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The "Smart City" Debate

Exploring Asian Models of Smart Cities through Japan–ASEAN Cooperation

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I INTRODUCTION

Various cities worldwide are engaged in smart city projects, seeking effective solutions to urban issues (e.g., traffic congestion, waste management, and housing) and global ones (e.g., climate change, energy consumption, and population growth). With the onset of the 2019 coronavirus disease (COVID-19) pandemic, smart city projects began to receive increasing attention. While smart city policies are linked to specific urban policies (e.g., smart mobility and smart grids), smart cities are currently understood as a more "holistic" solution to various urban issues. Moreover, smart cities cannot be discussed without mentioning big data or artificial intelligence (AI) technologies.

This chapter is inspired by the "smart city" debate that started in the 2000s, led by scholars in the fields of geography and sociology engaged in urban research. On the one hand, a vast body of literature exists on smart cities against the backdrop of the proliferation of "corporate-oriented smart cities."[1] The scholarship criticizes "technology-driven, market-led, and top-down" smart city projects led by big information and communications technology (ICT) corporations[2] because they usually propose "one-size-fits-all" solutions for urban development.[3] On the other hand, instead of such an ICT-centric approach, the smart city scholarship suggests "inclusive," "participatory," and "citizen-centric/people-centric" approaches.[4]

[1] See, e.g., Robert G Hollands, "Critical Interventions into the Corporate Smart City" (2015) 8(1) Camb J Reg Econ Soc 61, 62; Alan Wiig, "IBM's Smart City as Techno-Utopian Policy Mobility" (2015) 19(2–3) City 258, 270; Ola Söderström et al, "Smart Cities as Corporate Storytelling" (2014) 18(3) City 307, 318.

[2] Luca Mora and Mark Deakin, *Untangling Smart Cities* (Elsevier 2019) 119.

[3] Rob Kitchin, "Making Sense of Smart Cities: Addressing Present Shortcomings" (2015) 8(1) Camb J Reg Econ Soc 131, 132–133.

[4] See, e.g., Andrew Karvonen et al, "Introduction: Situating Smart Cities" in Andrew Karvonen et al (eds), *Inside Smart Cities: Place, Politics, and Urban Innovation* (Routledge 2018) 6; Robert Cowley et al, "The Smart City and Its Publics: Insights from across Six UK Cities"

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However, such debates have largely occurred in the context of European and North American smart city projects. It has been argued: "there are no clear answers as to what a smart city is – anywhere in the world. . . Most smart city definitions and, thereby its scope, are all western."[5] This chapter builds on this core observation and asks whether Asian smart cities provide an alternative to those of the West and, related, what patterns and relationships are observable between Asian approaches?[6] While the purpose of this chapter is not to provide a comprehensive comparison between Western and Asian smart cities, it suggests that there may be important differences and that these are most fruitfully explored in inter-Asian contexts.

In this regard, the literature on Asian smart cities is growing; scholarly work includes not only case studies (e.g., Singapore, India, China, and South Korea) but also wider comparative studies among Asian countries.[7] Following this emerging literature, this chapter provides a basis for Asian models by analyzing how Japan, and competitors including South Korea and China, engage with member states of the Association of Southeast Asian Nations (ASEAN) on smart city projects. In particular, it highlights the role of Japan in shaping the ideas and norms of smart cities by exporting smart solutions. Exporting the ideas of smart cities can eventually affect urban governance, including legal infrastructures that local governments adopt. With this analysis, this chapter contributes to the study of Inter-Asian Law (IAL).

The remainder of the chapter is organized as follows. It begins by explaining the complexities embedded in smart city research, including the hard and soft law dimensions in smart cities. Next, it provides an overview of Asian smart cities and explains some of their features. Then, this chapter examines smart city cooperation between Japan and ASEAN countries. Discussion section considers the potential diffusion of the smart city concept and urban governance through Japan–ASEAN smart city cooperation, while simultaneously examining possible regulatory

(2018) 11(1) Urban Research & Practice 53; Paolo Cardullo and Rob Kitchin, "Being a 'Citizen' in the Smart City: Up and down the Scaffold of Smart Citizen Participation in Dublin, Ireland" (2019) 84 GeoJournal 1.

5 Goutam Das and Manu Kaushik, "The Quest to Build 100 Smart Cities and Problems on the Way" (*Business Today*, March 15, 2015), www.businesstoday.in/magazine/cover-story/story/challenges-the-govt-faces-in-building-100-smart-cities-india-142884-2015-02-25, accessed June 12, 2024.

6 For literature discussing divergence between the Global North and Global South, see Byron Miller, "Worlding and Provincialising Smart Cities: From Individual Case Studies to a Global Comparative Research Agenda" (2021) 58(3) Urban Studies 655, 658.

7 For the literature on smart cities in Asia, see Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018); Yu-Min Joo and Teck-Boon Tan (eds), *Smart Cities in Asia: Governing Development in the Era of Hyper-Connectivity* (Edward Elgar Publishing 2020); Thanh Phan and Daniela Damian (eds), *Smart Cities in Asia: Regulations, Problems, and Development* (Springer 2022); National University of Singapore, "Workshop: Smart Cities in Global Comparative Perspective: Worlding and Provincializing Relationships" (2022), https://ari.nus.edu.sg/events/smart-cities/, accessed June 12, 2024.

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competition among Japan, South Korea, and China to export smart city projects into ASEAN countries.

II COMPLEXITIES OF SMART CITIES

In the smart city literature, there has been a long scholarly debate on the definition and concept of smart cities. Since this chapter's purpose is not a full analysis of the scholarly debate, the chapter provides the Organisation for Economic Co-operation and Development (OECD)'s concept of smart cities as a baseline definition: "initiatives or approaches that effectively leverage digitalization to boost citizen well-being and deliver more efficient, sustainable and inclusive urban services and environments as part of a collaborative, multi-stakeholder process."[8] While this definition includes several elements of smart cities which are helpful for understanding developments in Asia, this chapter underscores that defining the contours of smart cities remains contested in the region.

Apart from the debate on the concept and definition, smart cities are complex and dynamic infrastructures in light of the following two dimensions.

A. *The Smart City as a Layered System*

The first complexity pertains to the fact that a smart city is not itself a technology but rather a system. Smart cities generally have a three-layered structure. First, the bottom level consists of city infrastructure and utilities (e.g., energy management systems, water and waste management systems, and public transportation controls), which are linked to digital equipment (e.g., cameras, GPS, sensors). Second, the middle level consists of data gathered from citizens and public administration bodies that are connected and analyzed using software and applications on a data platform. Finally, at the top level, data-based urban services can be offered in a comprehensive manner, covering multiple sectors such as energy, transportation, waste, education, health, and safety.

