literature review reveals several insights into ways of managing an effective e-Invited space. First, an e-Invited space's effectiveness depends on the facilitator's ability to manage the technical and social interactions within the space. Second, managing social interactions presents some complex challenges as they are deeply embedded in local culture and norms. However, the TCA could help in understanding different sets of conditional factors to facilitate these interactions. Third, the current ICT infrastructure has limitations in facilitating technical interaction. Therefore, there is the need to develop infrastructure, easy-to-use tools, and human ICT literacy in order to allow meaningful participation in e-Invited spaces.

Finally, it should be emphasised that the limitation of the study lies on the fact that the conclusions made in this paper are based on the review of past studies. Hence, they need to be further refined through primary research. Such exploration can utilise this framework as a priori theory. ■

## The Author

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**ON GOVERNMENT  
INTERVENTION  
IN THE DIGITAL  
ECONOMY OF  
LEAST-DEVELOPED  
COUNTRIES:  
THE CAMBODIAN  
EXPERIENCE**

Daravuth Rath Sithy



# KEY TAKEAWAYS

- The maturation of the digital economy is a development priority in the policy agendas of several countries, given its potential contributions to both economic and social progress.
- Despite this recognition, policy experts and scholars have conflicting notions about the centrality of government intervention in digital economy consolidation. While many perceive it as inimical to economic efficiency, others posit that it is crucial for enabling progress in many respects.
- For Cambodia, perpetual government involvement can be beneficial for the expansion of the digital economy on two salient fronts: digital infrastructure consolidation and the creation of a market environment conducive for the digital economy to thrive.
- On digital infrastructure enhancement, a plethora of administrative and governance challenges, most of which stem from a fragmented and disjointed digital transformation agenda, is still hampering Cambodia's digital infrastructure development process. As such, prudent government leadership would significantly ease the institutionalisation of a 'whole-of-government' approach to this process, which will effectively overcome most, if not all, of the institutional inertias and rigidities present in the system today.
- Active government intervention can also address urban-rural digital disparities, particularly via the implementation of differentiated policy interventions centred on narrowing the disparities, thereby engendering both short and long-term benefits for economic digitalisation.
- The legal environment which underpins the growth of the digital economy is still incrementally maturing. This suggests that regular government supervision is still essential for particular diagnostic and improvement purposes.
- Going forward, it is imperative for policymakers to continue identifying the existing factors inhibiting digital transformation via comprehensive and collaborative policy researches, to accelerate reforms on public sector innovation through joint efforts with various stakeholders, and to also enact a 'whole-of-society' approach to digital transformation in the long-run, all of which will potently augment Cambodia's nascent digital economy.

Modern technology has been the cornerstone of national development strategies for centuries, but its prominence in accelerating economic progress has never been so widely pronounced than in the present era, particularly within the context of the ‘Fourth Industrial Revolution’ (4IR).<sup>1</sup> Although its importance has been broadly recognised, the onset of 4IR has exerted a great deal of pressure on many governments worldwide, especially in adapting to new socio-economic realities. Indeed, there is a newfound impetus for them to invest ample resources into readying their economies for the disruptions and opportunities bound to materialise within the ensuing societal shifts.<sup>2</sup> In Southeast Asia, it has also compelled numerous countries to undertake bold policy efforts towards recalibrating various pillars of their national innovation systems, one being the digital economy.<sup>3</sup> Among these is Cambodia, a least-developed country (or LDC, a UN classification), which has been pursuing a host of policy endeavours to empower its digital economy as part of a long-standing enterprise to become a middle-income-country in 2030 and a high-income country in 2050.<sup>4</sup>

Despite the absence of an overarching innovation strategy in its policy repertoire, the consolidation of the digital economy is now at the forefront of the Royal Government of Cambodia’s (RGC) development priorities.<sup>5</sup> In the ‘*Rectangular Strategy Phase IV*’ – its national development framework – the digital economy is denoted as an indispensable catalyst for augmenting both economic development and diversification as well as its steadfast transition towards a knowledge-based economy in the future.<sup>6</sup> Recognising this, the government has instituted various policy frameworks to capitalise on its potential. In 2014, the RGC introduced the ‘*Cambodia ICT Master Plan 2020*’ – an initiative centred on rendering

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- 1 Harari, Yuval N. 2018. *21 Lessons For The 21st Century*. London: Jonathan Cape.
  - 2 Schulze, Elizabeth. 2019. “Everything You Need to Know about the Fourth Industrial Revolution,” CNBC, 17 January. (<https://www.cnbc.com/2019/01/16/fourth-industrial-revolution-explained-davos-2019.html>).
  - 3 Keun Lee et al. 2019. “Is the Fourth Industrial Revolution a Window of Opportunity for Upgrading or Reinforcing the Middle-Income Trap? Asian Model of Development in Southeast Asia.” *Journal of Economic Policy Reform*: 1–18. (<https://doi.org/10.1080/17487870.2019.1565411>).
  - 4 Chhem Rethy et al. 2019. “Industry 4.0: Prospects and Challenges for Cambodia’s Manufacturing Sector.” Cambodia Development Resource Institute. (<https://cdri.org.kh/publication/policy-brief-industry-4-0-prospects-and-challenges-for-cambodias-manufacturing-sector/>).
  - 5 Ngov Mengyu. 2019. “Understanding Digital Economy in Cambodia.” *Khmer Times*, 18 December. (<https://www.khmertimeskh.com/671086/understanding-digital-economy-in-cambodia/>).
  - 6 Royal Government of Cambodia. 2018. “Rectangular Strategy Phase IV.” Phnom Penh, Cambodia.

Cambodia an intelligent nation by transforming it into an 'ICTopia' via strategic priorities including empowering civilians and enriching e-services in public service delivery.<sup>7</sup> This was preceded by the *'Policy on Telecom/ICT Development 2020'*, which focuses on enhancing the national ICT sector through expanding the Telecom-ICT infrastructure connectivity, improving ICT human capacity and diversifying the ICT industries combined with ICT applications.<sup>8</sup> According to Mok Khemara, Director of the Department of e-Government of the Ministry of Posts and Telecommunications (MPTC), 25 capitals and provinces have deployed their own 4G/LTE technologies, covering almost 60% of the Cambodian territory<sup>9</sup>. In addition, the MPTC also recently requested the Digital Economy Working Group of the Supreme National Economic Council (SNEC) to craft a digital government and digital economy policy to bolster the pace of economic digitalisation in the country towards transforming Cambodia into a highly digitally connected society by 2023.<sup>10</sup>

Despite these undertakings, Cambodia still lags behind many of its Southeast Asian counterparts in its progress towards constructing a vibrant and dynamic digital economy. The 2019 Global Innovation Index scored Cambodia's national innovation performance at 26.60, ranking it 97 of the 127 countries measured,<sup>11</sup> the lowest among the South-east Asian nations.<sup>12</sup> In the 2019 Global Competitiveness Report, the World Economic Forum (WEF) also ranked Cambodia's economic competitiveness at 106 out of 141 countries.<sup>13</sup> The report further stated that the country's entrepreneurial ecosystem, particularly within the digital economy, was among the weakest in the region due to structural and institutional

**7** Korean International Cooperation Agency (KOICA). 2014. "Summary on Cambodian ICT Master Plan 2020."

**8** Tum, Yusous. 2017. "Telecommunication and ICT Development Policy." Presentation, Centre of International Cooperation for Computerization. Tokyo, Japan, 1 February 2017.

**9** Khemara, Mok. 2020. "The achievement of an information society and knowledge economy is one of the main priorities of the RGC towards the attainment of the sustainable development goals (SDGs)." Presentation, Ministry of Posts and Telecommunications. Phnom Penh, Cambodia, 7 January 2020.

**10** Kunmakara, May. 2020. "Ministry to Prepare the Country for Digitalisation," Phnom Penh Post, 29 April. (<https://www.phnompenhpost.com/business/ministry-prepare-country-digitalisation>).

**11** "Innovation Index by Country, around the World." The Global Economy, 2020. ([https://www.theglobaleconomy.com/rankings/GII\\_Index/#Cambodia](https://www.theglobaleconomy.com/rankings/GII_Index/#Cambodia)).

**12** Thomas, Jason. 2019. "How Innovative Is Your Country?" The ASEAN Post, 30 July. (<https://theaseanpost.com/artiele/how-innovative-your-country>).

**13** Senase, Jose Rodriguez T. 2019. "Cambodia Improves in WEF Global Competitiveness Ranking." Khmer Times, 10 October 10. (<https://www.khmertimeskh.com/650070/cambodia-improves-in-wef-global-competitiveness-ranking/>).

bottlenecks such as the dearth of sound regulations, the lack of stable systems and supportive policies to facilitate interactions between critical innovation agents (i.e. universities, start-ups, etc), and other such issues.<sup>14</sup> ■

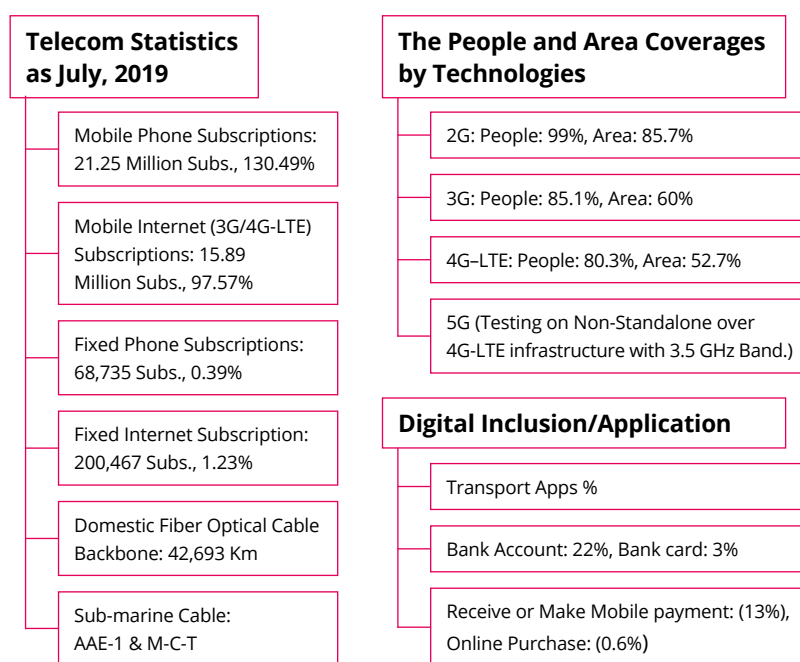
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**14** Schwab, Klaus. 2019. "The Global Competitiveness Report 2019." World Economic Forum. ([http://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf)).

# THE RATIONALES FOR GOVERNMENT INTERVENTION

The digital economies of developed countries are growing at an astonishing rate in the world today.<sup>15</sup> However, the reality of many developing nations including Cambodia, is that their economic digitalisation continues to be hampered by the paucity of first-rate digital infrastructure.<sup>16</sup> This in turn constrains their governments' efforts to harness digitalisation for both economic leapfrogging and societal transformation<sup>17</sup>. The following figure provides a holistic snapshot of this predicament in Cambodia:

**Figure 1: Cambodia's Key Digital Infrastructure Statistics (2019)**



Source: Telecommunication Regulator of Cambodia (2019)<sup>18</sup>

- 15 Heeks, Richard and Rumana Bukht. 2018. "Digital Economy Policy in Developing Countries." DOIDE Working Paper 6. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3540027](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3540027)).
- 16 "World Development Report 2016: Digital Dividends." The World Bank Group, 2016. (<https://www.worldbank.org/en/publication/wdr2016>).
- 17 Mittal, Sunil Bharti. 2019. "How to Build a Digital Infrastructure That Benefits Emerging Economies." World Economic Forum. (<https://www.weforum.org/agenda/2019/10/benefits-of-digital-infrastructure-emerging-economies/>).
- 18 Vutha, Im. 2019. "Digital Connectivity in Cambodia". Presentation, Telecommunication Regulator of Cambodia, Phnom Penh, Cambodia.

On the surface, Figure 1 illustrates that the present state of Cambodia's digital infrastructure is exemplary in many areas, despite certain deficiencies. However, its international position is disadvantaged, especially when ranked alongside its Southeast Asian counterparts. Based on the Network Readiness Index 2019 – a global, evidence-based assessment of the capacities of countries to maximise the opportunities presented by information and communications technology (ICT) – Cambodia ranked 107 out of 121 countries.<sup>19</sup> Substantial investment in digital infrastructure, coordinated by judicious government leadership, is a decisive starting point for developing nations to transition towards a well-functioning digital economy in the future.<sup>20</sup> Well-formulated government policies can enhance multiple facets of the digital economy either directly or indirectly.<sup>21</sup> Hence, government intervention is necessary for upscaling Cambodia's digital infrastructures in the following ways.

## 1. Institutionalising a 'Whole-of-Government' Approach to Digital Infrastructure Building

As reported by the Telecommunications Regulator of Cambodia,<sup>22</sup> the deficiencies in Cambodia's digital infrastructures go beyond limited internet connectivity and the low rate of domestic digital adoption. Overall, a fragmented digital transformation strategy also compounds the problem.

The government units liable for spearheading digital transformation are predominantly siloed and fragmented; there are also several institutions in the fray with a confusing patchwork of overlapping responsibilities. Moreover, many of the relevant policy frameworks are incoherent, disconnected and muddled, despite their significance in the overall digital transformation agendas.<sup>23</sup>

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19 "Network Readiness Index – Cambodia." *Network Readiness Index, 2020*. (<https://networkreadinessindex.org/>).

20 Quinones, Gerardo, Brian Nicholson, and Richard Heeks. 2014. "A Literature Review of E-Entrepreneurship in Emerging Economies: Positioning Research on Latin American Digital Startups." in *Entrepreneurship in BRICS*, ed. Renata Lèbre La Rove, Luiz De Magalhães Ozório, and Leonardo de Jesus Melo. New York, NY: Springer, 179–208. ([https://doi.org/10.1007/978-3-319-11412-5\\_11](https://doi.org/10.1007/978-3-319-11412-5_11)).

21 Beschoner et al. 2019. "The Digital Economy in Southeast Asia: Strengthening the Foundations for Future Growth." World Bank. (<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/328941558708267736/the-digital-economy-in-southeast-asia-strengthening-the-foundations-for-future-growth>).

22 Vutha, Im. 2019. "Digital Connectivity in Cambodia."

23 Cheng, Kimlong. 2019. "Linking Digital Silk Road to Cambodian Digital Economy." *Khmer Times*, 9 April. (<https://www.khmertimeskh.com/595096/linking-digital-silk-road-to-cambodian-digital-economy/>).

A case in point is the national digital entrepreneurship ecosystem. As the World Bank Group reports, there are various ministries accountable for the digital transformation project including the Ministry of Industry and Handicrafts (MIH), the Ministry of Posts and Telecommunication (MPTC), and the Ministry of Economy and Finance (MEF). Unfortunately, there is no central institution overseeing their responsibilities or ensuring the fulfilment of their stipulated agendas.<sup>24</sup> The 2018 Startup Policy, which endeavours to facilitate the continued growth of digital entrepreneurship, is also nested within the MPTC, although entrepreneurial activities generally pervade multiple sectors. These systemic failings highlight the disorganised character of the government's current policy on the digital transformation of Cambodia's economy.<sup>25</sup>

The whole-of-government approach, with its emphasis on enhancing the efficiency of governance and administrative coordination within public institutions, can potentially rectify these problems. Referencing rationalist traditions of public policy, the approach espouses the systematic centralisation of policy formulation and management to a central agency that can direct the implementation of the policy responses through clearer divisions of responsibilities and co-ordination between government departments. Working within such a coherent policy framework, the project of consolidating digital infrastructure can become more streamlined, with flexible and synergetic implementation.<sup>26</sup> Such positive developments could also address the aforementioned institutional failings of siloed and pillared operations, resulting in greater resource efficiency and policy effectiveness.<sup>27</sup>

Certain lessons from neighbouring Thailand can be instructive for Cambodian policymakers in this endeavour, given the similar governance and administrative arrangements of the two nations. Guided by its overarching 'Thailand 4.0' strategy, the Thai

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<sup>24</sup> Ehst, Michael et al. 2018. "Entrepreneurial Cambodia." *The World Bank*. (<https://doi.org/10.1596/30924>).

<sup>25</sup> Spiess, Robin. 2019. "Cambodia: Ready for a (Digital) Revolution?" *Southeast Asia Globe*, 28 March. (<https://southeastasiaglobe.com/cambodia-ready-for-a-digital-revolution>).

<sup>26</sup> Clarke, Amanda. 2019. "Digital Government Units: What Are They, and What Do They Mean for Digital Era Public Management Renewal?" *International Public Management Journal* 23, 3: 1–31. (<https://doi.org/10.1080/10967494.2019.1686447>).

<sup>27</sup> International Telecommunication Union. 2019. "SDG Digital Investment Framework – A Whole-of-Government Approach to Investing in Digital Technologies to Achieve the SDGs." *Digital Impact Alliance*. (<https://www.itu.int/pub/D-STR-DIGITAL.02-2019>).

government has been delegating the task of digital infrastructure modernisation to the 'Ministry of Digital Economy and Society' and the 'Electronic Government Agency'. These two bodies have been instrumental in coordinating infrastructure-building policies within various government institutions, enabling digital transformation across government levels, and assisting private sector digitalisation and innovation processes.<sup>28</sup> In the 2019 Networked Readiness Index, Thailand ranked 59<sup>th</sup> globally and 3<sup>rd</sup> best in the 'Emerging and Developing Asia' category.<sup>29</sup>

The abovementioned reforms can be plausibly mainstreamed across Cambodia's governance contexts. It has been suggested by experts that the country's Ministry of Economy and Finance (MEF) should spearhead the process, with their viable mandates on digital economic transformation and their reputation as the most innovative and progressive government institution in the country. In July 2020, the government announced comprehensive plans to empower the Ministry's critical functions in this domain, within the context of the 'long-term strategic policy framework for the digital economy' which is currently being drafted.<sup>30</sup> This clearly reflects the government's ongoing commitment to nurturing a supportive culture, conducive for incentivising and effectuating whole-of-government coordination.<sup>31</sup> To cushion against unwarranted implementation deficits, there has also been a renewed emphasis on accelerating public sector innovation within the relevant policy institutions (i.e. MEF). For instance, the Ministry of Civil Service (MCS) has been actively collaborating with the United Nations Development Programme (UNDP)'s Accelerator Lab to bolster agile governance and innovation within the public sector<sup>32</sup>.

