

PAVED WITH GOOD INTENTIONS? URBAN PLANNING AND SMART CITY POLICIES IN SOUTH KOREA AND JAPAN

*Alex Arend**

Over half the world's population live in cities, and with the growing importance of technology in urban space, securing residents' human rights in the digital space is becoming more important than ever. Urban planning is often informed by national goals and ideologies, but in the grandiose visions and sweeping dreams of creating an idealized urban future, it is easy to lose the basic essence of the city—its people.

The rise of smart cities has highlighted the difficulties of maintaining and eschewing a degree of privacy for the public good. This Comment examines the successes and pitfalls of smart city development in Japan and South Korea. As two powerhouse global economies in East Asia, their example is more crucial than ever with the growing proliferation of smart city initiatives throughout Southeast Asia, South Asia, and the world. While privacy laws have been making improvements over the past decade, I argue that stronger policy initiatives must be taken to ensure that the continued development of smart cities is inclusive and truly people-centered.

* J.D. Candidate, Temple University Beasley School of Law, 2024; B.A., Political Science and East Asian Studies, McGill University, 2018. Sincerest thanks to Professor Salil Mehra for your guidance in shaping this comment, as well as to the TICLJ team for your hard work. Thank you to my partner for being my rock throughout law school and a constant ray of light in the darkness. And to my parents, thank you for your unconditional love and support, and for always encouraging me to follow my dreams.

TABLE OF CONTENTS

I. INTRODUCTION.....	2
II. THE SMART CITY: RISKS AND REWARDS	5
A. <i>Smart Cities, Briefly</i>	5
B. <i>Surveillance Capitalism and Panoptic Dreams</i>	7
III. SOUTH KOREA	14
A. <i>Evolution of South Korean Urban Planning and Smart City Policy</i>	14
B. <i>The Digitized Developmental State</i>	19
IV. JAPAN	25
A. <i>“Customer is God”: A Japanese Approach to Smart Cities</i>	25
B. <i>Taming Nature: Using Smart Cities to Cure Society</i>	28
V. DIGITAL RIGHTS IN THE DIGITAL CITY	33
A. <i>Human-Centered Smart Cities: Combining the Digital and the Human</i>	33
B. <i>Looking Towards the Future: What Makes a Human Centered Smart City?</i>	34
VI. CONCLUSION	38

I. INTRODUCTION

In the Early Renaissance—over a century after the Plague had ravaged Europe—Leonardo da Vinci sought to improve upon overcrowded and uninspired medieval cities¹ by designing an ideal urban space that could safeguard humanity from future catastrophe.² He drafted a plan for a modern and rational compact city³ blended with nature and featuring a multi-level design connected by flights of stairs and pedestrian walkways—complete with an efficient service and transport infrastructure.⁴ Leonardo da Vinci’s designs of a space-maximizing city featuring high-rises and tiered construction served as a prelude to twentieth-century high modernism.⁵

In a similarly grandiose fashion, patrons of high modernism turned to rational

1. See Alessandro Melis & Claire Coulter, *The da Vinci Flow*, TOPOS (June 5, 2019), <https://toposmagazine.com/da-vinci-idealcity> (stating how Leonardo da Vinci aimed to improve medieval city design by shifting to more modern and clean design).

2. See Alessandro Melis, *This is Leonardo da Vinci’s Design for a ‘Smart City’ That Was Centuries Ahead of its Time*, WORLD ECON. F. (May 15, 2019), <https://www.weforum.org/agenda/2019/05/leonardo-da-vinci-designed-an-ideal-city-that-was-centuries-ahead-of-its-time> (discussing how Leonardo da Vinci’s turn towards urban planning was informed by the Plague’s profound effect on Italy in late 1400s).

3. A “compact city” is one that is built upward, rather than outward. *Id.*

4. See *id.* (asserting today’s high-rise buildings reflect Leonardo da Vinci’s vision of cities built on several levels linked with vertical staircases).

5. See Melis & Coulter, *supra* note 1 (describing how concept of high-rise buildings and towers for convenience and beauty were unconventional during Leonardo da Vinci’s time).

engineering of social life as a means to improve the human condition.⁶ High modernism centers around a strong belief in using scientific and technological advances to structure the social order and enhance human satisfaction.⁷ The high modernist city is centralized, hierarchical, and ordered, packaged into a sanitized, neutral space that purposely rejects any hint of vernacular aesthetics or local history.⁸ Contrary to Leonardo da Vinci's reverence of nature,⁹ high modernism encouraged mastery over—not cooperation with—nature,¹⁰ and embodied strong authoritarian and technocratic overtones.¹¹ High modernism was intended to be prescribed by the state¹² and governed by a learned elite.¹³ Even Leonardo da Vinci's rational city was susceptible to these same risks. The tiers of his compact city featured luxurious palaces and wide, upper-echelon promenades, while restricting merchants, service, and industry on the lower levels, obscured from sight¹⁴—a clear example of socio-physical stratification.¹⁵