Thus, a smart city is a system. However, "smart technologies" play an important role within the system. Smart technologies refer to three elements of technology to deliver urban services: a collection of data, data processing, and automation of decision-making.[9] On this point, AI technologies are core smart technologies.

[8] OECD, *Enhancing the Contribution of Digitalisation to the Smart Cities of the Future* (OECD 2019) 7. For the discussion of international definitions of smart cities, see Yoshiko Naiki, "Smart Cities and International Trade Law" (2024) 23(3) World TR 363, 365–366.

[9] Astrid Voorwinden, "The Privatised City: Technology and Public-Private Partnerships in the Smart City" (2021) 13(2) Law, Innovation and Technology 439, 440 (referring toMireille Hildebrandt, *Smart Technologies and the End(s) of Law: Novel Entanglements of Law and Technology* (Edward Elgar Publishing 2015)). See also Alan Smart and Dean Curran, "Prospects and Social Impact of Big Data-Driven Urban Governance in China: Provincializing Smart City Research" in Weiping Wu and Qin Gao (eds), *China Urbanizing: Impacts and*

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Accordingly, there are both promises and challenges associated with smart city projects: AI and big data can bring improvements in efficiency and decision-making when providing services while there are increased privacy and security risks.[10]

B. *Hard and Soft Laws of Smart Cities*

The second complexity relates to soft and hard laws of smart cities with the former mostly preceding the latter.[11] State action on smart cities typically begins with "soft" instruments – the adoption of national policies and strategies. Smart city policies should be included in the wider policy and planning measures for science and technology of the country. At this initial stage, there will be considerable discussion on the vision, concepts, and ideas of smart cities in the context of each country.

While soft law prevails initially in the design of the foregoing, after the adoption of national policies, legislation related to smart cities (i.e., "hard law") may come into effect. Various existing laws are relevant to smart city projects such as the laws of the environment, transportation, energy, and education. Apart from these existing laws, new legislation for smart cities may concern "special economic zones" (SEZs). The law for SEZs creates experimental sites for new policies and strategies, including a "regulatory sandbox,"[12] a concept that invites experimentation in regulatory design, including deregulation for the purpose of demonstrating new technologies. Deregulation aims, fundamentally, to promote new activities rather than to regulate them. Thus, smart city projects are often subject to the laws of SEZs.

For instance, in 2020, Japan amended the law of national strategic special zones to promote smart cities, known as the "law of super cities."[13] The amended law has undergone two main revisions.[14] First, as a "data

Transitions (University of Pennsylvania Press 2022) 210 ("Smart urbanism and data-driven (urban) governance involve three key aspects that differentiate them, at least discursively, from previous forms of governance: the collection of big data, the use of proprietary algorithms to analyze the data, and the real-time use of data to manage the urban environment.").

[10] The literature on AI/big data and smart cities is vast. See, e.g., AI & Society, "Special Issue on Urban AI" (vol 38 issue 3, June 2023); Rob Kitchin, "Data-Driven Urbanism" in Rob Kitchin et al (eds), *Data and the City* (Routledge 2018); Robert Brauneis and Ellen P Goodman, "Algorithmic Transparency for the Smart City" (2018) 20 Yale J L and Technology 103; Janine S Hiller and Jordan M Blanke, "Smart Cities, Big Data, and the Resilience of Privacy" (2017) 68 Hastings L.J. 309; Ibrahim Abaker Targio Hashem et al, "The Role of Big Data in Smart City" (2016) 36 Int J Inf Manag 748.

[11] Astrid Voorwinden and Sofia Ranchordás, "Soft Law in City Regulation and Governance" in Mariolina Eliantonio (ed), *Handbook on Soft Law* (Edward Elgar 2023) 337–352.

[12] I am grateful to Veronica Taylor for bringing this point of "special economic zones" to my attention. For a discussion of "special economic zones" in the Japanese context, see Mayu Terada, "The Influences of the Law of Super City on Local Governments" (2020) 730 Monthly Jichiken 10, 11–12 (in Japanese).

[13] The Law of National Strategic Special Zones, Amended on May 27, 2020.

[14] For a detailed discussion, see Osamu Nishigami, "The Amendment of the Law of National Strategic Special Zones" (2020) 482 Hougaku Kyoushitsu 49, 51–52 (in Japanese).

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platform"[15] is necessary for smart cities, the revision promotes activities such as setting up the data platform and collecting and providing data to relevant business actors. Second, the revision requires responding to the views and concerns expressed by citizens and relevant stakeholders.

Additionally, one of the important existing laws relevant to many regions and cities around the world is the law of data protection and privacy, as smart city projects involve data collection and processing. A core issue is whether the existing laws can function appropriately in the context of data collection and processing in smart cities. In other words, it is important to assure whether existing privacy frameworks can address unique privacy challenges of data collection and processing in the context of smart cities where multiple public and private actors may have access to and share datasets.[16]

III FEATURES OF ASIAN SMART CITIES

Building on the foregoing discussion on the complex system and role of law in smart cities, I argue that Asian smart cities demonstrate both similarities to and divergences from Western smart cities. In this section, I suggest that there are three features of Asian smart cities that are unique. While contested within the region, these features distinguish Asian smart cities from Western equivalents.

A. *"Problem-Oriented" Projects*

A notable feature of Asian smart cities is "problem-oriented" smart projects. In other words, smart cities are tools used to solve specific urban problems in Asia. On this point, the expression "green experimentation" has grown out of low-carbon urban experiences around the world.[17] Smart city projects are often referred to as "experiments"; therefore, experimental aspects are not a particularly distinctive feature in Asian smart cities.[18] However, Asian smart cities' experimentation tends to focus more on environmental protection compared to Western smart cities.

[15] A city itself may serve as a data platform by "absorbing data from the urban environment . . . and then centralizing and repackaging it in accessible, usable interfaces for developers." Kelsey Finch and Omer Tene, "Smart Cities: Privacy, Transparency, and Community" in E Selinger, J Polonetsky and O Tene (eds), *The Cambridge Handbook of Consumer Privacy* (CUP 2018) 125, 135.

[16] Trevor Braun et al, "Security and Privacy Challenges of Smart Cities" (2018) 39 Sustainable Cities and Society 499, 501. For the challenges in the context of smart cities and EU's General Data Protection Regulation, see Laurens Vandercruysse et al, "Data Control in Smart City Services: Pitfalls and How to Resolve Them" (2019) 5(4) EDPL 554.