The whole-of-government approach is not bereft of limitations. Given its conceptual origins in Western academic and policy discourse, some scholars assert

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**28** Sagarik, Danuvus et al. 2018. "E-Government 4.0 in Thailand: The Role of Central Agencies," *Information Polity* 23, 3: 343–353. (<https://doi.org/10.3233/IP-180006>).

**29** "Network Readiness Index – Cambodia." *Network Readiness Index, 2020*. (<https://networkreadinessindex.org/>).

**30** Te Vedle, Dirk Willem et al. 2020. 'Fostering an inclusive digital transformation in Cambodia.'

**31** Colgan, Anne, Lisa Kennedy, and Nuala Doherty. 2014. "A Primer on Implementing Whole of Government Approaches." Dublin, Centre for Effective Services. (<https://www.effektiveservices.org/resources/primer-on-implementing-whole-of-government-approaches>).

**32** Hussain, Ishtiaque and Vichet Seat. 2020. "Inclusive Public Service Innovation in Cambodia: Taking a Systems View," United Nations Development Programme. (<https://www.kh.undp.org/content/cambodia/en/home/blog/inclusive-public-service-innovation-in-cambodia-taking-a-system.html>).



that its core tenets are mostly incompatible, or even antithetical to, the policy conventions of non-Western governments.<sup>33</sup> This is due in part to such governments' risk-averse tendencies as well as the political resistance from non-conformist groups that prefer entrenching the status quo for their own motives.<sup>34</sup> Yet, such an argument is normatively biased, since it neglects the agency of these governments, particularly Cambodia's, to undertake 'policy translation' and make 'adaptations and modifications' of the hallmark features of the approach to 'indigenise' them within their national domestic policy contexts including those underpinning digital infrastructure consolidation.<sup>35</sup> As a result, the whole-of-government approach can be institutionalised in Cambodia's government settings if policymakers commit to reconfiguring its staple characteristics so that their contextual relevance in central policy agendas is accentuated. The success of the venture, however, also hinges on the political willingness of all relevant government agencies to implement these ambitious reform proposals. Otherwise, the issue of 'coercive institutional isomorphism' - the inability of institutions to reform due to 'formal and informal pressures on organisations by other organisations upon which they are dependent' - would prevail.<sup>36</sup>

## 2. Addressing Regional Digital Disparities via 'Differentiated Policy Responses'

Facilitative government intervention, especially from the central authority, is also pivotal for ensuring that the gains of digital infrastructure development are evenly distributed across the country. In Cambodia, the digital environment of many rural provinces still lags behind that of the capital due to a shortage of the necessary technical resources and administrative capacities in local governments.<sup>37</sup> As documented by

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33 Ling, Tom. 2002. "Delivering Joined-up Government in the UK: Dimensions, Issues and Problems." *Public Administration* 80, 4: 615–42. (<https://doi.org/10.1111/1467-9299.00321>).

34 Carey, Gemma and Brad Crammond. 2015. "What Works in Joined-Up Government? An Evidence Synthesis." *International Journal of Public Administration* 38, 13–14: 1020–29. (<https://doi.org/10.1080/01900692.2014.982292>).

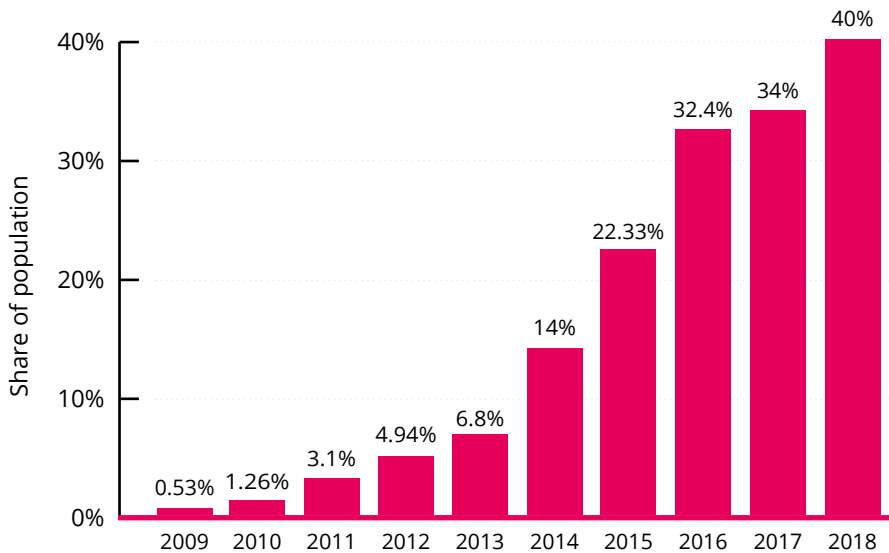
35 Stone, Diane. 2012. "Transfer and Translation of Policy." *Policy Studies* 33, 6: 483–99. (<https://doi.org/10.1080/01442872.2012.695933>).

36 DiMaggio, Paul and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48, 2: 150. (<https://doi.org/10.2307/2095101>).

37 UNCTAD. 2017. "Cambodia Rapid E-Trade Readiness Assessment." New York: United Nations. ([https://unctad.org/en/PublicationsLibrary/dtlstict2017d2\\_en.pdf](https://unctad.org/en/PublicationsLibrary/dtlstict2017d2_en.pdf)).

the International Telecommunications Union,<sup>38</sup> the total internet penetration rate for Cambodia in 2018 was recorded at only 40% of the total population, although this is a considerable hike from previous years (see Figure 2). The actual disparity between urban and rural rates is difficult to measure conclusively given the scarcity of region-specific and time-relevant data. The Asia Foundation, however, surveyed approximately 2000 Cambodians in 2016 on the frequency of their mobile and internet usage. The study discovered that access to internet connectivity was more feasible for urban than rural residents (48% vs 31%).<sup>39</sup> This urban-rural digital divide results from the imbalance of modern digital infrastructures across different regions in Cambodia.

**Figure 2: Internet Penetration Rate in Cambodia from 2009 to 2018**



Source: International Telecommunications Union, 2020 (as cited in Statista)<sup>40</sup>

<sup>38</sup> “Cambodia: Internet Penetration Rate 2009-2018.” Statista, 2020. (<https://www.statista.com/statistics/766013/internet-penetration-rate-cambodia/>).

<sup>39</sup> Phong, Kimchhoy, Lihol Srou, and Javier Solá. 2016. “Mobile Phones and Internet Use in Cambodia 2016: Research Study.” The Asia Foundation. (<https://asiafoundation.org/wp-content/uploads/2016/12/Mobile-Phones-and-Internet-Use-in-Cambodia-2016.pdf>).

<sup>40</sup> Statista. 2020. “Cambodia: Internet.”

The Cambodian government has been forging partnerships with multiple telecommunication companies to harness their capacities and next-generation technologies for expanding bandwidth connectivity.<sup>41</sup> However, these arrangements still lack a focused and targeted scope for provincial digitalisation. In the expansion of 5G networks, for instance, the Ministry of Post and Telecommunications is cooperating with telecommunications legions like Smart Axiata, Huawei, ZTE, and Cellcard to roll out 5G base stations across the country.<sup>42</sup> Yet, their targeted areas include only major cities (i.e. Phnom Penh and Siem Reap), while plans for other regions are still in development. Fibre optic connections – the backbone of 5G connectivity – are also either substandard or absent in certain provinces, keeping rural broadband connectivity far from being ubiquitous, instantaneous, and reliable.<sup>43</sup> Although electricity access is widespread, there is also the problem of inadequate and expensive electric power supply (due to absence of a national grid) in some rural areas, thereby resulting in frequent blackouts.<sup>44</sup>

One potential solution to addressing this setback is the strategic leveraging of ‘Public-Private Partnerships (PPPs)’ with several domestic and international stakeholders. According to Central Public-Private Partnerships Unit of Cambodia’s Economic Ministry, PPPs are the ‘agreements between the State and one or more Private Partners to restore, repair, expand, build, operate and/or maintain public infrastructure, project assets, or to provide public services within a certain period of time, under which the private partner shall invest, bear risks and receive benefits based on performance and all of which shall be stipulated in the PPP contract’.<sup>45</sup> In Cambodia, PPPs have been widely deployed in many sectors of infrastructure development, contributing enormously to the livelihoods of rural and urban residents. In the

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<sup>41</sup> Yang Yi. 2019. “Spotlight: Cambodia’s Leading Telco Operator Partners with China’s Huawei to Bring 5G to Country.” *Xinhua Net*, 9 July. ([http://www.xinhuanet.com/english/2019-07/09/c\\_138209858\\_2.htm](http://www.xinhuanet.com/english/2019-07/09/c_138209858_2.htm)).

<sup>42</sup> Sbeglia, Catherine. 2020. “With a ‘Lot at Stake,’ Cambodia Inches towards 5G Deployment.” *RCR Wireless News*, 16 June. (<https://www.rcrwireless.com/20200610/5g/cambodia-inches-towards-5g-deployment>).

<sup>43</sup> Turton, Shaun and Tomoya Onishi. 2019. “Cambodia 5G Set to Leapfrog ASEAN Rivals with Huawei and ZTE.” *Nikkei Asian Review*, 5 September. (<https://asia.nikkei.com/Spotlight/5G-networks/Cambodia-5G-set-to-leapfrog-ASEAN-rivals-with-Huawei-and-ZTE>).

<sup>44</sup> Soeng, Roth, Ludo Cuyvers, and Morarith Soeung. 2019. “E-Commerce Development and Internet Banking Adoption in Cambodia,” in *Developing the Digital Economy in ASEAN*, ed. Lurong Chen and Fukunari Kimura. New York, NY: Routledge, 85–97.

<sup>45</sup> Central Public-Private Partnerships Unit. “What are PPPs.” Ministry of Economy and Finance, 2020.

water sector, for instance, macro-scale PPPs for reservoir and dam constructions, urban water supply management, and other such projects, have successfully provided nearly 78.5% of the population (as of 2020) sufficient access to clean water and sanitation facilities.<sup>46</sup> The instrumentalisation of PPPs can also accelerate digital infrastructure consolidation in both the capital city and under-connected regions in Cambodia, as they can fundamentally mobilise resources and policy efforts from the private sector, governments, and organisations towards the overarching mission of digital economy development.<sup>47</sup>

When situated within the frameworks of local government-led, place-based approaches, these measures can also provide greater autonomy to local authorities to design innovative platforms for crowdsourcing the collective intelligence of the local community actors, thereby widening the democratic space for their participation in policymaking. They can enable local authorities to have greater leeway in ‘configuring’ and ‘contextualising’ policy priorities, invigorating the political accountability of central policymakers to local governments, and expanding the scope of the broader development strategies towards local demands.<sup>48</sup> PPPs are also recommended as salient tools to minimise the ‘transaction costs’ in local governments’ consolidation of digital infrastructures in disadvantaged areas.<sup>49</sup> They can help with crowdsourcing resources and information, invigorating productivity via collaborative approaches, and drawing in working talents from different sectors to work on either a permanent or temporary basis, depending on the incentives being offered.<sup>50</sup> Without them, the development needs of local provinces will remain de-prioritised.<sup>51</sup>

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<sup>46</sup> PPP Knowledge Lab. 2020. “Cambodia.”

<sup>47</sup> Le Fevre Cervini, Enzo Maria. 2019. “The Role of Public-Private Partnership in Innovating Digital Service,” Italian Institute for International Political Studies. (<https://www.ispionline.it/it/publicazione/role-public-private-partnership-innovating-digital-service-23305>).

<sup>48</sup> Fong, Michelle. 2009. “Digital Divide: The Case of Developing Countries.” *Issues in Informing Science and Information Technology* 6: 471–78. (<http://iisit.org/Vol6/IISITv6p471-478Fong597.pdf>).

<sup>49</sup> Baxter, David. 2020. “Africa Must Embrace Digital Infrastructure Governance. PPPs Can Help.” *World Bank Blogs*, 29 January (<https://blogs.worldbank.org/ppps/africa-must-embrace-digital-infrastructure-governance-ppps-can-help>).

<sup>50</sup> Witters, Louis, Revital Marom, and Kurt Steinert. 2012. “The Role of Public-Private Partnerships in Driving Innovation.” in *The Global Innovation Index 2012*. Geneva, Switzerland: World Intellectual Property Organization, 81–87. ([https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2012-chapter2.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2012-chapter2.pdf)).

<sup>51</sup> Fong, Michelle. 2009. “Digital Divide: The Case of Developing Countries.”

The experience of Malaysia regarding such localised policy intervention could be useful for Cambodian policymakers. Through its national digital transformation strategy, the Malaysian central government has enacted a panoply of region-specific strategies to narrow urban-rural digital disparities, most of which also embed comprehensive PPP arrangements that seek to harness knowledge and know-how from the private sector for works linked to regional digitalization.<sup>52</sup> In 2017, for example, it launched the ‘*Sarawak Digital Economy Strategy 2018–2022*’.<sup>53</sup> Amongst its 47 Strategic Actions, Action 35 prioritises ‘liberalizing the infrastructure sector’ to attract PPPs centred on bolstering digital infrastructures,<sup>54</sup> which later enabled the Sarawak Multimedia Authority (SMA) to forge nearly 10 Memorandums of Understanding with multiple international partners on projects pertaining to the aforementioned agenda. For example, SACOFA – Sarawak’s leading telecommunications provider – has been working collaboratively with IT stakeholders including Datastream Technology Sdn Bhd (DST) and XPERANTI to enhance high-speed internet services in Sarawak.<sup>55</sup> As of 2020, Sarawak has 91.8% populated coverage, and is expected to reach 96.9% in 2022, according to the Malaysian Communications and Multimedia Commission (MCMC).<sup>56</sup>

These undertakings clearly reflect the government’s ongoing efforts to upgrade the national digital economy without leaving any potential regions behind.

For Cambodia, the landmark ICT Masterplan 2020 does underscore the importance of private sector contributions to deepening digital connectivity in provincial areas.<sup>57</sup> Yet, the extent of targeted digitalisation for specific provinces is still limited. Further aggravating the problem is the presence of an ‘urban bias’ in most of the government’s policy orientations, to the detriment of rural communities.<sup>58</sup>

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52 “*Malaysia’s Digital Economy: A New Driver of Development*.” *The World Bank*, 2018. (<https://openknowledge.worldbank.org/bitstream/handle/10986/30383/129777.pdf>).

53 Lau, Rachel and Sharon Kong. 2019. “*The Rise of Sarawak’s Digital Economy*.” *Borneo Post Online*, 13 January. (<https://www.theborneopost.com/2019/01/13/the-rise-of-sarawaks-digital-economy/>).

54 State Service Modernisation Unit. 2017. “*Sarawak Digital Economy Strategy 2018–2022: An Overview Booklet*.” Sarawak, Malaysia: State Service Modernisation Unit. (<https://www.scope.net.my/wp-content/uploads/2019/10/digitaleconomybooklet-min.pdf>).

55 Sharaon, Alita. 2019. “*Sarawak will push to grow the digital economy*.” *Open Gov*, 9 July. (<https://opengovasia.com/sarawak-will-push-to-grow-digital-economy/>).

56 Kong, Sharon. 2020. “*The next frontier towards Digital Sarawak*,” *Borneo Post Online*, 11 October. (<https://www.theborneopost.com/2020/10/11/the-next-frontier-towards-digital-sarawak/>).

57 KOICA. 2014. “*Cambodia ICT Master Plan*.”

58 Lawreniuk, Sabina. 2016. “*The Ties That Bind: Rural-Urban Linkages in Cambodia’s Migration System*,” in *The Handbook of Contemporary Cambodia*, ed. Katherine Brickell and Simon Springer. Milton Park, Oxford: Taylor and Francis, 202–11.

Going forward, it is then imperative for the government to mobilise more PPPs to upgrade the digital infrastructures of under-connected provinces. This will go a long way in gauging the effectiveness of the digital economy to meaningfully enable economic development without entrenching any existing inequalities.<sup>59</sup>

It is important to acknowledge that PPPs, despite their strengths, are also fraught with shortcomings. Common manifestations include the diminution of government authority owing to private capture, the potential uptick in administrative costs resulting from budget miscalculations and other such issues, or even the dilution of the government's legitimacy due to the misconduct of private agents and other factors.<sup>60</sup> Some of these problems have also materialised in Cambodia's PPP landscape. In a recent study,<sup>61</sup> challenges like the absence of a central legal framework to formally govern the operations of both public and private entities, the lack of institutional and legal safeguards in the implementation process<sup>62</sup> and also a want of a central governance unit for managing the PPPs have been highlighted. Furthermore, the capacities of the responsible government officials to implement PPPs remains relatively limited.<sup>63</sup> Unless these impediments are properly addressed, through rigorous remedial and oversight measures, the promises of PPPs in accelerating the development and maturation of Cambodia's internet backbone will remain unfulfilled. Pertaining to place-based approaches, their successful implementation also hinges on the degree of the current government's commitments to its decentralisation and de-concentrating (D&D) reforms. There are, however, still a number of bottlenecks to overcome, such as 'the lack of an overarching vision on decentralisation, inadequate funding and vertical fiscal imbalances, and a few sequencing and capacity constraints.'<sup>64</sup>

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<sup>59</sup> Lowden, Richard James et al. 2018. "Malaysia's Digital Economy: A New Driver of Development." *The World Bank Group*. (<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/435571536244480293/malysias-digital-economy-a-new-driver-of-development>).

<sup>60</sup> Lowden, Richard James et al. 2018. "Malaysia's Digital Economy: A New Driver of Development."

<sup>61</sup> Bun Eang Sar, Meyka Chea, and Chanpisey Ung. 2020. "Public-Private Partnerships in Cambodia: Issues and Solution." *Open Journal of Business and Management* 8, 3: 1216–1225. (<https://doi.org/10.4236/ojbm.2020.83078>).

<sup>62</sup> Bun Eang Sar, Meyka Chea, and Chanpisey Ung. 2020. "Public-Private Partnerships in Cambodia: Issues and Solution."

<sup>63</sup> Bun Eang Sar, Meyka Chea, and Chanpisey Ung. 2020. "Public-Private Partnerships in Cambodia: Issues and Solution."

<sup>64</sup> So, Sokbunthoeun, Sissoko Filly, and Kurshi Bhatti Zubair. 2018. "Cambodia's Cross-Cutting Reforms." *The World Bank Group*. (<http://documents1.worldbank.org/curated/en/767141558361337255/pdf/Cambodias-Cross-Cutting-Reforms-Public-Financial-Management-Decentralization-and-Public-Administration-Reforms-Achievements-Coordination-Challenges-and-Next-Steps.pdf>).

### 3. Designing Rules and Regulations: The Missing 'Analogue Complements'

According to the World Bank, a sound and up-to-date regulatory framework is one amongst the essential 'analogue complements' that can expedite the process of digital economic transformation by 'creating a business environment where firms can leverage the internet to compete and innovate for the benefit of consumers'.<sup>65</sup> Without it, governments, particularly in underdeveloped economies, would find it difficult to incentivise domestic businesses to leverage emerging digital technologies for their own growth as well as national economic development.<sup>66</sup> The significance of government intervention in Cambodia's legal environment, specifically concerning digital economy regulations, is justifiable for these reasons.

There is a dearth of coherent and well-grounded regulations in the area of digital commerce and entrepreneurship in Cambodia to facilitate processes and engender confidence amongst aspiring investors.<sup>67</sup> In a report entitled *The Digital Economy in Southeast Asia: Strengthening the Foundations for Future Growth*, the World Bank Group echoed that Cambodia is the only country in the region which does not have sufficient legal and regulatory instruments to enable electronic transactions, online purchases, and data protection and privacy (see Figure 3).<sup>68</sup>

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<sup>65</sup> World Bank. 2016. "Digital Dividends."

<sup>66</sup> Bukht, Rumana and Richard Heeks. 2017. "Defining, Conceptualising and Measuring the Digital Economy." *Development Informatics Working Paper 68*. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3431732](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431732)).

<sup>67</sup> Kem et al. 2019. "Startup Kingdom: A Look At Cambodia's Digital Startup Ecosystem." *Mekong Strategic Partners and Raintree Cambodia*, 26 April. (<http://geeksin cambodia.com/startup-kingdom-a-look-at-cambodias-digital-startup-ecosystem/>).

<sup>68</sup> World Bank Group. 2020. "Digital Economy in Southeast Asia."

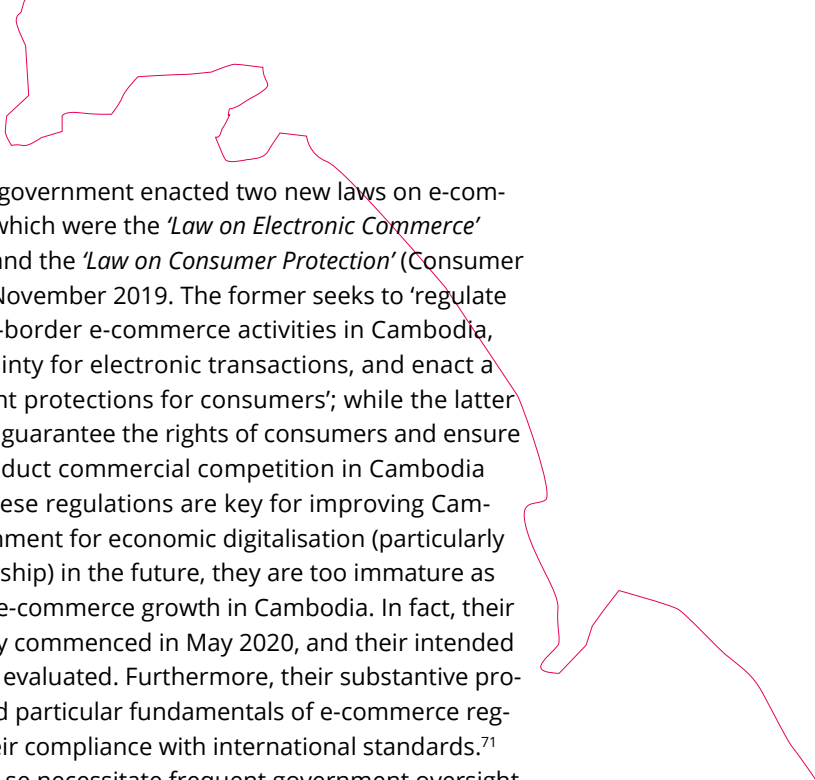
**Figure 3: Legal Frameworks in ASEAN Countries for Electronic Transactions, Data Protection/Privacy, and Online Purchases**

	<b>Does the Country Have a Legal Framework for Electronic Transactions/E-Signature?</b>	<b>Does the Country Have a Legal Framework for Data Protection/Privacy Online?</b>	<b>Does the Country Have a Legal Framework for Consumer Protection when Purchasing Online?</b>	<b>Does the Country Have a Legal Framework for Cyber-crime Prevention?</b>
<b>Brunei Darussalam</b>	Yes	No	Yes	Yes
<b>Cambodia</b>	Draft	No	Draft	Draft
<b>Indonesia</b>	Yes	Yes	Yes	Yes
<b>Lao PDR</b>	Yes	Yes	Draft	Yes
<b>Malaysia</b>	Yes	Yes	Yes	Yes
<b>Myanmar</b>	Yes	No	Yes	Yes
<b>Philippines</b>	Yes	Yes	Yes	Yes
<b>Singapore</b>	Yes	Yes	Yes	Yes
<b>Thailand</b>	Yes	Yes	Yes	Yes
<b>Vietnam</b>	Yes	Yes	Yes	Yes

Source: World Bank Group<sup>69</sup>  
 UNCTAD Cyberlaw Tracker.  
[http://unctad.org/en/Pages/DTL/STI\\_and\\_ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx](http://unctad.org/en/Pages/DTL/STI_and_ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx)

<sup>69</sup> World Bank Group. 2020. "Digital Economy in Southeast Asia." 82.





To remedy this, the government enacted two new laws on e-commerce regulations, which were the ‘*Law on Electronic Commerce*’ (E-Commerce Law) and the ‘*Law on Consumer Protection*’ (Consumer Protection Law), in November 2019. The former seeks to ‘regulate domestic and cross-border e-commerce activities in Cambodia, establish legal certainty for electronic transactions, and enact a number of important protections for consumers’; while the latter ‘establishes rules to guarantee the rights of consumers and ensure that businesses conduct commercial competition in Cambodia fairly’.<sup>70</sup> Although these regulations are key for improving Cambodia’s legal environment for economic digitalisation (particularly digital entrepreneurship) in the future, they are too immature as yet for accelerating e-commerce growth in Cambodia. In fact, their implementation only commenced in May 2020, and their intended effects are yet to be evaluated. Furthermore, their substantive provisions still disregard particular fundamentals of e-commerce regulations, despite their compliance with international standards.<sup>71</sup> These problems per se necessitate frequent government oversight of their implementation as well as other remedial measures, but this needs to be done without impeding national e-commerce development and other facets of economic digitalisation.

A closer examination of Cambodia’s legal landscape also reveals another concern warranting tactful government resolutions – the proliferation of new platform-based businesses in its digital economy, which spotlights the fact that the scope of existing legislations does not cover new digital business models.<sup>72</sup> A case in point is the ‘sharing economy’ – a peer-to-peer platform through which consumers and producers collaborate in the online transactions of assets and services, facilitated by a centralised digital network or a legitimate intermediary process.<sup>73</sup>

In Cambodia’s current digital landscape, there is a growing emergence of sharing-economy industries like ‘ride-hailing companies’ (i.e. Grab and PassApp)

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<sup>70</sup> Bunthan, Pichrotanak and Jay Cohen. 2020. “What Cambodia’s New Law on Electronic Commerce Means for Business.” Tilleke & Gibbens, 2 March. (<https://www.tilleke.com/resources/what-cambodias-new-law-electronic-commerce-means-business>).

<sup>71</sup> Bunthan, Pichrotanak and Jay Cohen. 2020. “What Cambodia’s New Law on Electronic Commerce Means for Business.”

<sup>72</sup> Livingston, Kevin and Poovenraj Kanagaraj. 2019. “Peer-to-Peer Lodging Culture Takes Root in Cambodia.” *Capital Cambodia*, 25 July. (<https://capitalcambodia.com/peer-to-peer-lodging-culture-takes-root-in-cambodia>).

<sup>73</sup> Lee, Cassey. 2016. “To Uberize or Not to Uberize? Opportunities and Challenges in Southeast Asia’s Sharing Economy.” *IS-EAS Yusof Ishak Institute’s Perspective* No.33. (<https://think-asia.org/handle/11540/9150>).

alongside peer-to-peer accommodation rental services (i.e. Air-BnB).<sup>74-75</sup> Although they have had numerous positive economic impacts, their operations also pose myriad regulatory challenges. For example, a number of civilian ride-hailing service providers in Cambodia are actually undermining tax regulations and employment registration processes, since the majority are not officially licensed drivers due to ambiguities surrounding their occupational status.<sup>76</sup> In November 2017, the Ministry of Public Works and Transport seized over 170 unregistered ride-hailing *Tuks Tuks* (Khmer terminology for 'rickshaw cabs') on the grounds that most drivers were operating without valid licenses.<sup>77</sup> This could lead to normalising tax evasion and rule-breaking on the part of the registered drivers and their parent companies, causing further 'market de-institutionalisation',<sup>78</sup> and leading away from the goal of full formalisation of the economy – a central engine of economic development. There is thus a need for the government to evoke 'differentiated regulatory responses' to confront such issues while respecting that 'the types of transactions occurring differ substantially in how they affect the real world'.<sup>79</sup> It is also imperative for the government to tailor existing regulations to effectively govern the newly emerging business models of sharing industries. Similarly, there must be 'fit-for-purposes regulatory structures' that feasibly 'permit the growth of sharing economy segments in a way that also accounts for the needs of all constituencies and is within the laws as written or newly conceived'.<sup>80</sup> ■

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**74** Turton, Shaun and Bopha Phorn. 2019. "Grab Takes on Cambodia's PassApp for Ride-Hailing Supremacy." *Nikkei Asian Review*, 9 July 8. (<https://asia.nikkei.com/Business/Startups/Grab-takes-on-Cambodia-s-PassApp-for-ride-hailing-supremacy>).

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**78** Beerepoot, Niels and Bart Lambregts. "Competition in Online Job Marketplaces: Towards a Global Labour Market for Outsourcing Services?" *Global Networks* 15, 2: 236–55. (<https://doi.org/10.1111/glob.12051>).

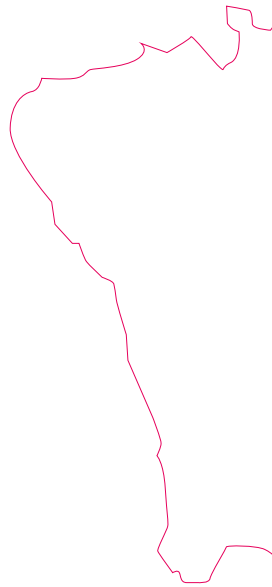
**79** Miller, Stephen. 2016. "First Principles for Regulating the Sharing Economy." *Harvard Journal on Legislation* 53, 147: 151. ([https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2568016](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2568016)).


**80** Miller, Stephen. 2016. "First Principles for Regulating the Sharing Economy." 153.

# CONCLUSION

The central thesis of this paper articulates that the role of the government in empowering Cambodia's digital economy is important for several fundamental reasons. Firstly, the speed with which digital infrastructure is being modernised is still relatively slow due to a series of administrative and governance challenges, most of which concern the institutional rigidities that stymie the responsiveness of essential policy undertakings to matters of priority. Therefore, it is imperative for the government to pursue a 'whole-of-government approach' to digital infrastructure development which will effectively overcome the institutional inertias present in the system today. Secondly, the problem of urban-rural digital disparities also warrants the astute implementation of differentiated policy interventions centred on narrowing the disparities, thereby producing both short and long-term benefits for economic digitalisation. Finally, the legal environment upon which the digital economy can thrive is still maturing, which suggests that regular government supervision is still required for diagnostic and improvement purposes.

It is clear from these findings that the complexities of digital economy development and governance in least-developed countries, particularly in Cambodia, cannot be effectively addressed without prudent government intervention, since its national digital economy is still in its nascent stage of development. Therefore this intervention is needed particularly in structuring the necessary foundations for continued growth of their digital economies until they reach a mature and advanced state conducive for self-governance without intensive government interventions. Aside from these novel academic contributions, these findings are also useful for informing the current and future trajectories of digital economy policies in Cambodia. Going forward, it is then vital for the Cambodian government to work on the following policy suggestions to further augment its digital economy. Firstly, policymakers should continue identifying the critical and subtle barriers to its national digital process (aside from the ones above) emanating from both current and past policies. This can be achieved particularly through the conduct of rigorous and open policy researches which could be jointly commissioned with experts within emerg-





ing research institutions and think tanks such as the Centre for Inclusive Digital Economy of the Asian Vision Institute (AVI), Future Forum, and Konrad-Adenauer-Stiftung (KAS). Doing so will enable the government to better harness the ‘collective intelligence’ of the public to advance central digital transformation agendas more feasibly and effectively. Additionally, the existing reforms to stimulate public sector innovation, particularly in areas pertaining to the promotion of e-governance and the ‘government as a platform’ initiative, should be further implemented and emboldened. This will enhance the efficiency of public institutions in actualising the digital transformation agendas within the context of the Cambodia National Action Plan for Public Administration Reform (2019–2030). Finally, policymakers should cement their commitments to implementing a whole-of-society approach to accelerating digital transformation within existing policy frameworks, which will allow for greater contributions from various actors within the public and private spheres, while remaining open to learning and emulating the successful lessons and best practices of other nations, both within and beyond Southeast Asia.

On the normative front, policymakers should firmly acknowledge that while government intervention is indeed paramount, the political context within which it is carried out can also have a bearing on its overall effectiveness in digital economy development, among other things. As Cambodia’s current political climate is still undergoing episodic disruptions to its democratic stability, there has been speculation that perpetual government involvement in the digital sphere can give rise to ‘Orwellian political forces’ ranging from networked illiberalism and surveillance culture to platform politicking. This could result in ‘digital authoritarianism’ inhibiting the already erratic democratic transition. The lack of attention to these perils could characterise the digital economy as a smokescreen for covering (or even legitimising) authoritarian practices within the virtual domain rather than as a growth enabler. Therefore, further research into this area should investigate the possibility of these developments and offer the amicable solutions to avert them.

## The Author

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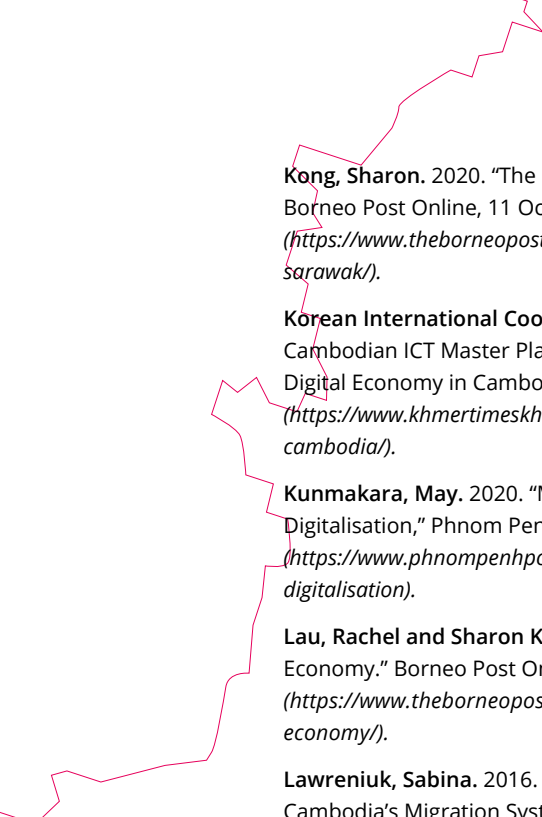
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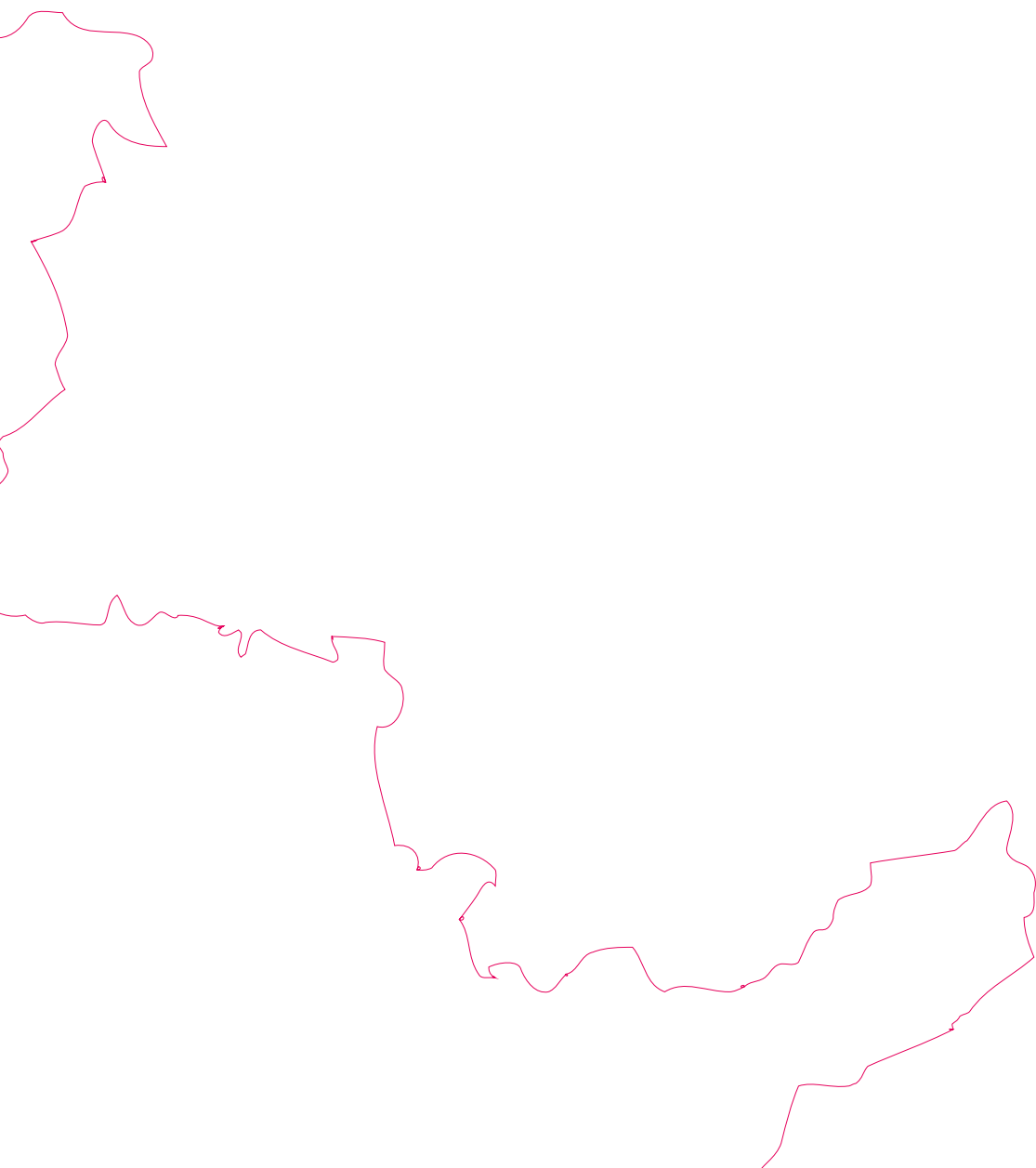
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# 4