[17] The term "green experimentation" is borrowed from Peter Drahos, *Survival Governance: Energy and Climate in the Chinese Century* (OUP 2021) 166.

[18] See, e.g., James Evans et al (eds), *The Experimental City* (Routledge 2017); Robert Cowley and Federico Caprotti, "Smart City as Anti-Planning in the UK" (2019) 37(3) Environ Plann D Soc Space 428–448.

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Asian smart cities' "green" experimentation has been promoted with particular consideration given to Asia's urban demographic features, that is, its large urban populations, and associated environmental concerns. Scholars have noted that features of urbanization in Asia are distinct from those in other regions.[19] According to UN-Habitat, "Asia has the highest number of urban dwellers worldwide."[20] Furthermore, as of early 2023, "[t]here were a total of 28 megacities with a population of over 10 million inhabitants in the Asia-Pacific region."[21] This feature of urban density raises concerns; "High population densities in megacities can often lead to environmental problems. A dense population, and thus heavier reliance on road network infrastructures, causes increased traffic. This in turn can create significant burdens on the environment."[22] This explains why Asian smart cities have had a "green" experimentation factor compared to Western smart cities. Related to this point, experts have noted that the initial policy demand for Chinese smart cities was based on the need to combat air pollution.[23]

B. *The Role of State-Led Initiatives*

In Western smart city projects, the role of local city governments in building and designing smart cities has been pronounced; as for the famous cases of Amsterdam, Barcelona, Helsinki, and Vienna, experts have noted that city governments play a similarly important role, setting up "a strategic framework" and "a collaborative environment" to promote smart cities.[24] By contrast, Asian smart city projects are more based on national government-driven strategies. Whereas Western smart city projects are also supported by national-level policies in terms of funding and coordination (e.g., the Smart City Challenge[25] of the United States (US) or the European Union (EU) Horizon 2020 program),[26] there is a greater degree of central

[19] Li Yu and Federico Caprotti, "Introduction" in Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018) 1.

[20] UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanization* (UN-Habitat 2020) 12 (with the region accounting for "54 per cent of the world's urban population").

[21] Statista, *Number of Inhabitants in Megacities in the Asia-Pacific Region in 2023* (April 20, 2023), www.statista.com/statistics/910856/asia-pacific-population-in-megacities/, accessed June 12, 2024.

[22] Statista Research Department, *Megacities in the Asia-Pacific Region: Statistics & Facts* (February 27, 2024), www.statista.com/topics/4855/megacities-in-asia-pacific/#topicOverview, accessed June 12, 2024.

[23] Wenxuan Yu and Chengwei Xu, "Developing Smart Cities in China: An Empirical Analysis" (2018) 5(3) IJPADA 1–16.

[24] Mora and Deakin (n 2) 150–151.

[25] US Department of Transportation, *Smart City Challenge* (2015), www.transportation.gov/smartcity, accessed June 12, 2024.

[26] The European Commission provides the funding under the Horizon 2020 research and innovation program for European smart city projects. European Commission, Horizon 2020, Smart Cities and Communities, https://ec.europa.eu/inea/en/horizon-2020/smart-cities-communities, accessed June 12, 2024; Smart Cities Marketplace, Projects and Sites Overview, https://smartcities-marketplace.ec.europa.eu/, accessed June 12, 2024.

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government engagement in Asia. This suggests that "the state's central role in smart city development is undeniable and has been highlighted for countries with strong state planning centrality."[27] The "developmentalist smart city concept" in Asia is, "hardware-driven projects developed by governments and big businesses who are keen to apply the most cutting-edge technologies."[28]

Asian smart cities thus demonstrate tighter linkages between entrepreneurs, big tech, and central governments. Ayona Datta, a smart city researcher focused on India, observed that smart cities in Asia have been promoted through "state-centric entrepreneurial intervention."[29] Datta argues that the framing of "development," "modernity," and "economic growth" in smart cities supports state-driven urban development. For instance, since 2015, India has been making plans to transform 100 cities into smart cities.[30]

Similarly, in 2017, Indonesia launched the "Toward 100 Smart Cities" movement.[31] After the engagement of national governments, the role of ICT corporations became more prominent. Asian smart cities have been described as "techno-centric"[32] and "high-tech."[33] Datta has pointed out the high degree of "technocratic nationalism" through which smart cities are promoted by a group of people "[believing] in the power of technology."[34]

At the same time, as Yu-Min Joo argues, there are several variations of Asian state-led smart city projects.[35] For instance, even China and Singapore, which have been seen as typical developmentalist smart city cases in Asia, have very different pathways when we look at their development and progress. Chinese smart cities, led by a powerful party-state regime, are a distinctive case.[36] Chinese domestic smart cities

[27] Yu-Min Joo, "Developmentalist Smart Cities? The Cases of Singapore and Seoul" (2023) 27(Suppl 1) Int J Urban Sci 164, 167.

[28] Ibid.

[29] Ayona Datta, "Introduction: Fast Cities in an Urban Age" in Ayona Datta and Abdul Shaban (eds), *Mega-Urbanization in the Global South: Fast Cities and New Urban Utopias of the Postcolonial State* (Routledge 2017) 14–15 (referring to Mariana Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (Anthem Press 2013)). See also Ayona Datta, "New Urban Utopias of Postcolonial India: 'Entrepreneurial Urbanization' in Dholera Smart City, Gujarat" (2015) 5(1) Dialogues in Human Geography 3–22.

[30] Government of India, "About Smart Cities," https://smartcities.gov.in/about-the-mission, accessed June 12, 2024.

[31] Jonathan Davy, "What Lies ahead of Indonesia's 100 Smart Cities Movement?" (*The Jakarta Post*, December 5, 2019), www.thejakartapost.com/life/2019/12/05/what-lies-ahead-of-indonesias-100-smart-cities-movement.html, accessed June 12, 2024.

[32] See, e.g., Seungho Yoo, "Songdo: The Hype and Decline of World's First Smart City" in Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018) 146.

[33] See, e.g., Tim Bunnell, "Smart City Returns" (2015) 5(1) Dialogues in Human Geography 45.

[34] Ayona Datta, "A 100 Smart Cities, A 100 Utopias" (2015) 5(1) Dialogues in Human Geography 49, 50.

[35] Joo (n 27) 178 ("I highlighted how the existing developmentalist smart city concept as a state-led and hardware-driven project is far from adequate in explaining what is taking place in Asia's global cities today").

[36] Dean Curran and Alan Smart, "Data-Driven Governance, Smart Urbanism and Risk-Class Inequalities: Security and Social Credit in China" (2021) 58(3) Urban Studies 487, 494.