## FACILITATING TRADE AND E-COMMERCE







# **ADDRESSING BARRIERS TO CROSS-BORDER E-PAYMENTS IN ASIA**

Dr Deborah Elms  
Sebastian Cortes-Sanchez  
Binderiya Makhbal



# KEY TAKEAWAYS

- **The Opportunity:** Cross-border digital payments are a critical component of the online services ecosystem that allow firms to sell around the world far more easily and cheaply than ever before.
- **The Challenge:** Despite the opportunities created by a more inclusive and efficient regional e-payments ecosystem, there remain key regulatory challenges to the development of more integrated and interoperable e-payments regional ecosystems.
- **Data Related Barriers:** Motivated by concerns related to cybersecurity, consumer protection, data privacy and competition, some governments in Asia are putting in place financial data-related restrictions that act as a barrier to market entry and operations for payment service providers.
- **Lack of Interoperability:** The proliferation of new payment technologies has led to an increasingly complex set of systems and technical standards with significant variation by country and region. A lack of interoperability between those standards has created additional friction in the management of cross-border digital payments.
- **A Potential Solution:** Countries in the region are increasingly using Free Trade Agreements (FTAs) as a mechanism to lower barriers to the delivery of cross-border e-payment services and encourage the interoperability of e-payment systems.
- **Key Approach:** An assessment of the scope and depth of FTA provisions finds that commitments under most of these agreements can be non-binding and may include exceptions and carve-outs on provisions of cross-border financial services. Therefore, the authors recommend:
- **Recommendation 1: Limit or eliminate discriminatory measures and data related restrictions by acknowledging and addressing government policy priorities:** Ensure future FTA commitments on the localisation of computing facilities for financial services and the movement of financial data across borders; minimise or eliminate market access restrictions while strengthening transparency and regulatory oversight in the delivery of cross-border e-payment services.
- **Recommendation 2: Encourage and operationalise cross-border interoperability** by supporting FTA commitments that stress increased interoperability and use of internationally accepted standards and best practices.

Payment services are a critical component of the online services ecosystem that allows consumers the convenience of purchasing goods and services from merchants globally; and for firms to sell their products and services around the world far more easily and cheaply than ever before. Digital payments solutions increase productivity, transparency, competition and give firms of all sizes, especially micro, small and medium-sized enterprises (MSMEs), a wider international market.

In 2019, the Asia-Pacific region overtook Europe and North America to become the world leader in volumes of non-cash transactions, which reached US\$ 234.6 billion in 2019 and are expected to reach US\$ 493.2 billion in 2023.<sup>1</sup> This is, in part, a result of the region's rapidly expanding online market, which is projected to grow at an average rate of 25% to 35% per year over the next five to ten years.<sup>2</sup> The continued disruption caused by the Covid-19 pandemic has dramatically accelerated the migration of firms online, making past estimates of growth quickly outdated.

Despite the importance of digital payments for trade in Asia, regulatory agencies responsible for consumer protection, financial stability, and other public interests are grappling with the legitimate challenges of updating policy frameworks to account for technological innovation, increased cross-border trade, and changes in consumer behaviour. In a region as diverse as the Asia-Pacific, differences between economies in technological maturity, regulations, standards, cost, digital access, and security add to the costs and complexity of developing regional ecosystems of support for cross-border e-payments. Such differences are already complex at the domestic levels within the region and, when payments are being made and settled across borders, the challenges of efficient and seamless operations are compounded.

Governments in the region are increasingly making it their priority to update the governance of payment systems and encourage greater access, efficiency, and interoperability in the systems. However, new payment innovations have increased the number of geographies, stakeholders, transactions, intermediaries and

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<sup>1</sup> Capgemini Research Institute. 2020. "World Payments Report 2020." (<https://world-paymentsreport.com/wp-content/uploads/sites/5/2020/10/World-Payments-Report-2020.pdf>).

<sup>2</sup> Chen, Lurong and Fukunari Kimura. 2020. *E-Commerce Connectivity in ASEAN*.

standards required to settle cross-border payments. Ensuring secure, reliable and transparent cross-border e-payments, reducing barriers to market access and data in the provision of cross-border e-payment services, increasing the interoperability of domestic approaches to the regulation of e-payment standards and promoting innovation enabling regulatory oversight are all policy challenges that regulators in the region are trying to address.

One way that officials in the Asia-Pacific are attempting to tackle coordination challenges is through provisions embedded in Free Trade Agreements (FTAs). Although payments are not explicitly mentioned in most FTAs, some of the underlying issues are tackled, such as through commitments towards allowing data to flow across borders, through specific elements of a financial services chapter, or country-specific commitments for market access.

Payments pose an issue that often falls between the jurisdictions of multiple actors at the domestic level. In cross-border settings, the challenge of managing payments also sits between and across ministries. Payments fit within the broader category of financial services, originally managed by banks alone. Banks are typically regulated by finance ministries and central banks. But as demand has grown for payment services, other vendors have become involved. Governments that have created digital economy ministries, for example, have started to become active in electronic payments policy making. Trade officials clearly see the need for efficient and effective cross-border payments solutions to help facilitate the movement of goods and services across borders.

This paper highlights the role that trade agreements and other types of governance mechanisms can play in enabling the use and development of more effective, secure and efficient regional e-payments ecosystems. First, the paper assesses the scope, depth and relevance of recent FTAs in addressing restrictions on market access. Second, the paper provides a stocktake of existing regulatory initiatives promoting the interoperability and adoption of international payments-related standards in the Asia Pacific region. Finally, the paper outlines key takeaways for policymakers, adding value and offering new insights into the policy challenges and opportunities for cross-border e-payments and related services in the Asia-Pacific region and beyond. ■

# RESTRICTIONS ON CROSS-BORDER PAYMENTS

Motivated by concerns like cybersecurity, consumer protection, data privacy or competition, some governments in the Asia-Pacific region are changing regulations for data. While many worries are legitimate, restrictions on data can also act as barriers to market entry or operations for payment service providers. Such obstacles can come in the form of domestic processing mandates, discriminatory licensing, foreign equity caps, or data localisation requirements.

In some instances, policy outcomes can be particularly perverse. For instance, some restrictions like the use of onshore data processing or the use of a national payment gateway have been imposed partly to ensure more secure data flows, but these solutions can actually create greater risk of cyber breaches or data hacks.

Traditionally, financial regulators prioritise different regulatory objectives. These may include financial stability, financial inclusion, consumer protection, cybersecurity and competition. With the proliferation of digital payments technologies and services, financial regulators are grappling with updating old policy frameworks or developing new ones that will better address their concerns and still account for technological innovation, changes in consumer behaviour, and the potential for increased risks.

In some cases, regulators have chosen to enact policies restricting the cross-border flow of financial-related data. These have been implemented for a variety of reasons that include privacy and cybersecurity concerns, access to payment data and the protection of domestic payments providers from foreign competitors.<sup>3</sup> Restrictions on cross-border data flows and local data storage requirements – known as data localisation – often require financial services firms to set up duplicative data storage facilities in each of the countries where they operate.<sup>4</sup> Data processing or routing requirements may require firms to send transaction data to a designated firm.<sup>5</sup>

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3 WEF. 2019. “Exploring International Data Flow Governance Platform for Shaping the Future of Trade and Global Economic Interdependence.” *World Economic Forum Report*. ([http://www3.weforum.org/docs/WEF\\_Trade\\_Policy\\_Data\\_Flows\\_Report.pdf](http://www3.weforum.org/docs/WEF_Trade_Policy_Data_Flows_Report.pdf)).

4 WEF. 2018. “Addressing E-Payment Challenges in Global E-Commerce.” *World Economic Forum Report*. ([http://www3.weforum.org/docs/WEF\\_Addressing\\_E-Payment\\_Challenges\\_in\\_Global\\_E-Commerce\\_clean.pdf](http://www3.weforum.org/docs/WEF_Addressing_E-Payment_Challenges_in_Global_E-Commerce_clean.pdf)).

5 WEF. 2018. “Addressing E-Payment Challenges in Global E-Commerce.”

However, a growing body of research suggests that these types of restrictions often fail to achieve many of their intended goals. Instead, they add significant costs to the local economy, reduce data security, and do little to improve consumer privacy.<sup>6</sup> The reasons are manifold:

**A/ Cross-Border Data Transfers are Required to Settle Digital Payments**

Data transfers are critical for electronic information exchanges which are required to capture, process and authorise payment transactions between multiple stakeholders within a payments network. This process requires cross-border flow of data, when settling *both* domestic and cross-border transactions, since even in cases where consumer and merchant are located in the same market, the processing of the transactions is often carried out elsewhere.<sup>7</sup> As an example, the need to check transactions for fraud may require use of databases located outside the country. Thus, restrictions on the movement of data might make what appear to be purely domestic online or cashless transactions impossible.

**B/ Localisation Requirements Limit Economies of Scale for Payments Providers**

Localisation requirements force firms to set up costly, often duplicative data storage facilities, or exit the market. Payment service providers have to invest up-front in processing infrastructures, highly secure telecommunication facilities and data storage.<sup>8</sup> By forcing such entities, especially if they are start-ups, duplicate their full service in each domestic market, these rules prevent economies of scale for payment services, as large volumes of payment transactions reduce per unit costs.<sup>9</sup>

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<sup>6</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce." *Asia-Pacific Economic Cooperation (APEC). 2019., Fostering an Enabling Policy and Regulatory Environment in APEC for Data-Utilizing Businesses.*

<sup>7</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce."

<sup>8</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce."

<sup>9</sup> *Asia-Pacific Economic Cooperation (APEC). 2019. Fostering an Enabling Policy and Regulatory Environment in APEC for Data-Utilizing Businesses. Chapter 4: Payment Services.* (<https://www.apec.org/-/media/APEC/Publications/2019/7/Fostering-an-Enabling-Policy-and-Regulatory-Environment-in-APEC-for-Data-Utilizing-Businesses/TOC/Chapter-4.pdf>).

## C/ Data Localisation Costs Can Affect the Competitiveness of Local Merchants

Many of the costs of data localisation are not passed along to foreign service providers, but are instead imposed on local start-ups, financial institutions, and, ultimately, consumers, which can undermine a firm's competitiveness by cutting into profit margins.<sup>10</sup> A lack of platforms can prevent local firms from using their preferred payment provider to process transactions easily and cheaply access customers around the world.<sup>11</sup> This is especially important for developing countries and other markets with a nascent fintech sector, as localisation can hurt start-ups dependent on international network connections and cloud computing services.<sup>12</sup>

## D/ Barriers to Data Exports Reduce Robustness of Financial Services

Barriers that make it costlier, more complex, and/or illegal for payment service firms to export and use data as part of centralised data analytics platforms limit the ability of payment services firms to use data from the broadest range of sources to provide secure, innovative, and standardised services. For instance, requirements to route transactions through a single switch or store all data on a single location increase the risk of a single point of failure and may stop firms from using modern data protection techniques to stay ahead of hackers and cybercriminals.<sup>13</sup> ■

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<sup>10</sup> Asia-Pacific Economic Cooperation (APEC). 2019. *Fostering an Enabling Policy and Regulatory Environment in APEC for Data-Utilizing Businesses*.

<sup>11</sup> Asia-Pacific Economic Cooperation (APEC). 2019. *Fostering an Enabling Policy and Regulatory Environment in APEC for Data-Utilizing Businesses*.

<sup>12</sup> Thaker, Aria. 2018. "India's Data Localisation Plans Could Hurt Its Own Startups the Most." *Quartz India*. (<https://qz.com/india/1422014/rbis-data-localisation-could-hurt-indias-own-startups/>).

<sup>13</sup> Meltzer, Joshua, and Peter Lovelock. 2018. "Regulating for a Digital Economy: Understanding the Importance of Cross-Border Data Flows in Asia." *Brookings*. ([https://www.brookings.edu/wp-content/uploads/2018/03/digital-economy\\_meltzer\\_lovelock\\_working-paper.pdf](https://www.brookings.edu/wp-content/uploads/2018/03/digital-economy_meltzer_lovelock_working-paper.pdf)).

# FACILITATING CROSS-BORDER PAYMENTS

## 1. Trade Agreement Commitments

The first global rules on trade in services, including financial services like payments, were made at the World Trade Organization as part of the General Agreement on Trade in Services (GATS). These new services rules came into force in 1995 and have not been comprehensively updated since. Many governments were nervous about creating new rules and market access conditions for services, and particularly for financial services at that time, since this was a new subject in trade agreement regulation. As a result, most commitments actually made by governments under the GATS are relatively thin.

In 1995, of course, the internet was just reaching the general public for the first time. While officials and governments created a broad category for trading services across borders, they were primarily concerned with delivery of services by mail or via fax. Over the decades since then, the explosion of digitally-delivered services has meant that many activities that might have once been impossible or unthinkable are now regularly undertaken – including the use of on-line or electronic payments for the purchase of goods and services.

Governments can, and have, tried to update the global rulebook in a variety of settings, including through various FTA commitments. By 2020, there were no binding obligations in any Asian FTA that explicitly include payments, although the term and topic has begun to show up as part of cooperation pledges or provisions in some agreements (noted further below).

There are dozens of trade arrangements in the region and many already include various elements that may be applicable to resolving many of the challenges to market access for cross-border e-payments. While not exhaustive, the list below provides an overview of recent agreements with a broad geographic scope and with relevant provisions tackling payments-related issues.

- **Comprehensive and Progressive Trans-Pacific Partnership (CPTPP)** is a comprehensive FTA that covers 11 countries across the Asia-Pacific region including Australia, Canada, Japan, Mexico, New Zealand, Singapore, and Vietnam, and that came into force in December 2018.<sup>14</sup>
- **European FTAs in Asia.** The EU has four active agreements in the region, including with South Korea and Japan. The most recent agreements, with Singapore and Vietnam, entered into force in late 2019 and 2020.<sup>15</sup>
- **Digital Economic Partnership Agreement (DEPA)** is an agreement between CPTPP members Chile, New Zealand and Singapore that established new approaches and collaborations on digital trade issues. DEPA is a stand-alone modular agreement, open to future accessions comprised of multiple sections crafted as independent “modules” that could be added to, expanded, or stripped down by other parties in different agreements.<sup>16</sup> DEPA Article 2.7 encourages parties to work together on the creation of consistent regulatory frameworks for payments.
- **Singapore-Australia Digital Economy Agreement (DEA)** updates digital trade arrangements under the Australia-Singapore FTA.<sup>17</sup> Singapore has similar initiatives underway in 2021 with South Korea and the UK. The DEA contains cooperation commitments specifically on payments that go a bit farther in committing members to coordination than the DEPA (Article 11).

Not all of these agreements contain explicit references to payments or facilitate movement across borders. However, they all include other provisions in related areas that reduce market access barriers to the delivery of cross-border payments. While the scope of this paper does not allow for a detailed assessment of all FTA provisions relevant for the delivery of cross-border e-payment services, key market access and data provisions include:

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- <sup>14</sup> Technically, Vietnam started in January 2019. The complete texts and schedules of CPTPP can be found at: <https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/cptpp/comprehensive-and-progressive-agreement-for-trans-pacific-partnership-text-and-resources/>
  - <sup>15</sup> For details on EU FTAs, see: <https://ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements/>
  - <sup>16</sup> For DEPA text visit <https://www.mti.gov.sg/-/media/MTI/Newsroom/Press-Releases/2020/06/Joint-Press-Release--Electronic-Signing-of-Digital-Economy-Partnership-Agreement-12-June-Updated-URL.pdf>
  - <sup>17</sup> The Agreement can be found at: <https://www.dfat.gov.au/sites/default/files/australia-singapore-digital-economy-agreement.pdf>



- **National Treatment & Market Access for Financial Electronic Services:** This commitment ensures that countries provide (or reinforce) the basic WTO principle that domestic and foreign payment services and service suppliers are treated the same – known as national treatment – and ensure that this applies to the various modes of supply of their payment services commitments in trade agreements.
- **Cross Border Transfer of Information:** This provision prohibits members from restricting cross-border transfer of information.<sup>18</sup>
- **Location of Computing Facilities:** These provisions restrict FTA members from requiring service providers to locate their computing facilities in their territory as a condition to conduct business. In some agreements there are provisions that explicitly prohibit members from requiring a financial institution to locate computing facilities in their territory.<sup>19</sup>

## 2. Analysis of FTA Provisions

The non-discriminatory treatment of foreign payment service providers has limited coverage in agreements like the CPTPP. Annex 11-B in Financial Services includes a section explicitly allowing for the supply of electronic services for payment card transactions into a member's territory. However, the agreement also includes exceptions that exclude digital payments from commitments on national treatment for countries like Malaysia. The CPTPP further contains side letters between its members that authorise existing measures that discriminate against foreign payment providers, such as via local presence requirements. For example, a side letter between Vietnam and all members allows Vietnam to require electronic service providers to be processed through a national switch.<sup>20</sup>

Conversely, the Singapore-Australia DEA and the EU-SG FTA go further than CPTPP in providing explicit national treatment to

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<sup>18</sup> *It should be noted that under the selected agreements members are able to adopt measures inconsistent with the provisions to achieve a legitimate public policy objective provided that the measure "is not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade" as per the DEA.*

<sup>19</sup> *As with any agreement, government retains the right to regulate in the public interest, which means that most data flow and data localisation measures contain exceptions clauses.*

<sup>20</sup> *CPTPP – Annex 11-B in Financial Services includes Section D explicitly*

payments and market access to firms from other parties, including digital payments.<sup>21</sup>

While all selected agreements acknowledge the importance of cross-border data transfers, their ability to limit restrictions on those transfers and localisation requirements varies considerably.

First, some agreements do not have any provisions limiting members' ability to impose data localisation requirements. For instance, the EU-Singapore FTA contains provisions that allow cross-border information transfers for payments services but does not contain explicit references to data localisation requirements.<sup>22</sup>

Second, some agreements refer to the importance of cross-border transfers of information and limiting restrictions on the location of computer facilities but do so through non-binding commitments. For instance, the DEPA includes provisions where parties "affirm their level of commitments relating to computing facilities" including localisation requirements.<sup>23</sup> While this type of provision shows a commitment and willingness from participating countries, it does not make those measures mandatory or subject to the agreement's dispute settlement mechanism.

Third, some agreements do prohibit restrictions on cross-border data transfers and data localisation requirements but exclude financial services. For instance, the CPTPP includes commitments prohibiting the restrictions on cross-border data transfers in its financial services chapter but excludes financial services from its broad prohibition of data localisation requirements.<sup>24</sup>

Last, agreements like the DEA go further than the other agreements by providing explicit, detailed protections for the free flow of data and prohibitions on

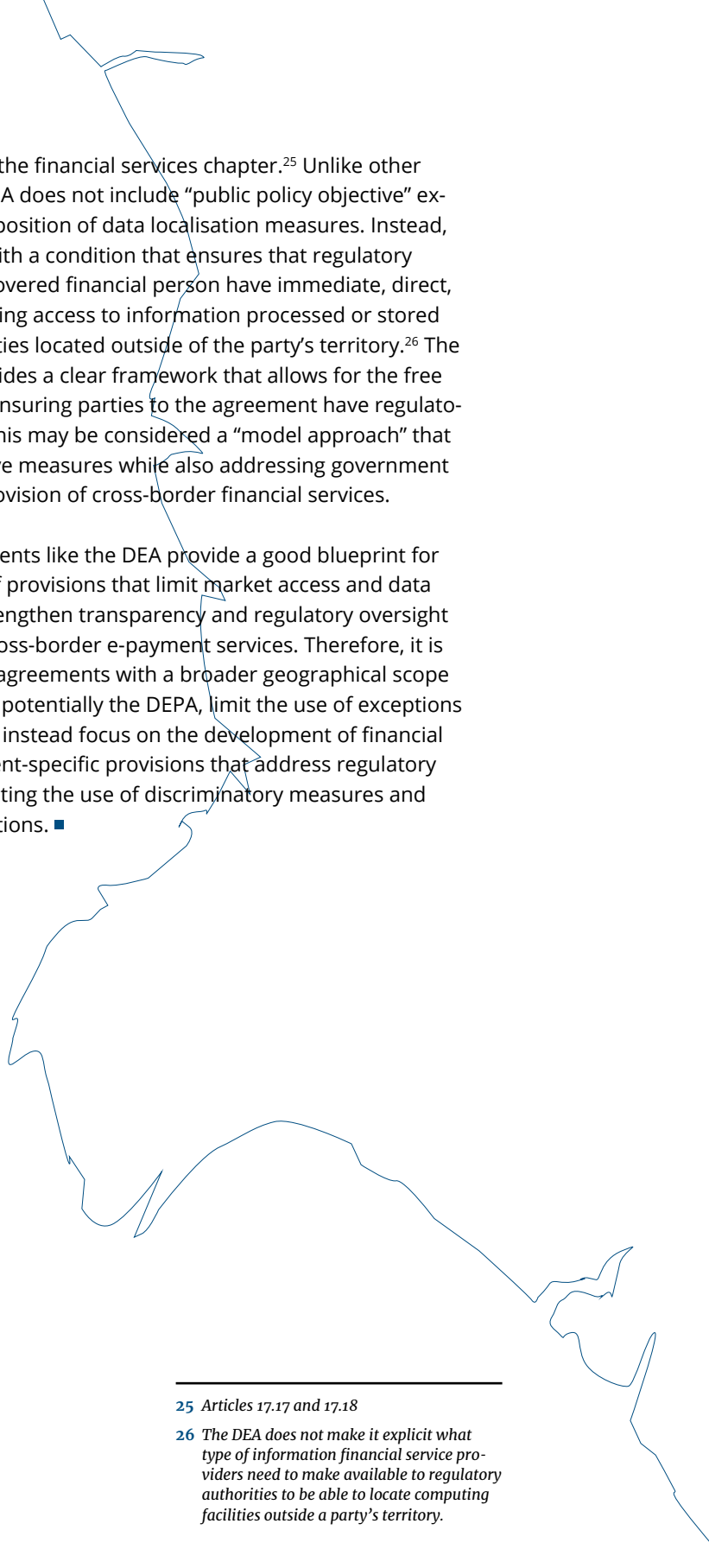
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<sup>21</sup> Sections 17.3.3 and 17.5.1. the parties agree not to cap the number of electronic payment service suppliers, limit the value of transactions or assets, apply economic needs tests, restrict the number of employees, or limit the types of legal entities through which firms can offer their electronic payment services

<sup>22</sup> For EU-Singapore FTA texts visit <https://trade.ec.europa.eu/doclib/press/index.cfm?id=961>

<sup>23</sup> For DEPA text visit <https://www.mti.gov.sg/-/media/MTI/Newsroom/Press-Releases/2020/06/Joint-Press-Release--Electronic-Signing-of-Digital-Economy-Partnership-Agreement-12-June-Updated-URL.pdf>

<sup>24</sup> For CPTPP texts visit <https://www.enterprisesg.gov.sg/non-financial-assistance/for-singapore-companies/free-trade-agreements/ftas/singapore-ftas/-/media/esg/files/non-financial-assistance/for-companies/free-trade-agreements/cptpp/cptpp-legal-text.pdf>



data localisation in the financial services chapter.<sup>25</sup> Unlike other agreements, the DEA does not include “public policy objective” exceptions for the imposition of data localisation measures. Instead, the DEA is paired with a condition that ensures that regulatory authorities of the covered financial person have immediate, direct, complete and ongoing access to information processed or stored on computing facilities located outside of the party’s territory.<sup>26</sup> The DEA approach provides a clear framework that allows for the free flow of data while ensuring parties to the agreement have regulatory access to data. This may be considered a “model approach” that limits data restrictive measures while also addressing government concerns on the provision of cross-border financial services.

As a whole, agreements like the DEA provide a good blueprint for the development of provisions that limit market access and data restrictions and strengthen transparency and regulatory oversight in the delivery of cross-border e-payment services. Therefore, it is important that the agreements with a broader geographical scope like the CPTPP, and potentially the DEPA, limit the use of exceptions and carve-outs and instead focus on the development of financial services and payment-specific provisions that address regulatory concerns, while limiting the use of discriminatory measures and data-related restrictions. ■

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<sup>25</sup> Articles 17.17 and 17.18

<sup>26</sup> *The DEA does not make it explicit what type of information financial service providers need to make available to regulatory authorities to be able to locate computing facilities outside a party’s territory.*

Beyond regulatory challenges that restrict the operation of cross-border payment services, the evolution of the e-payments ecosystem has also led to a significant variation of standards across countries. A growing lack of interoperability between systems makes cross-border e-payments more difficult.

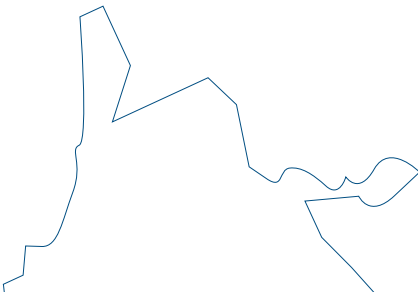
In the context of digital payments, interoperability enables all participants of a payment system (for example, consumers, merchants and governments) to easily send funds between different payment networks and instruments, facilitating the making and receiving of cross-border retail payments.

## **1. The Challenge of Creating Interoperable Cross-Border e-Payment Networks**

There are multiple steps countries in the region have taken to reduce friction and move toward greater harmonisation and interoperability of the complex web of relationships and messaging systems that facilitate connections between payment systems. For instance, international standards governing messaging play an important role in facilitating cross-border payments. Many payment card networks connect banks using a common messaging standard, the International Organization for Standardization (ISO) 8583.

Despite the availability of mechanisms for making connections between payment networks, some challenges still exist. The appearance of new payment services providers has led to new innovations, increased competition and improved access and value for consumers. However, the proliferation of new payment technologies has also led to an increasingly complex set of systems and technical standards with significant variation by country and region. A lack of interoperability between those standards in Asia's regulatorily fragmented environment has created additional friction in the management of cross-border digital payments.

For instance, there are standards and practices on encryption, authentication, anti-money laundering (AML), combating the financing of terrorism (CFT) and know your customer (KYC) requirements



that need to be coordinated for payment systems to connect.<sup>27</sup> However, countries can have domestic standards on these issues that conflict with international standards or they can have a lack the infrastructural and institutional capabilities to fully implement such standards.<sup>28</sup> Many financial institutions are still operating on older messaging systems which do not easily connect with newer systems, nor are able to pass along sufficient information to facilitate cross-border transactions.<sup>29</sup> Similarly, although there are global AML and CFT standards that multiple countries are working to meet, levels of implementation, compliance and effectiveness vary significantly in the management of cross-border payments.<sup>30</sup>

Differences in standards and implementation of those standards create conflict and additional costs for businesses engaging in cross-border trade, especially MSMEs, which need to comply with several sets of rules and regulations. Multiple surveys in the region have noted that legal, regulatory and compliance considerations associated with AML, KYC, risk mitigation, and consumer protection are the most significant costs for cross-border payments.<sup>31</sup>

Given the need to enable better interoperability between payment systems in the region, some governments have taken steps to reduce the existent friction. The following section will identify and categorise some of these different approaches.

## 2. Stocktake of Initiatives to Promote Interoperable Cross-Border e-Payment Networks

In order to address the main challenges related to cross-border payments and to promote interoperability for e-payment platforms in Asia, policies and regulation frameworks have been formulated at national and regional levels. Based on growing literature outlining different approaches towards improving interoperability and country specific reports, *Table 1* outlines a regulatory matrix of different initiatives outlining different initiatives in the region. While the list is not exhaustive, it outlines and categorises multiple

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<sup>27</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce."

<sup>28</sup> Verdugo Yepes, Concha. 2011. "Compliance with the AML/CFT International Standard: Lessons from a Cross-Country Analysis." IMF Working Papers.

<sup>29</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce."

<sup>30</sup> WEF. 2018. "Addressing E-Payment Challenges in Global E-Commerce."

<sup>31</sup> Asia-Pacific Economic Cooperation (APEC). 2019., *Fostering an Enabling Policy and Regulatory Environment in APEC for Data-Utilizing Businesses.*



initiatives with the potential to enable cross-border payments. These initiatives can be classified under the following categories:

**A/ Domestic and Cross-Border Financial Data Exchange**

Countries in the region have put in place initiatives to promote information sharing and data exchange within and across borders. Improved financial data exchange and integration will generate an increased cross-border capital flow.

**B/ Reliable Digitised Identification Systems**

The interoperability of e-payments can be slowed by the prevalence of fake identities and lack of basic identification for certain populations, especially in rural regions. Some countries, shown in *Table 1*, have designed initiatives that allow parties to make transactions online in a convenient and secure manner.

**C/ Protection of Data Privacy**

The successful implementation of cross-border payments often depends on government initiatives to develop and implement data privacy frameworks that can effectively protect the data of citizens, while also allowing information to flow across borders in ways that support trade and innovation.

**D/ Encouraging Financial Services Innovation**

When promoting interoperability of e-payments, regulators typically take a cautious approach to disruptions in cross-border payment services and systems to protect consumers. Some countries have implemented initiatives that allow companies to “test” new innovations while remaining under careful regulatory supervision.

**E/ Developing Guidelines for International Standards**

In order to increase data sharing and encourage interconnectivity and competition among payment providers, many countries are supporting initiatives that encourage more open exchanges of financial information. The most popular is open banking, which refers to the sharing of consumer banking data with third-party applications and firms in order to provide new and existing financial services.<sup>32</sup>

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<sup>32</sup> WEF. 2018. “Addressing E-Payment Challenges in Global E-Commerce.”

## **F/ Digital Currencies**

Cryptocurrencies have the potential to reduce the number of intermediaries and processes to settle a payment. Within the cross-border space, cryptocurrencies can reduce transactional fees and exchange rate fee charges, facilitating international retail payments. Some governments in the region have implemented initiatives that explore the use of block chain and distributive ledger technology (DLT) to clear and settle payments.

## **G/ Digital-only Trade Agreements**

As with other service industries, an effective way to encourage interoperability and international harmonisation is through trade agreements. Provisions included in digital trade agreements like the DEA and DEPA encourage members to recognise common standards and the utility of interoperability among multiple payments systems.

## **H/ Regional Cross-border Financial Services Integration Frameworks**

A growing number of regional forums are coordinating standards development and mutual recognition. Multilateral associations, such as ASEAN, have identified steps that can be taken to support the evolution and convergence of regulatory frameworks to facilitate cross border e-payments.

Within ASEAN, members involved in the Working Committee on Payment and Settlement Systems (WC-PSS) have been tasked with creating an ASEAN-wide payments framework. This framework is meant to improve user payment experiences, promote regional integration, increase trust and security and improve the livelihoods of the underbanked.<sup>33</sup> In terms of payment infrastructure readiness and maturity, eight of the ten ASEAN<sup>34</sup> countries are preparing to implement the Cross-Border Payments Interoperability Network (XBPIN) system by 2021, with Singapore, Thailand, and Malaysia taking the lead.<sup>35</sup>

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<sup>33</sup> World Economic Forum. *Digital ASEAN*. <https://www.weforum.org/projects/digital-asean>, Accessed 14 August 2020.

<sup>34</sup> The Association of Southeast Asian Nations (ASEAN) includes ten members: Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

<sup>35</sup> Bain and Company, Google, and Temasek. *e-Economy SEA Report 2019: Southeast Asia's \$100 billion Internet economy*. (2019).

**Table 1: Range of Initiatives that Promote e-Payment Interoperability**

#	Category	Policy/Regulation	Description	Implementing Countries Include
1	Domes- tic and cross-bor- der finan- cial data exchange	e-Payment Initiatives and codes of conduct	The e-Payment initiatives support an open, acces- sible, and interoperable national e-Payment infra- structure.	Singapore, In- dia, Australia, New Zealand
		Cross-border Interbank Pay- ment System (CIPS)	CIPS provides clearing and payment services for financial institutions in the cross-border RMB and offshore RMB business.	China
2	Digital Identi- fication Systems	Centralised online identifi- cation system	A centralised online iden- tification system allows citizens to store, view and manage personal data that has been provided to the government.	Singapore, Australia
		Unique biome- tric National ID “Aadhar”	Permitting electronic Know Your Customer (KYC) by using unique biometric National ID for financial services.	India
3	Protection of Data Privacy	Privacy Act	The Privacy Act applies to the handling of all personal information collected or held by businesses and stipulates rules on how to gather, utilise and disclose personal information.	New Zealand, Philippines, Japan, Singa- pore
		National Pay- ment Gateway Card (GPN)	The GPN card creates an interconnected ecosystem of payment systems that has interoperability and protects consumer data.	Indonesia



#	Category	Policy/ Regulation	Description	Implement- ing Countries Include
4	Encouraging Innovation	Regulatory Sandbox	The regulatory sandbox allows companies to test innovations under regulators' supervision and controlled environments to improve upon cross-border payment systems.	Singapore, Thailand
5	Guidelines for International Standards	Open Banking Guidelines	Worked in the development of guidelines on API and security standards.	Singapore
			Establishing standards guidelines for QR code payments.	India
6	Crypto and Digital Currencies.	Crypto Regulation	Explore the use of block chain and distributive ledger technology (DLT) to clear and settle cross-border payments in different currencies on the same network.	Singapore, Malaysia
7	Digital-only Trade Agreements	Australia-Singapore Digital Economy Agreement (DEA)	The DEA upgraded the digital trade arrangement between Australia and Singapore in the CPTPP. It establishes new commitments on compatible e-invoicing and e-payment frameworks promoting better interoperability.	Australia, Singapore
		Digital Economic Partnership Agreement (DEPA)	Specific article on digital payments (2.7), signing parties agree to support the development of cross-border e-payments by fostering interoperability and the interlinking of payment infrastructures.	Chile, New Zealand and Singapore

#	Category	Policy/Regulation	Description	Implementing Countries Include
8	Regional Financial Services Integration Frameworks	ASEAN Digital Data Governance Framework	In December 2018, ASEAN adopted the framework and is developing the Data Management Framework and the mechanisms required to facilitate cross border data flows (CBDF).	ASEAN
		ASEAN Framework on Personal Data Protection	It was adopted in 2016 by the ASEAN Ministers as one of two multilateral data protection and privacy frameworks.	ASEAN
		Collaborative framework facilitating cross-border digital payments	Working Committee on Payment and Settlement Systems (WC-PSS) develops a framework for financial integration, which includes principles on the “standardization of innovative retail payment instruments in ASEAN.	ASEAN

Source: Compiled by authors using regional reports and domestic sources <sup>36</sup>

<sup>36</sup> Information contained in the table was taken from: Bain and Company, Google, and Temasek. 2019. “Fulfilling its promise: The Future of Southeast Asia’s digital financial services.”; World Economic Forum. 2020. “Digital ASEAN Workshop Report.”; Govtech Singapore. “E-Payments.”; PayPal. 2013. “Payments Regulations for Asia Pacific.”; OpenGovAsia. 2018. “National Payment Gateway is the future of bank transactions in Indonesia.”; GSMA. 2018. “Regional Privacy Frameworks and Cross Border Data Flows: How ASEAN and APEC can protect data and drive innovation.”; and Khan, A., M. Gandhi, A. Jain, and N. Kacholia. 2016. “Emerging Markets Driving the payments transformation.” PWC network.