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are related to "green experimentation" but are primarily concerned with "green growth" and "green development," thus seeking an alternative development pathway from the conventional economic growth-centric approach.[37] This is particularly seen in China's "eco-city"[38] projects.[39] These eco-cities were developed against the background of the Chinese government's announcement of the nation's 11th and 12th five-year plans (in the 11th plan [2006–2010], there was a shift from "growth first" to "sustainable development," and in the 12th plan [2011–2016], to "green development and climate change").[40] The first eco-city, in Dongtan near Shanghai (launched in 2006), is a well-known example, although the project did not proceed as planned due to several problems such as the land quota allocation and corruption.[41] Another well-researched Chinese eco-city case is the Tianjin project, which began under the 2007 China–Singapore framework agreement[42] and is generally regarded as a greener and sustainable case.[43]

However, such a domestic image of smart cities in China has also changed. China exports smart technologies through the "Digital Silk Road" under China's "Belt and Road Initiative."[44] Notably, some Asian smart city projects have been led by Chinese big-tech corporations, such as the Alibaba Group[45] and Huawei.[46] For instance, Huawei has engaged in smart city projects in Malaysia,[47]

[37] Frans Sengers et al, "Experimenting in the City: Unpacking Notion of Experimentation for Sustainability" in James Evans (ed), *The Experimental City* (Routledge 2016) 19.

[38] Eco-cities are defined by their ecological considerations, such as low-carbon initiatives. See, Drahos (n 17) 164; Fulong Wu, "China's Eco-Cities" (2012) 43(2) Geoforum 169.

[39] However, this is not to deny that there have been a number of existing European eco-city projects. See, Drahos (n 17) 164 ("By 2009, one survey had identified some 79 practical eco-city initiatives around the world, ranging from entirely new cities to retrofitting initiatives. The two regions of greatest activity were Europe (34) and Asia/Australia (27)").

[40] Xuefei Ren, "Green as Urban Spectacle in China" in Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018) 79.

[41] Wu (n 38) 169–171; Drahos (n 17) 165–166.

[42] For the government-to-government city project between China and Singapore, see Singapore, Ministry of National Development, Tianjin Eco-City, www.mnd.gov.sg/tianjinecocity/who-we-are, accessed June 12, 2024.

[43] Federico Caprotti, *Eco-Cities and the Transition to Low Carbon Economies* (Palgrave Macmillan 2015) 55. See also Federico Caprotti and Ziyue Gong, "Challenging the Eco-City: Residents' Perceptions of Social Sustainability in Tianjin Eco-City, China" in Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018) 161; Ren (n 40) 80–81.

[44] For the literature on China's smart city technologies exports, see, e.g., Matthew S Erie and Thomas Streinz, "The Beijing Effect: China's 'Digital Silk Road' as Transnational Data Governance" (2021) 54(1) NYU J Int'l L and Pol 1, 71; Drahos (n 17) 161–164; Catherine Atha et al, *China's Smart Cities Development* (SOS International LLC 2020) 78, www.uscc.gov/sites/default/files/China_Smart_Cities_Development.pdf, accessed June 12, 2024.

[45] See, e.g., Smart and Curran (n 9) 215; Curran and Smart (n 36) 495.

[46] Cheng Ting-Fang and Lauly Li, "Huawei Says Smart Business Will Grow Despite US Pressure" (*Nikkei Asia*, October 20, 2020), https://asia.nikkei.com/Editor-s-Picks/Interview/Huawei-says-smart-city-business-will-grow-despite-US-pressure, accessed June 12, 2024.

[47] Farah Adilla, "i-City Partners with Huawei to reinvent Next Smart City" (*New Straits Times*, January 20, 2022), www.nst.com.my/business/2022/01/764480/i-city-partners-huawei-reinvent-next-smart-city, accessed June 12, 2024.

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Thailand,[48] and Indonesia.[49] Such engagements by China in Asian smart cities are also enhanced by the fact that since 2020 "China has accelerated the international promotion of some of its smart city technologies" and "providing 'anti-epidemic solutions' has become the new selling point for several Chinese tech companies."[50] Indeed, "the COVID-19 pandemic has accelerated the deployment of innovation and technology in urban areas."[51] Although surveillance and monitoring technologies were widely used even before the COVID-19 pandemic, digitalized surveillance technologies for disease tracking and contact tracing are now proliferating.[52]

In addition to China, Singapore has been a pioneer in designing certain types of smart cities, for example, the top-down Smart Nation project. Scholars describe Singapore's initiative as "a state-led initiative orchestrated by civic-minded tech-talent."[53] To be specific, the Singapore government "insources" tech talent instead of outsourcing to private sectors in developing the smart city: "Insourcing involves attracting tech talent to Singapore, instilling technical knowledge and capabilities amongst those responsible for city governance, and thus upgrading the technical competencies of the public sector [of Singapore] more generally."[54] This is a unique state-led approach that avoids outsourcing projects to private firms as "privatization" in smart cities has raised concerns about the increased role of the private sector eroding that of the government, which is viewed as a negative outcome.[55]

Regarding the role of Singapore government, Singapore has another role in the region – leading the smart city movement in ASEAN countries. The next Section III.C turns to this regional aspect of smart cities.

C. *"Technocratic Regionalism": ASEAN and Smart Cities*

In ASEAN countries, "Singapore is highly active in trying to forge a smart cities network and regional platforms."[56] At the 2018 ASEAN Summit, Singapore

[48] "Huawei Joins Hands with GLAND to Enable 'Smart City' in Thailand" (*Source: Taiwan External Trade Development Council*, March 3, 2022), www.taiwantrade.com/tradenews/detail.html?newsid=2487840, accessed May 28, 2025.

[49] Huawei, "XL Axiata and Huawei Sign MoU on 5G City Joint Innovation" (October 27, 2022), www.huawei.com/en/news/2022/10/5gcity-green5g-ultra-wideband-multi-antenna, accessed June 12, 2024.

[50] Alice Ekman and Cristina de Esperanza Picardo, "Towards Urban Decoupling? China's Smart City Ambitions at the time of Covid-19" (2020) EUISS (Brief 10) 1 2, www.iss.europa.eu/sites/default/files/EUISSFiles/Brief%2010%20Smart%20Cities.pdf, accessed June 12, 2024.

[51] UN-Habitat (n 20) xxx.

[52] Pedro A Villarreal, "International Law and Digital Disease Surveillance in Pandemics: On the Margins of Regulation" (2023) 24(3) German Law Journal 603, 605.

[53] Orlando Woods, Tim Bunnell and Lily Kong, "Insourcing the Smart City: Assembling an Ideo-Technical Ecosystem of Talent, Skills, and Civic-Mindedness in Singapore" (2023) 45(5) *Urban Geography* 735, 750.

[54] Ibid 736.

[55] Voorwinden (n 9).

[56] Tai Wei Lim, "Smart Cities in East Asia: ASEAN-China Cooperation in the BRI and Its Digital Nexus" in Yang Yue and Li Fujian (eds), *The Belt and Road Initiative: ASEAN Countries' Perspectives* (World Scientific 2019) 258.

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proposed the "ASEAN Smart Cities Network" (ASCN),[57] and to date, twenty-six pilot cities have been launched.[58]

ASEAN has three objectives for smart city development: competitive economy, sustainable environment, and high quality of life.[59] Under these objectives, six areas are targeted for smart city development: (1) civic and social, (2) health and well-being, (3) safety and security, (4) quality of the environment, (5) built infrastructure, and (6) industry and innovation.[60] These targeted areas resonate with the problem-oriented features of Asian smart cities discussed above.

Singapore's leadership has been described as "technocratic regionalism";[61] that is, "[promoting] a technocratic form of regional integration and consolidation," to develop smart city projects across Southeast Asia.[62] Singapore's ambition has motivated other countries in Asia to pursue smart city initiatives. Japan is one of ASEAN's partners supporting smart city development; other partners include South Korea, China, Australia, the US, and the EU.[63]

Hence, whereas China and Singapore have left their strong presence in inter-Asian smart cities, Japan has emerged as an impactful leader as well. Against this backdrop, Section IV focuses on Japan's engagement in smart city projects in ASEAN. It first looks at the development of Japan's smart city policies and then explores smart city cooperation between Japan and the ASEAN countries.

IV SMART CITY COOPERATION BETWEEN JAPAN AND ASEAN

A. *Development of Smart City Policies in Japan*

The Japanese government has only recently shown a strong interest in smart cities; yet in that short time, Japan has become a major player in the Asian region. However, it has made some efforts in the past. In the context of promoting

[57] Singapore's Concept Note on ASEAN Smart Cities Network (March 18, 2018), https://asean.org/wp-content/uploads/2019/02/ASCN-Concept-Note.pdf, accessed June 12, 2024.

[58] ASEAN Smart Cities Network, Pilot Cities, https://asean.org/our-communities/asean-smart-cities-network/, accessed June 12, 2024.

[59] ASEAN, ASEAN Smart City Framework (July 8, 2018) paras 6–8, https://asean.org/wp-content/uploads/2021/09/ASEAN-Smart-Cities-Framework.pdf, accessed June 12, 2024.

[60] Ibid paras 13–18. See also Centre for Liveable Cities, *ASEAN Smart Cities Network* (2018) 11, www.clc.gov.sg/docs/default-source/books/book-asean-smart-cities-network.pdf, accessed June 12, 2024.

[61] Lily Kong and Orlando Woods, "Scaling Smartness, (De)Provincialising the City? The ASEAN Smart Cities Network and the Translational Politics of Technocratic Regionalism" (2021) 117 Cities 103326 at 1.

[62] Ibid.

[63] See ASEAN Smart Cities Network, Monitoring & Evaluation Report 2022, https://asean.org/wp-content/uploads/2022/10/2022-ASCN-ME-Report-Final_21Sep2022-for-public.pdf, accessed June 12, 2024; Masaki Okamoto, "Mushrooming Smart Cities in ASEAN Countries and the Unhealthy Multi-Actor Competition" (*Roles Report*, No. 20, 2022), https://roles.rcast.u-tokyo.ac.jp/uploads/publication/file/42/publication.pdf, accessed June 12, 2024.

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renewable energy combined with smart grid technologies, the Ministry of Economy, Trade, and Industry (METI) took the lead (starting before the 2011 earthquake, tsunami, and Fukushima nuclear crisis).[64] Such efforts served as a pathway to the current Japan's smart city national policies, and this section discusses three points that mark the Japanese government's increasingly strong engagement in the promotion of smart city policies.

First, Japan's engagement can be found in the Sixth Science, Technology, and Innovation Basic Plan (hereinafter, the Sixth Basic Plan) adopted by the Cabinet in March 2021[65] and covering the period 2021–2025. The Sixth Basic Plan identifies six policies for transforming society in a sustainable and resilient manner, including the development and proliferation of smart cities.[66] The smart city is framed as an "innovation" and a solution for a sustainable and resilient society. This was the first time in the Science, Technology, and Innovation Basic Plan that smart cities were mentioned – the previous Fifth Basic Plan only mentioned the promotion of a "super smart society."[67] Moreover and important for the study of IAL, the Sixth Basic Plan describes the proliferation of smart cities outside Japan, clearly stating that Japan will disseminate the concept of a smart city and export smart-city-related infrastructure and data management systems, particularly with other Asian countries.[68]

The second engagement of the Japanese government relates to the establishment of the concept of smart cities. In April 2021, the Cabinet released the "Smart City Guidebook,"[69] which explains the need for smart cities and the process of development to support smart city efforts. Notably, the Guidebook specifies "three philosophies" and "five principles" of smart cities.[70] The three philosophies are: (1) resident-centric, (2) based on visions/challenges, and (3) collaboration among sections/cities.[71] The first, "resident-centric" framing, actually aligns with the Western smart

[64] See Masaru Yarime and Martin Karlsson, "Examining the Technological Innovation Systems of Smart Cities: The Case of Japan and Implications for Public Policy and Institutional Design" in Jorge Niosi (ed), *Innovation Systems, Policy and Management* (CUP 2018) 398–399; Thomas Feldhoff, "Low Carbon Communities, Energy Policy and Energy Democracy in Japan" in Federico Caprotti and Li Yu (eds), *Sustainable Cities in Asia* (Routledge 2018) 238–239.

[65] The Cabinet Office, Japan, *The Sixth Science, Technology, and Innovation Basic Plan* [The Sixth Basic Plan] (March 2021), www8.cao.go.jp/cstp/kihonkeikaku/6honbun.pdf (in Japanese), accessed June 12, 2024.

[66] Ibid 38–41.

[67] The Cabinet Office, Japan, *The Fifth Science and Technology Basic Plan* (January 2016) 10, www8.cao.go.jp/cstp/kihonkeikaku/5honbun.pdf (in Japanese), accessed June 12, 2024.

[68] The Sixth Basic Plan (n 65) 41.

[69] The Cabinet Office et al, *The Smart-City Guidebook*, Ver. 1.01 (April 2021), www8.cao.go.jp/cstp/society5_0/smartcity/01_scguide_eng_1.pdf, accessed June 12, 2024.