The stock-take's findings show that governments across the region are leveraging domestic, bilateral and regional policy frameworks to increase the efficiency and interoperability of cross-border e-payment systems. The following section will provide an assessment of the ways in which the recent digital-only trade agreements can enable the adoption and implementation of international standards across existing initiatives.

### 3. Trade Agreements as Enablers for International Standards

While initiatives related to cross-border financial services integration and the adoption of open banking standards can improve interoperability between national e-payment systems, domestic-level efforts can potentially introduce new frictions into cross-border digital commerce in the future, as countries adopt other, non-conforming standards. The alignment necessary to develop a single common regulatory market for e-payments across a region as diverse as Asia is unlikely to be realised in the near future.

This section will provide a more detailed assessment of the ways in which existing digital trade agreements can facilitate the development and adoption of common standards. Both the DEA and DEPA agreements have dedicated sections on digital payments, with a focus on application of international standards. Relevant commitments under both agreements, which align with the outlined initiatives include:<sup>37</sup>

- **Open Banking:** Both agreements are the first of their kind to promote the adoption of open banking. The agreements promote the use of open APIs and encourage third-party players to “facilitate greater interoperability and innovation in the electronic payments ecosystem.”

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<sup>37</sup> For DEPA text visit <https://www.mti.gov.sg/-/media/MTI/Newsroom/Press-Releases/2020/06/Joint-Press-Release--Electronic-Signing-of-Digital-Economy-Partnership-Agreement-12-June-Updated-URL.pdf>

- **Facilitating Innovation:** Both agreements require members to facilitate innovation and competition and the introduction of new financial and electronic payment products and services in a timely manner through the adoption of regulatory and industry sandboxes.
- **Adoption of Specific International Standards:** Only the DEA, for relevant electronic payment systems, obliges members to adhere to international standards for electronic payment messaging, such as the International Organization for Standardization Standard ISO 20022 Universal Financial Industry Message Scheme for electronic data exchange between financial institutions and services suppliers.

By committing to adopt internationally accepted standards and encourage data sharing between payment providers, both the DEPA and DEA seek to increase interoperability and promote a more seamlessly integrated network for digital payments. However, as it is the case with most agreements, ensuring the swift implementation of non-binding commitments can be challenging. At the moment, both DEPA and DEA are platforms to encourage increased dialogue and initiatives for the promotion of interoperability of cross-border e-payments. As first-of-their-kind platforms endorsing open banking and encouraging common payment standards, both agreements can serve as templates for boosting interoperability in WTO discussions on digital trade, or in new agreements like the Regional Comprehensive Economic Partnership (RCEP). ■

# TAKE-AWAYS FOR POLICYMAKERS

Payments are a key enabler of cross-border digital commerce and drive access, productivity, transparency and competition in the market. The cross-border dimension of digital payments can enable the digitisation and internationalisation of MSMEs, who form a key pillar of the region's socio-economic health and post-COVID recovery. The analysis in this paper has shown that commitments under trade agreements play an increasingly important role in the reduction of barriers to market access and data in the delivery of cross-border e-payments and the interoperability of increasingly complex and divergent domestic e-payment systems.

However, the coverage and depth of commitments under existing agreements, while providing a good set of foundational principles, may lack the geographical scope and the binding force to perform this task. Therefore, it is essential that policymakers continue to develop and upgrade trade commitments that facilitate the use and delivery of cross-border e-payment services by:

- 1/ Limiting or eliminating discriminatory measures and data-related restrictions by acknowledging and addressing government policy priorities:** Ensuring that future FTA commitments on the localisation of computing facilities for financial services, and the movement of financial data across borders work to minimise or eliminate market access restrictions, while strengthening transparency and regulatory oversight in the delivery of cross-border e-payment services. Such an approach will ensure that FTAs address key government concerns for the delivery of cross-border e-payment services and limit the use of exceptions and carve outs for the provision of cross-border financial services.
- 2/ Encouraging and operationalising cross-border interoperability through commitments on international standards:** Commitments to adopt internationally accepted standards within trading agreements can provide incentives for domestic industries to adopt international standards, and therefore promote a more seamlessly integrated network for digital payments.

- 3/** Encouraging the increased dialogue, use and interoperability of international best practices like open banking, regulatory sandboxes, digital identification systems, cryptocurrencies and financial systems integration can increase incentives for domestic industries to adopt those standards and shape discussions at broader settings like the WTO.

Facilitating e-payments in a safe, effective manner would help unlock the ability of smaller firms, especially, to view the region as their own marketplace. A sustained focus on continuously updating existing commitments and on practical steps that domestic governments should take has the potential to create a safer, more innovative, open and inclusive regional e-payments ecosystem. This paper contributes to the burgeoning literature highlighting the value of cross-border e-payments by pointing out the ways in which trade agreements can enable governments to reduce barriers to the cross-border delivery of e-payment services, work more closely in promoting the simplification and interoperability of platforms and solutions, adopt international payment standards, facilitate coordination among multiple stakeholders and drive strategies to promote adoption. ■

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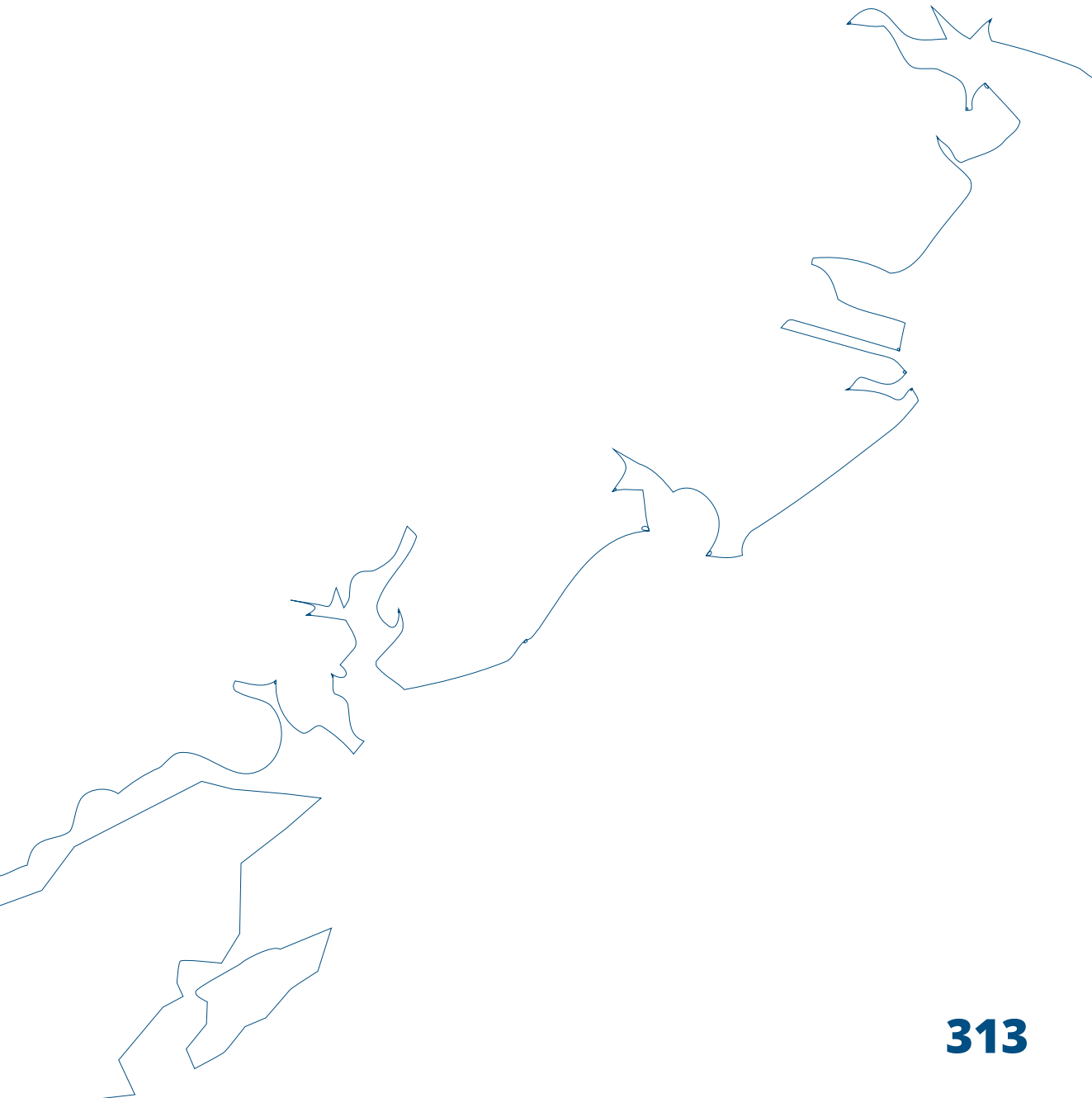


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# **ENABLING EFFICIENT AND INCLUSIVE E-COMMERCE GOVERNANCE IN ASIA: A FOCUS ON DIGITAL TAXATION**

Dr Deborah Elms  
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Co-author: Ankita Saxena

# KEY TAKEAWAYS

- The current regulatory and economic environment highlights an important set of poorly recognised, competing challenges for e-commerce: firms are increasing their digital presence at the same time that stressed government budgets are targeting digital products and services with new tax policies.
- This is the case in Asia too, the world's fastest growing e-commerce market, where governments are erecting different types of taxation schemes on goods and services sold through e-commerce channels.
- Taxes on e-commerce in the region include digital permanent establishment rules, digital services taxes, consumption taxes like GST and VAT, and import duties on digital products.
- If not managed properly, e-commerce taxation policies can create knock-on effects that increase costs for actors down the value chain, such as micro, small and medium sized enterprises (MSMEs) that rely on e-commerce services to compete in foreign markets and that do not have the means to comply with complicated regulations across multiple markets.
- To date, there have been no regional governance structures that enable the development of inclusive e-commerce taxation policies across the region. To ensure that moving forward digital taxation policies do not endanger the growth of e-commerce, this paper brings forward the following guiding principles:
- **Manage the risks of corporate taxation approaches** by assessing the probable knock-on effects of policies on the broader e-commerce ecosystem – especially their potential to trigger significant price increases for e-commerce services.
- **Adopt an MSME-friendly and coordinated approach to consumption taxes** by streamlining the use of *de-minimis* thresholds and promoting the development of common approaches and standards for consumption taxes.
- **Avoid customs duties on digital products** by upholding the WTO moratorium on taxing electronic transactions, and work on regional initiatives to use non-discriminatory forms of taxation

The cross-border exchange of goods and services over the internet has grown exponentially in the Asia-Pacific region, where the e-commerce sector has experienced the fastest growth in the world – the value of the region’s e-commerce sector increased from US\$ 5.5 billion in 2015 to US\$ 38 billion in 2019 and is on track to exceed US\$ 150 billion by 2025.<sup>1</sup>

The rapid development of e-commerce in the region has been a catalyst for the growth and internationalisation of micro, small and medium enterprises (MSMEs) spanning the Asia-Pacific. They account for an average of 96% of all enterprises and 62% of the national labour force across Asian countries.<sup>2</sup> Traditionally, MSME participation in international trade has been stymied by certification hurdles, high barriers to trade, information asymmetries and limited economies of scale. However, the proliferation of e-commerce marketplaces, market research tools and MSME-friendly finance and logistics solutions have reduced the logistics and marketing costs and barriers faced by MSMEs. Smaller businesses that successfully leverage digital tools can potentially reduce export costs by up to 40% for goods producers and 82% for service producers.<sup>3</sup> Such opportunities have enabled MSMEs to turn into “micro-multinationals” that rely on digital tools and innovation to develop internationally competitive goods and services.

Despite growing opportunities, the export performance of MSMEs in the region remains relatively poor. According to 2017 data, only 8.8% of MSMEs in the region sold goods and services outside their own market.<sup>4</sup>

There are several types of factors that limit MSME participation in cross-border e-commerce. Economic actors and conditions, such as ICT affordability and accessibility, availability of online

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- 1 Google & Temasek / Bain. 2019. “e-Economy SEA 2019.” 2019. ([https://www.blog.google/documents/47/SEA\\_Internet\\_Economy\\_Report\\_2019.pdf](https://www.blog.google/documents/47/SEA_Internet_Economy_Report_2019.pdf)). 32.
  - 2 Yoshino, Naoyuki Yoshino and Farhad Taghizadeh-Hesary. 2019. “Role of SMEs in Asia and the Financing Challenges They Face.” In *Unlocking SME Finance in Asia*, January 2019. (<https://doi.org/10.4324/9780429401060-1>). 1.
  - 3 Asia Pacific MSME Trade Coalition (AMTC) and AlphaBeta. 2018. “Micro-Revolution: The New Stakeholders of Trade in APAC.” AMTC, February 2018. (<https://static1.squarespace.com/static/5393d501e4b0643446abd228/t/5a80fe5a4192024c49bd9e0a/1518403194740/AMTCDigitalTradeFeb2018.PDF>). 23.
  - 4 Oxford Economics. 2017. “Local Business Global Ambition: How the Internet Is Fuelling SME Exports in Asia-Pacific.” Oxford Economics, 5 June. (<https://www.oxfordeconomics.com/my-oxford/projects/367780>).

payment options, and delivery of infrastructure are inconsistent across the region.<sup>5</sup> Multiple research projects have shown that legal and institutional environmental factors are instrumental in legitimising and facilitating cross-border e-commerce growth.<sup>6</sup> Regulatory institutions, bodies and rules have a direct impact on individual organisations' e-commerce behaviours by affecting the affordability, accessibility and growth of e-commerce activities.<sup>7</sup> For instance, country-specific regulations on market access, intermediary liability, copyright issues, and cross-border data restrictions can add significant costs to cross-border e-commerce.<sup>8</sup>

While firms have not traditionally worried about cross-border application of taxes on electronic commerce and digital services delivery, this situation is changing rapidly. Increasingly, governments are implementing taxation policies targeting e-commerce platforms and e-commerce sellers. This is possibly due to governments being concerned about the potential of e-commerce to erode tax revenue, since to date most e-commerce transactions have not been directly taxed.<sup>9</sup>

On one hand, some argue that e-commerce sales should be taxed since the tax revenues are likely to be substantial and failing to do so could create “unfair advantages” for e-commerce businesses over traditional brick and mortar establishments.<sup>10</sup> In the Asia-Pacific region, governments are starting to put in place different types of taxation schemes on goods and services sold through e-commerce channels. These include digital services taxes, goods and services taxes (GST), or customs duties on digital products.

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5 ADB and UN ESCAP. 2018. “Embracing the E-Commerce Revolution in Asia and the Pacific.” Asian Development Bank. (<https://doi.org/http://dx.doi.org/10.22617/TCS189409-2>).

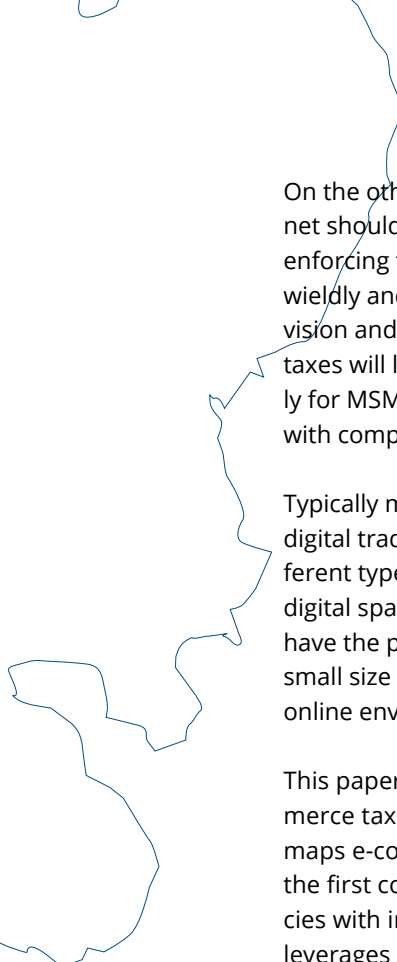
6 ADB and UN ESCAP. 2018. “Embracing the E-Commerce Revolution in Asia and the Pacific.”; Asia Pacific MSME Trade Coalition (AMTC) and AlphaBeta. 2018. “Micro-Revolution: The New Stakeholders of Trade in APAC.” Economic Research Institute for ASEAN and East Asia (ERIA). 2012. “Study on MSMEs Participation in the Digital Economy in ASEAN: Nurturing ASEAN MSMEs to Embrace Digital Adoption.” (<https://asean.org/storage/2012/05/ASEAN-MSME-Full-Report-Final.pdf>).

7 ADB and UN ESCAP, “Embracing the E-Commerce Revolution in Asia and the Pacific.” 13.

8 Asia Pacific MSME Trade Coalition (AMTC) and AlphaBeta. 2018. “Micro-Revolution: The New Stakeholders of Trade in APAC.”; Economic Research Institute for ASEAN and East Asia (ERIA). 2012. “Study on MSMEs Participation in the Digital Economy in ASEAN: Nurturing ASEAN MSMEs to Embrace Digital Adoption.”

9 Note that this paper is not grappling with the application of taxes to corporate revenues, which is the subject of heated debates in the OECD and elsewhere.

10 Simkin, Mark G., Graham W. Bartlett, and J. P. Shim. 2011. “Pros And Cons Of E-Commerce Taxation.” *International Business & Economics Research Journal (IBER)* 1, 2. (<https://doi.org/10.19030/iber.v1i2.3894>).