[70] Ibid 9, 13–14.

[71] Ibid 13.

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city debate on a "citizen-centric" or "people-centric" approach. According to the Guidebook, the "resident-centric" concept is aimed at "'[improving] well-being' and [taking] a demand side driven approach, in which residents, i.e. primary users, take initiatives, instead of a supply side driven one, in which governments and private companies take initiatives."[72] The "five principles" identified by the Guidebook are explained below in the context of the third instance of the Japanese government's involvement.

Third, the Japanese government has attempted to link smart city policies with data governance concerns, calling for global attention to smart city initiatives from a "data governance" perspective. Smart cities first became an international topic at the G20 Osaka Summit in 2019. Thereafter, the "G20 Global Smart Cities Alliance" was established with the World Economic Forum.[73] In 2020, the Alliance established five principles for smart cities: (1) equity, inclusivity, and social impact; (2) security and resilience; (3) privacy and transparency; (4) openness and interoperability; and (5) operational and financial sustainability.[74] The Japanese government has transferred and adopted these five smart city principles into the 2021 Smart City Guidebook,[75] which illustrates its attempt to align the national smart city policy with global data governance discussions.

B. *Exporting Smart Solutions to ASEAN*

The Japanese government has provided several routes to support the export of smart city technologies and infrastructure to Asia. Four governmental organizations are involved: the Ministry of Land, Infrastructure, Transport, and Tourism (MLIT), METI,[76] the

[72] Ibid. For a case study of the resident-centric approach in Japan, see Zhijian Wang, "Road to Human-Centric Smart City Governance in Japan: The Case of Fujisawa Sustainable Smart Town" (2024) 15(S6) Global Policy 84.

[73] World Economic Forum, *News Releases: World Economic Forum to Lead G20 Smart Cities Alliance on Technology Governance* (June 27, 2019), www.weforum.org/press/2019/06/world-economic-forum-to-lead-g20-smart-cities-alliance-on-technology-governance, accessed June 12, 2024.

[74] The Centre for the Fourth Industrial Revolution Japan, "Making Rules with World Cities: Smart City Policy Roadmap" (February 1, 2021), https://note.com/c4irj/n/nadf562eb2ff4 (in Japanese), accessed June 12, 2024.

[75] *The Smart-City Guidebook* (n 69) 14.

[76] While the METI does not have a particular program to support overseas smart city projects, smart city projects are covered under the program of "Feasibility Study Project for Overseas Deployment of High-Quality Infrastructure." As one example of such a feasibility study under the METI program, Marubeni corporation conducted a "Feasibility Study for the Implementation of Metaverse Service for Overseas Smart City Development" in Ho Chi Minh City, Vietnam. *Marubeni Corporation, News Release* (January 19, 2023), www.marubeni.com/en/news/2023/release/00007.html, accessed June 12, 2024.

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Ministry of Environment,[77] and the Japan International Cooperation Agency (JICA).[78] Among these, the most active actors are JICA and MLIT.

JICA is a well-known Japanese institution that offers capacity building and training for foreign local governments via official development assistance (ODA) to support foreign developing countries bilaterally.[79] JICA has been engaged in Asian smart city projects for several years,[80] including famous cases in Bangkok and Jakarta. Additionally, JICA assists small cities such as Siem Reap in Cambodia. Siem Reap has an iconic temple, Angkor Wat, that has been identified as a world heritage site, and tourism has been growing as its main industry.[81] The city needed infrastructure and utilities to cope with an increasing number of tourists from abroad and handle rapid urbanization; therefore, the city sought smart solutions.[82]

As in the Siem Reap case, JICA's smart city assistance is not only about providing technology. The city needed smart city policies, institutions, human workforce, and skills. Thus, JICA focused on the "establishment and human resource development of smart city promotion organization" and the "establishment of institutional framework … for smart city" by dispatching Japanese experts to foreign local governments.[83]

MLIT is a central actor in the Japanese government that has actively engaged with ASEAN, particularly, the ASCN.[84] Since 2019, MLIT has hosted the annual ASEAN–Japan Smart Cities Network High-Level Meeting. The first meeting was held in Yokohama, Japan, and according to the summary of meeting, the "Japan Association for Smart Cities in ASEAN (JASCA) was established as a framework to facilitate cooperation between ASEAN and Japan, and is composed of potential

[77] While the Ministry of Environment's "City-to-City Collaboration for Zero-Carbon Society" program (since 2013) is not directly related to smart cities, the smart city development projects comprise a major part of the program. See, e.g., the Ministry of Environment, *City-to-City Collaboration for Zero-Carbon Society* 2020, www.env.go.jp/earth/coop/lowcarbon-asia/english/project/data/jcm_pamphlet_C2C_2020_EN.pdf, accessed June 12, 2024.

[78] For the JICA's smart city cooperation with Asia, see JICA Magazine, Smart Cities for A Brighter Future, No. 2 (October 2021), https://jicamagazine.jica.go.jp/en/cms/wp-content/uploads/2021/08/2110en.pdf, accessed June 12, 2024.

[79] JICA, "What We Do" "Types of Assistance," www.jica.go.jp/english/activities/, accessed June 12, 2024.

[80] See Marco Zappa, "Smart Energy for the World: The Rise of Technonationalist Discourse in Japan in the Late 2000s" (2020) 51(1–2) IQAS 193.

[81] See Ministry of Foreign Affairs, Singapore (2018) *ASEAN Smart Cities Network* 50 ("Siem Reap is looking at a Smart Tourist Management System to assist in handling the increasing number of tourists who visit the city and affect local residents' amenity."), www.clc.gov.sg/docs/default-source/books/book-asean-smart-cities-network.pdf, accessed June 12, 2024.

[82] For the JICA's smart city cooperation with Siem Reap, www.jica.go.jp/Resource/project/cambodia/036/outline/index.html (in Japanese), accessed June 12, 2024.

[83] JICA, *Smart City Approach: Towards Sustainable Urban Management*, www.jica.go.jp/activities/issues/urban/ku57pq000019fbsv-att/smartcity_01_en.pdf, accessed June 12, 2024.

[84] See (n 57).

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Japanese partners, both public and private, from various fields."[85] More specifically, JASCA's web page explains its role that "[JASCA] will proactively and continuously disseminate information on the technologies and experiences that promote Japan's smart cities in ASEAN."[86]

At the second high-level meeting held in December 2020, the MLIT proposed "Smart City Supported by Japan–ASEAN Mutual Partnership" (Smart JAMP), which is an overseas smart city assistance program.[87] Smart JAMP consists of four measures: (1) assisting new project formations, (2) offering financial support, (3) strengthening the relationship between ASEAN members and Japanese firms, and (4) sharing information.[88] Among these, MLIT particularly supports the first measure, engaging with ASEAN countries and cities to form new smart city projects. When MLIT requested proposals from ASEAN countries and cities, thirty-two proposals were raised and nineteen were adopted.[89]

Further, MLIT suggested ASEAN develop the "ASEAN Smart City Planning Guidebook," which was released in March 2022 and aims "to provide practical insights including frameworks and examples, to support stakeholders involved in smart city development in ASEAN."[90] This Guidebook is actually based on Japan's national "2021 Smart City Guidebook" (as explained above).

V DISCUSSION – HOW TO SHAPE THE CONCEPT OF SMART CITIES IN ASIA

Japan's intention seems to be to diffuse smart city ideas and norms into ASEAN. As seen above, MLIT has been supporting project developments in ASEAN; at the same time, it suggested creating the "ASEAN Smart City Planning Guidebook," which was a "transplant" of Japan's Guidebook version. As noted, Japan's Guidebook includes "three philosophies" (including the resident-centric view) and "five principles" (including data governance guidelines) for smart cities.

How has ASEAN responded? It has officially stated that the ASEAN Smart City Planning Guidebook is "[p]repared by [the] Ministry of Land, Infrastructure, Transport and Tourism (MLIT) in Japan [i]n Consultation with the ASEAN

[85] MLIT, Summary Record of ASEAN-Japan Smart Cities Network High-Level Meeting, para 6, www.mlit.go.jp/report/press/content/001313066.pdf, accessed June 12, 2024.
[86] JASCA, www.jasca2021.jp/, accessed June 12, 2024.
[87] JASCA, Smart JAMP, www.jasca2021.jp/cooperative/#smartjamp, accessed June 12, 2024.
[88] JASCA, Smart JAMP in detail, www.jasca2021.jp/pdf/SmartJAMP_en.pdf, accessed June 12, 2024.
[89] MLIT, The Adopted Smart JAMP Proposals, www.mlit.go.jp/kokusai/content/001408266.pdf (in Japanese), accessed June 12, 2024.
[90] ASEAN Smart Cities Network, *ASEAN Smart City Planning Guidebook* (March 2022) 5, https://asean.org/wp-content/uploads/2022/06/ASEAN_SmartCityPlanningGuidebook_en_WEBSITE.pdf, accessed June 12, 2024. See also JASCA, *ASEAN Smart City Planning Guidebook* (March 2022), www.jasca2021.jp/cooperative/, accessed June 12, 2024.

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Smart Cities Network (ASCN) and the ASEAN Secretariat."[91] Hence, it appears that ASEAN has accepted the Japanese guidebook to some degree but nonetheless retains the Japanese origin for the guidebook. In other words, there seems to be some level of caution in ASEAN's approach rather than the wholesale incorporation of the Japanese guidebook into its own normative framework.

While the process is not seamless and there are important nation-of-origin distinctions in branding the regulatory and normative bases for Asian smart cities, the diffusion of smart city ideas and norms may eventually lead to the export of Japanese legal infrastructures, which may provoke regulatory competition in Asia. For Japan's MLIT, there are potential regulatory competitors: South Korea and China.[92]

First, there is South Korea's Ministry of Land, Infrastructure and Transport (MOLIT), which has been hosting the "K-City Network Global Cooperation Program," "a new platform and G2G cooperation program for overseas smart city development and export of K-smart city model."[93] Under this program, twelve smart city projects were adopted in 2020 and eleven in 2021,[94] with nine in ASEAN countries. However, as MOLIT's program also focuses on global projects beyond Asia, the extent to which Japan and South Korea are in regulatory competition to export their own smart city models to ASEAN may be unclear.

China is another possible rival. As noted previously, Chinese big-tech corporations such as Huawei have been engaging in Asian smart city projects. Chinese companies' technologies and systems can spread through overseas smart city projects along the "Digital Silk Road" under China's "Belt and Road Initiative."[95] Moreover, the Chinese government is engaged in the ASCN. In 2019, China and ASEAN released the "ASEAN–China Leaders' Statement on Smart City Cooperation Initiative."[96]

[91] See the title page of ASEAN Smart Cities Network (n 90).

[92] Singapore historically actively exported "the Singapore model of urban development." See Orlando Woods and Lily Kong, "Mobile Cities, Modelling Policies: Importing/Exporting the Singapore 'Model' of Development" in John Rennie Short (ed), *A Research Agenda for Cities* (Edward Elgar Publishing 2017) 206–217. However, currently, Singapore is not regarded as a major country exporting smart cities in Asia.

[93] MOLIT, "Launching of 'K-City Network Global Cooperation Program'" (February 13, 2020), https://overseas.mofa.go.kr/viewer/skin/doc.html?fn=20200214053956512.docx&rs=/viewer/result/202304, accessed June 12, 2024.

[94] For the 2020 results, MOLIT News (April 20, 2020), www.molit.go.kr/english/USR/BORD0201/m_28286/DTL.jsp?id=eng0301&cate=&mode=view&idx=29377&key=&search=&search_regdate_s=&search_regdate_e=&order=&desc=asc&srch_prc_stts=&item_num=0&search_dept_id=&search_dept_nm=&srch_usr_nm=N&srch_usr_titl=N&srch_usr_ctnt=N&srch_mng_nm=N&old_dept_nm=&search_section=&source=&search1=&lcmspage=1, accessed June 12, 2024; for the 2021 results, MOLIT News (June 25, 2021), www.molit.go.kr/english/USR/BORD0201/m_28286/DTL.jsp?id=eng0301&cate=&mode=view&idx=2979, accessed June 12, 2024.

[95] See the literature cited (n 44).

[96] ASEAN-China Leaders' Statement on Smart City Cooperation Initiative (November 3, 2019), https://asean.org/wp-content/uploads/2019/11/Final-ASEAN-China-Leaders-Statement-on-Smart-City-Cooperation-Initiative-2.pdf, accessed June 12, 2024.