On the other hand, many scholars support the idea that the internet should be an international tax-free zone and that collecting and enforcing tax laws on the internet can be complex, inefficient, unwieldy and require substantial increases in government tax supervision and enforcement efforts.<sup>11</sup> The application of cross-border taxes will likely increase barriers to entry and limit trade, particularly for MSMEs that do not have the means and resources to comply with complicated regulations and administrative requirements.

Typically missing from discussions on taxation of e-commerce and digital trade are clear assessments of what taxation policies and different types of taxation arrangements may do to companies in the digital space. Most important, cross-border taxation suggestions have the potential to eliminate the “micro-multinational” and other small size sellers, vendors, and distributors that have thrived in the online environment.

This paper will conduct a careful analysis of approaches to e-commerce taxation in Asia. To do so, the paper first classifies and maps e-commerce taxation policies across 16<sup>12</sup> countries in Asia – the first comprehensive regulatory stock-take of taxation policies with implications for cross-border trade. Second, the paper leverages recent tax and economic literature to explore the ways in which specific types of taxation may affect e-commerce growth. Third, the paper assesses regional and multilateral governance structures covering e-commerce taxation policies. Last, based on the regulatory stocktake and the assessment of both the effects of e-commerce taxation policies and the effectiveness of existing governance structures, the paper suggests regulatory best practices less likely to hinder the development of new technologies or limit the participation of businesses in an evolving and growing e-commerce market. ■

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<sup>11</sup> See, for example, Simkin, Mark G., Graham W. Bartlett, and J. P. Shim. 2011. “Pros And Cons Of E-Commerce Taxation.”

<sup>12</sup> The 10 members of ASEAN (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam) as well as Australia, China, India, Japan, Korea and New Zealand.



# E-COMMERCE TAXATION POLICIES IN THE ASIA-PACIFIC

Driven by the need to capture some of the value of a fast-growing e-commerce segment and level the playing field between brick-and-mortar sellers and e-commerce firms, countries across the region have begun to put into place taxes on online goods and service providers. This section provides a stocktake of different types of policies taxing cross-border digital goods and services across 16 countries in the Asia-Pacific.<sup>13</sup> Based on a growing set of literature on different e-commerce taxation policies and country-specific reports, *Table 1* shows a regulatory matrix that outlines and characterises taxation policies (implemented or proposed) across the selected countries.

While the definition and scope of digital taxation policies in the region varies significantly between countries, these can be classified into two categories: direct or indirect taxes on e-commerce.



<sup>13</sup> Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, Australia, China, India, Japan, Korea and New Zealand.

<sup>14</sup> This table was developed by consulting academic literature and reports outlining the design and implementation of different types of e-commerce taxation policies across the region. Relevant sources are cited on the columns of the table. The information from each of the sources was corroborated employing country specific and up-to date information.

<sup>15</sup> Ezez. 2020. "Taxation of the digitalized economy (Development Summary)." KPMG. (<https://tax.kpmg.us/content/dam/tax/en/pdfs/2020/digitalized-economy-taxation-developments-summary.pdf>).

**Table 1: Regulatory Matrix: Ecommerce Taxation Policies in the Asia-Pacific<sup>14</sup>**

No.	Country	TYPE OF TAX AND IMPLEMENTATION			
		DIRECT TAX <sup>15</sup>			
		Withholding Tax (WTH)	Digital Permanent Establishment (PE)	Equalisation Levy	Digital Service Tax (DST)
1	Australia				
2	Brunei				
3	Cambodia				
4	China				✓
5	India	✓	✓	✓	
6	Indonesia		✓		✓
7	Japan				
8	Lao PDR				
9	Malaysia	✓			
10	Myanmar				
11	New Zealand				●
12	Philippines				●
13	Singapore				
14	South Korea				✓
15	Thailand	●			●
16	Vietnam	✓			✓

**Table 1 Key:** Implemented Policy: ✓ Proposed Policy: ●

No.	Country	TYPE OF TAX AND IMPLEMENTATION			
		INDIRECT TAX			
		Consumption Tax <sup>16</sup>		Border Taxes	
		VAT	GST/Service tax	Duty Digital Products	De minimis threshold (USD) <sup>17</sup>
1	Australia		✓		\$680 for duties. \$0 for GST
2	Brunei	Electronic Transaction Tax			\$291 for duties.
3	Cambodia				\$50
4	China	✓ (VAT + Consumption Tax)			Shipments with duty and VAT liability less than \$7
5	India		✓		\$1 (Duty and GST exempt) and \$14 (GST exempt)

**Table 1 Key:** Implemented Policy: ✓ Proposed Policy: ●

<sup>16</sup> PwC. 2019. "PwC Asia Pacific VAT/GST Guide 2019." PricewaterhouseCoopers (PwC) Indirect Taxes Network in Asia Pacific. (<https://www.pwc.com/sg/en/tax/assets/vat-gst-guide-2019.pdf>).

<sup>17</sup> Ezez. 2020. "Overview of de minimis value regimes open to express shipments worldwide." Global Express Association (GEA). (<https://global-express.org/assets/files/Customs%20Committee/de-minimis/GEA%20De%20Minimis%20Country%20information%20as%20of%2015%20October%202019.pdf>). USD conversions are based on exchange rates dated 12 October, 2019

No.	Country	TYPE OF TAX AND IMPLEMENTATION			
		INDIRECT TAX			
		Consumption Tax <sup>16</sup>		Border Taxes	
		VAT	GST/Service tax	Duty Digital Products	De minimis threshold (USD) <sup>17</sup>
6	Indonesia	✓ (VAT +Electronic Transaction Tax)		✓ <sup>18</sup>	\$3 for duties. \$0 for VAT
7	Japan	Consumption Tax			\$92
8	Lao PDR				
9	Malaysia		(Service Tax)		\$119
10	Myanmar				\$50
11	New Zealand		✓		\$633
12	Philippines	●			\$194
13	Singapore		✓		\$291
14	South Korea	✓			\$150 (personal shipments)
15	Thailand	●			\$49
16	Vietnam	✓			\$40

**Table 1 Key:** Implemented Policy: ✓ Proposed Policy: ●

<sup>18</sup> Medina, Ayman. 2020. "Indonesia's Law on E-Commerce: Clear Guidelines and Compliance by November 2021." ASEAN Business News. (<https://www.aseanbriefing.com/news/indonesias-law-on-e-commerce-clear-guidelines-and-compliance-by-november-2021/>).

## 1. Direct Taxes on E-Commerce

Direct taxes are taxes paid by an individual or organisation directly to a tax authority. Based on different criteria, which may include the permanent establishment and residence of a business or the location of key sources of revenue, platforms and businesses facilitating e-commerce can be subject to direct taxes. To date, some governments in Asia have implemented a source-based approach to the direct taxation of e-commerce and internet platforms, which means they are taxed for the income earned in a country regardless of whether they are incorporated or physically present in that country.<sup>19</sup> Direct tax legislations on e-commerce platforms can be classified into six categories:

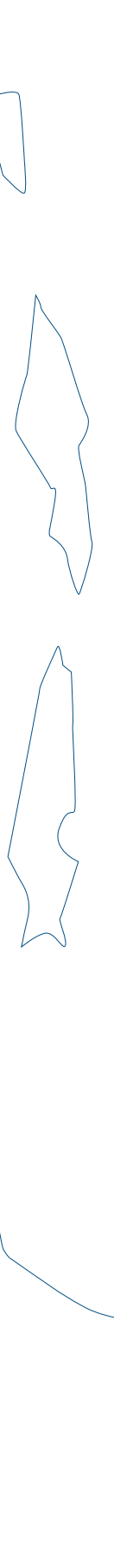
- 1/ **Gross-Based Withholding Tax on E-Commerce:** India, Malaysia, Thailand and Vietnam have put in place a withholding tax levied on payments for the sale of goods and services made to “non-resident” e-commerce businesses. An e-commerce operator subject to this type of tax is required to pay a percentage of the gross value of the sale of goods/services facilitated through its digital platform. In some countries, the withholding tax rate may vary depending on the place of residence of a particular business. For instance, in India the withholding tax levy increases from one to five percent if the e-commerce platform does not have an Indian income tax registration.<sup>20</sup>
- 2/ **Digital Permanent Establishment Rules:** The concept of Permanent Establishment (PE) allows a government to establish tax jurisdiction – often a corporate tax – over a foreign unincorporated business activities in its country. Recent virtual PE rules enable states to tax e-commerce providers with a “significant digital presence.” Such a presence is often determined by taking into account activities like the use and sale of data, the online sales of goods and services and the housing of data servers.<sup>21</sup> India and Indonesia have in place this type of permanent establishment rule.

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<sup>19</sup> Basu, Subhajit. 2003. “Taxation of E-Commerce from a Global Perspective.” (<https://core.ac.uk/download/pdf/78911849.pdf>). 35.

<sup>20</sup> Bhojwani, Prashant and Sandeep Bhalla. 2020. “India: Amending the Tax Framework to Move towards a Digital Economy.” *International Tax Review*, 6 April. (<https://www.internationaltaxreview.com/article/b12slw8nq6wzh/india-amending-the-tax-framework-to-move-towards-a-digital-economy>).

<sup>21</sup> Shield Geo. 2016. “How to Anticipate Virtual Permanent Establishment and International Tax in the Digital Age?” (<https://shieldgeo.com/how-to-anticipate-virtual-permanent-establishment-and-international-tax-in-the-digital-age/>).

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- 3/ Digital Services Taxes:** Digital Services Tax (DST) is a tax on selected revenue streams attributed to the source country – the country in which an e-commerce provider generates its revenue. The types of revenues considered vary by state and can include revenues from online advertising, the provision of a digital interface, and the transmission of data collected about users for advertising purposes.<sup>22</sup> DST laws have been implemented in South Korea, Vietnam, Indonesia and China and have been proposed in New Zealand, Philippines and Thailand. DST directly affects advertising and intermediary activities that facilitate online sales of goods and services.
- 4/ Equalisation Levy:** Specific to India, the equalisation levy is a levy applied at a rate of 6% to “specified services” that include online advertisement and any provision of digital advertisement space – a scope similar to the EU’s DST. Moreover, India’s 2020 Finance Bill expanded the scope of the levy to foreign e-commerce operators at a rate of 2%. The expanded levy applies to online sales of goods and provision of services provided by an e-commerce operator.<sup>23</sup>

## 2. Indirect Taxes on E-Commerce

Indirect taxes are levied on goods and services before they reach consumers, added to the market price the consumer pays, and then ultimately paid to the government. Indirect taxes affecting cross-border e-commerce can be divided into two broad groups: consumption taxes and import duties.

- 1/ Consumption taxes:** Consumption taxes are indirect taxes levied on the selling price of goods and services consumed in a particular country, including both the supply and import of goods and services. These have been implemented as Value Added Taxes (VAT) or Goods and Services Taxes (GST) across multiple countries in the region. All countries in this review, with the exception of Cambodia, Lao PDR and Myanmar, have in place or have proposed

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<sup>22</sup> Asen, Elke. 2020. “What European OECD Countries Are Doing about Digital Services Taxes.” Tax Foundation, 22 June. (<https://taxfoundation.org/digital-tax-europe-2020/>).

<sup>23</sup> KPMG. 2020. “India: Digital Taxation, Scope of ‘Equalisation Levy.’” KPMG, 24 March. (<https://home.kpmg/us/en/home/insights/2020/03/tnf-india-digital-taxation-enlarging-the-scope-of-equalisation-levy.html>).

a consumption tax that targets the online sale of cross-border goods and services. While the criteria vary between countries, most producers selling goods or services into a particular country with a VAT or GST must charge this tax from their end consumer. For example, in Singapore, the sale of physical goods and digitised goods like movies, e-books or software are all subject to a 7% GST.<sup>24</sup> In Indonesia, companies are charged a VAT on taxable intangible goods and services sold through electronic platforms.<sup>25</sup>

**2/ Import Duties on Digital Products:** Since the 1998 Geneva Ministerial Conference, WTO members have upheld a moratorium against tariffs or customs duties on electronic transmissions. The moratorium has been extended every two years at each WTO Ministerial Conference. To date, in Asia, only Indonesia has a legislation to levy import duties on digital products. In 2018, the country proposed to apply tariffs on electronically transmitted products at 0%, with the potential to increase the duty at any point.<sup>26</sup> This means that once the provision enters into force, any Indonesian company importing digital products or services will need to register for customs duty (tariff) payments.

**3/ De-Minimis Threshold:** The *de-minimis* rule refers to exceptions on consumption taxes and/or duty collection given to items valued below a certain threshold. If a shipment falls under the *de minimis* threshold of a country, it may be exempt from additional import taxes and duties. All countries in this review, with the exception of Lao PDR, have in place a *de-minimis* threshold for import duties and/or consumption taxes. Their coverage varies across the region. For instance, in countries like Australia the *de-minimis* threshold exempts importers from customs duties, but not from indirect consumption taxes. ■

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<sup>24</sup> IRAS. 2020. "Goods and Services Tax (GST): What It Is and How It Works." (<https://www.iras.gov.sg/IRASHome/GST/GST-registered-businesses/Learning-the-basics/Goods-and-Services-Tax-GST---What-It-Is-and-How-It-Works/>).

<sup>25</sup> Elokasari, Eisya. 2020. "Indonesia Taxes Tech Companies through New Regulation." *The Jakarta Post*, 1 April. (<https://www.thejakartapost.com/news/2020/04/01/indonesia-taxes-tech-companies-through-new-regulation.html>).

<sup>26</sup> Officially, Indonesia opened up several tariff lines under HS Chapter 99 to include electronic delivery of books, music, software and "other digital products." See ISD. 2020. "The Future of WTO Moratorium on Duties on Electronic Transmissions: Why Shouldn't Border Control Be Implemented in the Internet Economy." *ISD Indonesia*, 23 January. (<https://www.isd-indonesia.org/index.php/2020/01/23/the-future-of-wto-moratorium-on-duties-on-electronic-transmissions-why-shouldnt-border-control-be-implemented-in-the-internet-economy/>).

The previous section highlighted the diverse approaches to the taxation of the digital economy. Whether through their effect on service providers, intermediaries, companies or users, direct and indirect taxation policies targeting cross-border online sales of goods and services increase costs for stakeholders in the regional e-commerce ecosystem. However, concerns about a potentially eroded tax base and unfair advantages for e-commerce businesses will continue to drive such policies across the region.

## 1. Direct Taxes on E-Commerce Platforms and Sellers

As shown in the previous section, countries in the region have leveraged Digital Permanent Establishment Rules and imposed Withholding and Digital Services taxes targeting the revenues of companies providing e-commerce-related services. Based on existing analysis, while most direct taxes imposed across the region target the revenues of companies facilitating the online sale of goods and services, if not managed properly, such policies could create knock-on effects that increase costs for other actors down the value chain – especially sellers leveraging or consumers using e-commerce platforms.

The proliferation of direct taxes on e-commerce companies has risen from the perception that digital companies are not paying “their fair share of tax.”<sup>27</sup> Proponents of such direct taxes argue that without adjustment, tax policies no longer fit the modern context where businesses rely heavily on hard-to-value intangible assets, data and automation, all of which can enable trading without physical domestic presence.<sup>28</sup> Unilateral direct taxation approaches, like the DST and Digital Permanent Establishment Rules, allow governments to tax the revenue of foreign digital and e-commerce companies offering goods and services in their country. These models have been critically examined by existing literature on the basis of whether such approaches are adequately justified, follow principles

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<sup>27</sup> Bauer, Matthias. 2018. “Digital Companies and Their Fair Share of Taxes: Myths and Misconceptions.” ECIPE. (<https://ecipe.org/publications/digital-companies-and-their-fair-share-of-taxes/>).

<sup>28</sup> OECD. 2019. “Addressing the Tax Challenges of the Digitalisation of the Economy.” (<https://www.oecd.org/tax/beps/public-consultation-document-addressing-the-tax-challenges-of-the-digitalisation-of-the-economy.pdf>).



of 'fair taxation' or unjustifiably target revenue instead of profits. For instance, recent empirical analysis of the EU's DST has found that a tax on digital revenues stands against tax efficiency and neutrality principles and undermines EU policy priorities for the digital economy by: (i) affecting employment and tax revenues on digitally enabled companies and (ii) increasing the risk of reciprocal treatment against the EU services exports and subsidiaries, amounting to € 31 billion under a 3% turnover tax.<sup>29</sup>

What most of current analysis misses is the impact that increased costs for e-commerce platforms could have on e-commerce vendors, firms and the consumers using those platforms. In the absence of Digital Physical Establishment Rules and the taxation of digitally-generated revenues, emerging economies and MSMEs were able to develop and sell internationally competitive goods and services across the world. Therefore, changing cost structure to the current e-commerce ecosystem could increase the trade and compliance costs for e-commerce vendors and buyers and, as a result, limit their ability to develop price competitive products for foreign markets.

Different governments have different rules covering tax, but tax regimes typically require that sellers and vendors have domestic tax registration numbers for all businesses selling in the country or for those who anticipate sales above a certain threshold. Most MSMEs do not have tax ID numbers in all potential sales jurisdictions, nor can they anticipate ahead of time whether they are likely to exceed the threshold(s) for sales in a given year. Under some policies, it may be that all MSMEs either have to have tax IDs in foreign markets or that every platform registers all online sellers. If the costs to the platforms of registering sellers are high, the response of many platforms may be to restrict the carriage of MSMEs in foreign markets that are unlikely to sell many products. This will reinforce the critique that many foreign platforms are insufficiently supportive of MSMEs.