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According to the Statement, ASEAN and China agreed to "support private sector collaboration," "encourage the establishment of mutually beneficial city partnerships between ASEAN cities … and Chinese cities," and "promote … encouraging exchanges among related government departments, research institutions, enterprises, and other relevant stakeholders to promote the sharing of knowledge, technology and innovative solutions."[97]

Related to the promotion of "sharing of knowledge, technology and innovative solutions" above, one study pointed out that "China is promoting its smart city expertise through a set of training programmes provided to officials and engineers from foreign countries, particularly developing ones."[98] Indeed, the same study argues, "China is not only training foreign officials on the technical dimension of smart cities (infrastructure, maintenance, etc.) but also, increasingly, on how the government can use this expertise for specific social, political or security purposes."[99]

The COVID-19 pandemic increased opportunities for China to export its own smart city model because the pandemic has expanded and added a new function to smart city development: the need for an urgent response to public health emergencies. Smart city technologies can promote "remote work, online or distance learning, digital and contactless payments, telehealth, online shopping and drone or robot delivery" during health emergencies.[100] Moreover, smart technologies for surveillance and monitoring, which can track people's location and movement, have been useful for managing public safety during pandemics. As another study highlighted, "[t]he public sector has regained unexpected power and trust"[101] in using smart surveillance and monitoring technologies during the pandemic, and "[s]mart-city development will be boosted following COVID-19."[102] At this point, China may successfully export its own smart city model, which is useful for responding to public health emergencies and thus has great appeal for other governments.[103]

As noted, China has been extensively engaged in training foreign officials in smart city governance. This differs from what Japan's MLIT and South Korea's MOLIT

[97] Ibid paras 4, 6, 8.
[98] Ekman and Picardo (n 50) 5.
[99] Ibid.
[100] UN-Habitat (n 20) xxx. The literature on smart city development during and after the COVID-19 pandemic is vast. See, e.g., Orlando Troisi et al, "Covid-19 Sentiments in Smart Cities: The Role of Technology Anxiety before and during the Pandemic" (2022) 126 Computers in Human Behavior 106986; Daniel G Costa and João Paulo J Peixoto, "COVID-19 Pandemic: A Review of Smart Cities Initiatives to Face New Outbreaks" (2020) 2(2) IET Smart Cities 64; Jung Won Sonn, Myounggu Kang and Yeol Choi, "Smart City Technologies for Pandemic Control without Lockdown" (2020) 24(2) Int J Urban Sci 149.
[101] Klaus R Kunzmann, "Smart City after Covid-19: Ten Narratives" (2020) 56(2) disP – The Planning Review 20, 22.
[102] Ibid 27.
[103] Ekman and Picardo (n 50) 5.

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have been doing for smart city cooperation, mainly assisting overseas smart city project formation. As noted, for Japan, capacity building and training for foreign local governments are within the scope of JICA, which uses ODA to support foreign developing countries bilaterally. JICA's engagement with foreign local governments is possible only after JICA receives official requests for support from foreign (local) governments. Generally, just as "traditional donors have diffused principles, political structures, state reform, and economic adjustment programmes to recipient countries via Official Development Aid,"[104] JICA can also attempt to diffuse Japanese urban development models through smart city cooperation. However, JICA's smart city support may be insufficient to compete with the extensive capacity building offered by China.[105]

Simultaneously, the Chinese government's engagement and big-tech company projects will certainly raise security and privacy concerns regarding smart city development. Arranging the regulatory framework for data governance, including security and privacy issues, is a significant challenge, particularly in Asian smart cities.[106] In terms of concerns over privacy, China's approach differs from that of Japan – Japan can differentiate its overseas smart city projects from China's projects in light of privacy and security concerns.

VI CONCLUSION

This chapter has examined Japan's shaping of the ideas and norms of smart cities in Asian countries, particularly in relation to ASEAN in the context of inter-regional competition. Several methods exist for exporting smart solutions by Japanese governmental organizations, including development cooperation, diffusion of ideas, and regulatory competition. While interactions do not yet entail the export and adoptions of specific Japanese legal infrastructures, the MLIT and JICA are attempting to diffuse the norms, ideas, and governance models of smart cities through cooperation with ASEAN. Japan attempts to shape the idea of smart cities as it seeks to strengthen cooperation with ASEAN countries and highlight

[104] Rubens de S Duarte and Carlos R S Milani, "Southern States in International Development Cooperation: From Contestation to Norm Conception," (2021) 14 Chin J Int Politics 506, 508 (citing Carol Lancaster, *Foreign Aid: Diplomacy, Development, Domestic Politics* (University of Chicago Press 2007) 288; Emma Mawdsley, *From Recipients to Donors: Emerging Powers and the Changing Development Landscape* (Zed Books 2012) 270).

[105] I am grateful to Matthew S Erie for the discussion about China's extensive scale of engagement.

[106] See B Courtney Doagoo, "Smart Cities in Asia: An Introductory Note" in Thanh Phan and Daniela Damian (eds), *Smart Cities in Asia: Regulations, Problems, and Development* (Springer 2022) 9. Data governance is an increasingly common concern among smart cities around the world. For a case of Brazil, see Jhessica Reia and Luã Fergus Cruz, "Seeing Through the Smart City Narrative: Data Governance, Power Relations, and Regulatory Challenges in Brazil" in Blayne Haggart et al (eds), *Power and Authority in Internet Governance: Return of the State?* (Routledge 2021) 219.

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advantages over rival countries (i.e., China). More precisely, Japan wants to take the lead in exporting the smart city model associated with the "citizen-centric" approach and the importance of privacy and data protection.[107]

What are the consequences of these interactions? It takes time to observe the effects and consequences of any interaction; in the case of smart cities, implementation takes a decade.[108] Each smart city project encompasses various development pathways; there is no smart city in Asia yet that includes a comprehensive smart "system" achieving all three levels (as illustrated in Section II.A).[109] It remains to be seen how the interactions between Japan and ASEAN will lead to the creation of the Asian smart city model. For future research on IAL of smart cities, it is necessary to look at interactions involving other key actors (i.e., Singapore, South Korea, and China)[110] and examine how the dynamism of interactions affects cooperation, diffusion, and competition in shaping the idea of smart cities in Asia.

[107] For the growing focus on citizen participation in Asia, see, e.g., Bipashyee Ghosh et al, "Smart as (Un)democratic? The Making of a Smart City Imaginary in Kolkata, India" (2022) 40(1) Environ Plann C: Politics Space 318–339.

[108] For the difficulties of implementing smart city projects, Kong and Woods (n 61) 5.

[109] This point is recognized not only in the context of Asia; the smart city literature has also noted in other regions that, far from taking a holistic approach, past smart city initiatives tended to choose only one or two sectors. See, e.g., Tooran Alizadeh, "An Investigation of IBM's Smarter Cities Challenge: What Do Participating Cities Want?" (2017) 63 Cities 70–80.

[110] See, e.g., Si-Ying Tan, Araz Taeihagh and Kritika Sha, "How Transboundary Learning Occurs: Case Study of the ASEAN Smart Cities Network (ASCN)" (2021) 13(11) Sustainability 6502.

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