Under DST and Equalisation Levy laws, the costs of those taxes on digital advertisement, marketing and e-commerce platforms are

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<sup>29</sup> Bauer, Matthias. 2018. "Digital Companies and Their Fair Share of Taxes: Myths and Misconceptions."; Lee-Makiyama, Hosuk. 2018. "The Cost of Fiscal Unilateralism: Potential Retaliation against the EU Digital Services Tax (DST)." ECIPE. (<https://ecipe.org/wp-content/uploads/2018/11/The-Cost-of-fiscal-unilateralism-Potential-retaliation-against-the-EU-Digital-Services-Tax-DST-1.pdf>).

likely to flow down the supply chain in the form of higher costs for MSMEs and consumers.<sup>30</sup> Given the impact that these taxes will have on the profitability and cost structure of digital services companies and e-commerce platforms, it is likely that they will modify their pricing policies and pass a portion of the tax burden onto both business owners and consumers. For example, after the implementation of the DST in France, Amazon notified sellers in the French market that it would increase its referral fee rate to reflect additional costs of operating in the market.<sup>31</sup>

For businesses that rely on online advertisement and e-commerce services in such markets, these additional costs may affect operations. For example, consider the case of a Cambodia-based producer selling apparel in the Indian market through an e-commerce platform. As a result of withholding, permanent establishment and equalisation levy taxes, the vendor may see substantial cost increases to any digital advertisement, marketing and e-commerce services it uses to sell into India. Such an additional tax burden could force the producer to pass the cost down to consumers in order to commercially survive. But a higher product price could make its product much less competitive in a market where e-commerce imports are already subject to a GST consumption tax.

## 2. Reducing Barriers to Trade Created by Indirect Taxation

Governments and multilateral forums have recognised the need to impose indirect taxes on physical goods and services purchased from third countries. As shown in Section 3, most countries in the region have a VAT or GST tax in place, levied on import transactions of goods and services. If not approached carefully, the application of cross-border indirect taxes could increase barriers to entry and limit trade for MSMEs that do not have the means and resources to comply with complicated regulations and administrative requirements. Indirect tax policies must strike a balance between the need to collect taxes and ensuring that these processes are not overly

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<sup>30</sup> Ecommerce Europe. 2018. "Factsheet – Taxation of the Digital Economy." (<https://www.ecommerce-europe.eu/wp-content/uploads/2018/07/Ecommerce-Europe-Digital-Tax-Factsheet-2.pdf>).

<sup>31</sup> Bauer, Matthias. 2019. "Digital Services Taxes as Barriers to Trade." ECIPE. ([https://ecipe.org/wp-content/uploads/2019/11/CaseStudy\\_DigitalService.pdf](https://ecipe.org/wp-content/uploads/2019/11/CaseStudy_DigitalService.pdf)).

complex nor discriminatory by creating non-tariff barriers – especially for MSMEs.

VAT and GST taxes both have a direct impact on MSMEs and can make compliance for non-residents, especially MSMEs, difficult in jurisdictions where they have no presence. Companies bear additional compliance costs to minimise the risk of incurring assessments and penalties that arise from the failure to properly register and pay VAT/GST, as this could have a significant impact on their e-commerce sales.<sup>32</sup> Moreover, potential obstacles to small businesses are compounded by a lack of standards and harmonisation across the region. Currently there is no clarity or agreement between countries about how tax should apply to e-commerce sales and who is responsible for charging; which may lead to double taxation.<sup>33</sup>

*De-minimis* rules offer an alternative for MSMEs that rely on low-value shipment cross-border e-commerce models. *De-minimis* thresholds can excuse low value shipments from customs import duties and GST/VAT consumption taxes, so that market entry barriers and compliance costs are significantly reduced and the delivery of low value e-commerce shipments is accelerated.<sup>34</sup> In addition, research has shown that *de-minimis* rules can simplify inspection procedures and enhance the efficiency of border crossing.<sup>35</sup>

However, as shown in Section 3, in the current regional environment, the value and scope of *de-minimis* thresholds vary widely across all countries. In some occasions they do not include GST/VAT consumption taxes, as shown in Australia and Indonesia, or are set so low that they effectively include the vast majority of e-commerce shipments, as in India or Indonesia (Table 1). As a result, an MSME that exports low value shipments to countries across the region must ensure that it complies with different indirect tax requirements and pays customs duties in each of its end markets. This can be prohibitive for most MSMEs,

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32 EY. 2016. “e-Commerce: Today’s Indirect Tax Challenges.” ([https://www.ey.com/Publication/vwLUAssets/ey-indirect-tax-chapter-report-2/\\$FILE/ey-indirect-tax-chapter-report-2.pdf](https://www.ey.com/Publication/vwLUAssets/ey-indirect-tax-chapter-report-2/$FILE/ey-indirect-tax-chapter-report-2.pdf)).

33 EY. 2016. “e-Commerce: Today’s Indirect Tax Challenges.”

34 United Nations ESCAP. 2019. “Selected Issues in Cross-Border e-Commerce Development in Asia and the Pacific.” (<https://www.unescap.org/publications/studies-trade-investment-and-innovation-no-91-selected-issues-cross-border-e-commerce>).

35 United Nations ESCAP. 2019. “Selected Issues in Cross-Border e-Commerce Development in Asia and the Pacific.”

which do not have the resources, economies of scale or operating margins to develop internationally competitive products under multiple country-specific indirect taxation regimes. For instance, a year after China removed its *de-minimis* threshold, approximately 50 to 70% of cross-border e-commerce firms shut down, as a result of low cash flow and insufficient supply of popular imported goods.<sup>36</sup>

### 3. Eliminating Duties on Digital Products

As shown in Section 3, some governments in the region are also considering imposing customs duty tariffs on imported digital products. Supporters of these tariffs have argued that increasing volumes of electronic transmissions have replaced trade in physical goods, and therefore these countries are losing out in the form of foregone tariffs that can be recouped through a duty applied to electronic transmissions.<sup>37</sup> Such policies go against the WTO's current moratorium on electronic transactions, but can have a significant impact on sellers and buyers of digital products and the growth of the digital economy as a whole.

For sellers of digital products such as software, digital media and other types of digital services, who are already subject to GST/VAT indirect taxation, a customs duty on their products can further reduce their competitiveness and affect their ability to operate in multiple markets. After all, unlike consumption taxes, a customs duty on electronic transactions only affects the prices of imported digital products. If multiple countries in the region decide to impose this type of tariff, the impacts could be disastrous for emerging economies that rely on imports or exports of digital products and services.

For buyers of imported digital products, which often are MSMEs, the imposition of tariffs on those products can significantly increase their compliance costs and affect their productivity gains. Companies across the region often rely on imported software products, cloud services, digital advertisement, digital rights management (DRM) tools and other types of

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<sup>36</sup> Yu, Sheila. 2017. "New Tax Regime Has Shaken up China's Cross-Border e-Commerce Sector." *TechNode*, 14 April. (<https://technode.com/2017/04/14/new-tax-regime-has-shaken-up-chinas-cross-border-e-commerce-sector/>).

<sup>37</sup> Banga, Rashmi. 2019. "Growing Trade in Electronic Transmissions: Implications for the South, 2019." UNCTAD. ([https://unctad.org/en/PublicationsLibrary/ser-rp-2019d1\\_en.pdf](https://unctad.org/en/PublicationsLibrary/ser-rp-2019d1_en.pdf)).

digital products to increase their productivity.<sup>38</sup> MSMEs that leverage digital tools can save time required for export related tasks by up to 29%.<sup>39</sup> A customs duty on those products could affect their operations in the following ways:

- 1/ Even if the tariffs are at 0%, as it is the case under Indonesia's proposed scheme, they will still create additional administrative and compliance costs for businesses and consumers of digital products. Customs requirements for every electronic transmission would be incredibly difficult to comply with for most businesses, especially MSMEs.<sup>40</sup>
- 2/ If the tariffs are higher than 0%, they would restrict the ability of businesses, or at least make it more costly, to use imported digital products. Tariffs could limit the supply of digital products in a particular market, affect domestic output, increase domestic prices and the cost of private production.<sup>41</sup>

Moreover, tariffs on electronic transmissions could impose an undue administrative burden on not just producers and consumers but also on tax authorities and carriers. The identification and collection of duties on electronic transmissions is a costly, complex process that requires the development of new infrastructure to track and attribute commercial value to electronic transmissions.<sup>42</sup>

The imposition of duties on electronic transactions creates additional costs for sellers, buyers and tax authorities, as well as on leveraging digital tools as production inputs, that may outweigh the potential revenues generated through tariffs. ■

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38 ISD. 2020. "The Future of WTO Moratorium on Duties on Electronic Transmissions: Why Shouldn't Border Control Be Implemented in the Internet Economy." ISD Indonesia, 23 January. (<https://www.isd-indonesia.org/index.php/2020/01/23/the-future-of-wto-moratorium-on-duties-on-electronic-transmissions-why-shouldnt-border-control-be-implemented-in-the-internet-economy/>).

39 Asia Pacific MSME Trade Coalition (AMTC) and AlphaBeta. 2018. "Micro-Revolution: The New Stakeholders of Trade in APAC."

40 ICC. 2019. "The Business Case for a Permanent Prohibition on Customs Duties on Electronic Transmissions." (<https://iccwbo.org/content/uploads/sites/3/2019/11/icc-issues-brief-2-moratorium.pdf>).

41 Hosuk-Lee Makiyama and Badri Narayanan. 2019. "The Economic Losses from Ending the WTO Moratorium on Electronic Transmissions." ECIPE. (<https://ecipe.org/publications/moratorium/>).

42 ICC. 2019. "The Business Case for a Permanent Prohibition on Customs Duties on Electronic Transmissions."

Given the potential impact of a regionally fragmented and overly burdensome regional e-commerce taxation landscape, spaces for multilateral cooperation and rules-setting provide a unique opportunity to develop direct and indirect tax regimes that do not jeopardise e-commerce growth and participation in the region. However, despite the importance of e-commerce and digital trade in regional growth and the need to streamline and minimise the negative effects of digital taxation policies, to date there have been no regional governance structures that enable the development of balanced and inclusive e-commerce taxation policies across all major countries in the region. This is likely a result of the exclusion of most digital taxation matters from trade agreement negotiations. For instance, the recently signed Regional Comprehensive Economic Partnership (RCEP) does not mention or address any issues related to direct or indirect taxation in its e-commerce chapter.<sup>43</sup> As a result, all parties involved in the trade discussions are left with different approaches to digital trade taxation and are unable to effectively communicate the risks and opportunities associated with various tax collection methods.

At the domestic level, the implementation of e-commerce laws varies across the region and taxation issues are seldom incorporated into their scope. According to UNCTAD's summary of the adoption of e-commerce legislation worldwide, in the Asia Pacific region many countries have not adopted e-commerce-related laws. For instance, only 43% of countries in the region have in place a consumer protection law and 57% have privacy and data protection laws.<sup>44</sup> In such a fragmented regulatory environment, e-commerce laws typically cover areas like online transactions, privacy and cybercrime, but only rarely include taxation issues.

Despite the interest of national governments to pursue e-commerce regulations unilaterally, regional and multilateral initiatives have not been able to develop and enforce common rules that would minimise the compliance and administrative costs of selling goods and services online across the region.

<sup>43</sup> To view RCEP's Electronic Commerce chapter visit <https://www.dfat.gov.au/sites/default/files/rcep-chapter-12.pdf>

<sup>44</sup> UNCTAD. 2020. "Summary of Adoption of E-Commerce Legislation Worldwide." United Nations Conference on Trade and Development. ([https://unctad.org/en/Pages/DTL/STL\\_and\\_ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx](https://unctad.org/en/Pages/DTL/STL_and_ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx)).

At the multilateral level, initiatives like the WTO's Joint Statement Initiative on E-Commerce (JSI) and the ASEAN E-Commerce Agreement have put in place frameworks that address e-commerce-related concerns like privacy, consumer protection and trade facilitation. However, neither provides a framework for the taxation of e-commerce goods and services.

Under the OECD's inclusive framework of base erosion and profit shifting (BEPS), 137 countries started a process to negotiate the implementation of measures that tackle tax avoidance, improve the coherence of international tax rules and ensure a more transparent tax environment.<sup>45</sup> The initiative includes most of the countries in Asia, with the exception of Cambodia, Lao PDR, Myanmar and the Philippines. BEPS mainly addresses direct and corporate tax concerns by developing rules that ensure the allocation of taxing rights with respect to business profits are no longer "circumscribed" by reference to physical presence and the implementation of a minimum global tax.<sup>46</sup> Despite such progress and a commitment to broker a consensus by the end of 2020, the discussions stalled in mid 2020 after the U.S. withdrew from the talks and Covid-19 pandemic restrictions slowed the pace of talks.<sup>47</sup> While promising, the BEPS initiative remains limited in its ability to develop a common framework for direct forms of taxation and excludes a coordinated approach to indirect forms of tax, which are those that most affect MSME trade costs.

Recent Free Trade Agreements (FTAs) and Digital Trade Agreements provide a potential platform for trade and tax discussions. Agreements like the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP),<sup>48</sup> the Digital Economic Partnership Agreement (DEPA)<sup>49</sup> and Digital Economic Agreements (DEA)<sup>50</sup> prohibit members from

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<sup>45</sup> OECD. 2020. "OECD/G20 Inclusive Framework on BEPS: Progress Report July 2019-July 2020." OECD Report. (<https://www.oecd.org/tax/beps/oecd-g20-inclusive-framework-on-beps-progress-report-july-2019-july-2020.pdf>).

<sup>46</sup> OECD. 2020. "OECD/G20 Inclusive Framework on BEPS: Progress Report July 2019-July 2020." 40.

<sup>47</sup> Scott, Mark. 2020. "Push for Global Digital Tax Agreement Stalls amid Tensions." POLITICO, 8 January. (<https://www.politico.eu/article/digital-tax-taxation-oecd-france-united-states-bruno-le-maire-face-book-amazon-apple-google/>).

<sup>48</sup> CPTPP members that have ratified the agreement include Singapore, Vietnam, Australia, New Zealand, Japan, Mexico and Canada. CPTPP members that have not ratified the agreement include Brunei, Malaysia, Peru and Chile.

<sup>49</sup> DEPA members include Singapore, New Zealand and Chile.

<sup>50</sup> DEA members include Singapore and Australia.

imposing customs duties on electronic transactions. However, they do not address issues related to the direct taxation of e-commerce platforms, the harmonisation of indirect taxation regimes and the implementation of *de-minimis* thresholds for both customs duties and consumption taxes.

In summary, existing governance mechanisms have remained limited in their development and enforcement of common digital taxation rules that would minimise key compliance and administrative costs for the online sale of goods and services across the region. ■





# DISCUSSION/POLICY RECOMMENDATIONS

With a thriving digital economy, increased economic integration and a dynamic MSME sector, the Asia-Pacific region offers a unique opportunity to develop a dynamic, inclusive and more integrated e-commerce environment. However, the risks posed by a fragmented policy landscape, competing policy priorities, a lack of consideration of the implications of taxation policies on the regional e-commerce ecosystem – especially the operations of MSMEs – and the need to strengthen governance mechanisms promoting a less disruptive and more integrated approach to e-commerce taxation policy, all remain key challenges to e-commerce growth in the region.

To ensure that moving forward, digital taxation policies do not compromise the growth of e-commerce, research and policy initiatives should consider the following principles:

## **A. Manage the Risks of Direct Taxation Approaches**

For businesses, especially MSMEs that rely on online advertisement and e-commerce services to compete in foreign markets, a combination of withholding taxes, permanent establishment, DST or equalisation levy taxes are likely to dramatically increase the costs of those services.

To ensure that direct taxation initiatives do not hinder the ability of businesses to develop internationally competitive products, domestic e-commerce taxation policies and initiatives like the OECD's BEPS, should assess the possible knock-on effects of policies on the broader e-commerce ecosystem – especially their potential to trigger significant price increases for e-commerce services.

## B. MSME Friendly and Coordinated Approach to Indirect Taxation

The lack of a common approach to the taxation of e-commerce transactions and the elimination of *de-minimis* thresholds has the potential to be trade prohibitive for MSMEs that rely on low product margins to remain competitive across multiple international markets.

To ensure that indirect tax policies strike a balance between the need to collect taxes and to ensure that these processes are not overly complex nor discriminatory, regulatory approaches should:

- streamline the use of de-minimis thresholds to reduce market entry barriers and compliance costs of MSMEs that rely on low-value-shipment cross-border e-commerce models, and
- promote the development of common approaches and standards for consumption taxes in the region to minimise administrative and compliance costs and the risks of double taxation.

## C. Avoid Customs Duties on Digital Products

Most MSMEs employing a cross-border e-commerce model adopt human resources (HR), Enterprise Resource Planning (ERP), financial, logistics, marketing and e-commerce services that best meet their international operation needs. Therefore, a duty on digital products will significantly increase the duty, administrative, production and distribution costs for MSMEs using any type of imported digital product.

Considering the direct costs and the discriminatory nature of imposing tariffs on digital products, regulatory approaches should uphold the WTO moratorium on electronic transactions and work on regional initiatives to use non-discriminatory forms of taxation in a way that does not threaten the dynamism and inclusivity of the regional e-commerce ecosystem. ■

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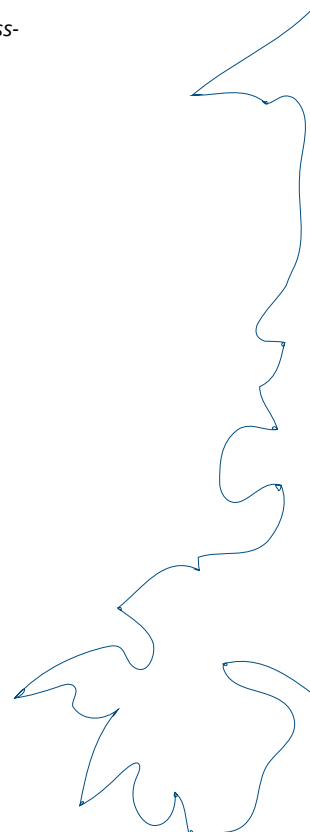
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A stylized map of Asia is shown in the background, with the continent's outline rendered in various colors: blue, pink, orange, and yellow. The map is partially obscured by text blocks.

From India to South Korea, Singapore to Cambodia, digital technologies are deeply embedded in Asian life, not only driving economic opportunities and new cultures but also bringing new risks and harms. The Next Digital Decade: Case Studies from Asia contains two volumes of case studies on developments in areas such as digital public infrastructure, ethical tech, e-health, future of work, disinformation, fintech, social media, cybersecurity, surveillance, and much more.

The featured case studies are written by a mixture of established and early career scholars from the region, who bring a critical lens to each case study that is also peer reviewed by senior practitioners and academics from around the world. The publication offers a vantage point looking back at developments while offering a vision for what the next digital decade may look like that will be useful to scholars, policy makers, and entrepreneurs in Asia, Europe, and beyond.

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