Urban planning as a tool and discipline has existed for millennia.¹⁶ Throughout history, the planned urban space has transformed and molded to society's prevailing norms, principles, and goals.¹⁷ Today, over half of the world's population resides in urban areas.¹⁸ The United Nations recognizes the importance of urban development in their 2020 Sustainable Development Goals, which emphasize developing more efficient and safer infrastructure, increasing environmental policy implementation

6. JAMES C. SCOTT, *SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED* 88 (1998).

7. *See id.* at 89–90 (discussing high modernism as utilitarian elevation of technical and scientific progress applicable to every area of human life and activity).

8. *See id.* at 104–06 (describing design approach of architect Charles-Édouard Jeanneret (also known as Le Corbusier) as rejecting urban culture or aesthetic and embracing neutral extravagance). Le Corbusier was one of the most influential figures in high modernism. *Id.*

9. *See Melis, supra* note 2 (discussing how Leonardo da Vinci's use of nature-inspired design choices influenced the creation of essential principles of modern urban planning).

10. *See SCOTT, supra* note 6, at 89–90 (describing how perceived linear progression of scientific understanding would enable control over nature).

11. *See id.* at 88–89 (listing use of science-based ideologies as means to achieve administrative order and unrestrained exertion of state power as key elements of high modernism).

12. *Id.* at 90.

13. *See id.* at 94 (discussing how high modernist obsession with social order necessitated view that only people with scientific knowledge to understand social order could rule it).

14. *See Melis & Coulter, supra* note 1 (describing city design based on different physical levels with restrictions on what and who would occupy which levels).

15. *See Melis, supra* note 2 (suggesting cities with different levels create risks of greater inequalities developing among residents).

16. *See, e.g.,* Margarete Van Ess, *Uruk: The World's First City*, in *CITIES THAT SHAPED THE ANCIENT WORLD* 15, 15 (John Julius Norwich ed., 2009) (praising ancient Mesopotamian metropolis Uruk for its brilliantly organized urban administration).

17. *See, e.g.,* Xu Huang & Jan van Weesep, *Cultural Values and Urban Planning in China: Evidence of Constraints and Agency in the Development of the Historic City of Yangzhou*, 47 *J. URB. HIST.* 157, 158 (2021) (discussing historical influences of cultural trends and changes on Chinese urban spaces).

18. *See Urban Development*, THE WORLD BANK, <https://www.worldbank.org/en/topic/urbandevelopment/overview> (last updated Apr. 3, 2023) (stating 56% of global population lives in urban areas).

and enforcement, and implementing disaster risk reduction strategies.¹⁹

The pursuit of what is rational is ever-present in law, policy, and urban planning. Leaders and policymakers are always searching for the *rational* solution to their current societal ailments; history proves that urban planning is a valuable process in this pursuit.²⁰ In East Asia, strong government involvement is usually present in all urban development projects and has historically played a heavy role in economic and industrial development policies through state-led development efforts.²¹ Top-down manipulation of the urban space has served as an important means of achieving these goals.²²

Furthermore, land is intrinsically connected to community, and as a result, national histories and identities are the main drivers of spatial planning policies.²³ The substance of these policies, however, is informed by national objectives and priorities. Today, the overwhelming global consensus on priorities among governments is an increased focus on the digitization of their nations—both in terms of their physical spaces and cyberspaces—through the use of ubiquitous technology.²⁴ While ubiquitous technology has the potential to optimize the urban space in countless ways, it also presents increasing human rights concerns, such as widening the socioeconomic divide, hindering accessibility, and infringing the right to privacy.²⁵ With the rapid digitization of cities, it is imperative that states and municipalities consider new legal mechanisms that aim to protect residents from these potential harms. This Comment examines urban planning policies in South Korea and Japan and how their respective national governments utilize regeneration and master-planning techniques to shape the urban space in pursuit of their objectives. Both countries are global technological leaders and promote a digitized urban planning agenda, but without the proper frameworks, these projects expose citizens to potential human rights risks.

19. See UNITED NATIONS, THE SUSTAINABLE DEVELOPMENT GOALS REPORT 2022 48–49 (2022), <https://unstats.un.org/sdgs/report/2022> (referencing Goal Eleven on sustainable cities and communities).

20. See Simon Elias Bibri, *The Core Academic and Scientific Disciplines Underlying Data-Driven Smart Sustainable Urbanism: An Interdisciplinary and Transdisciplinary Framework*, 1 COMPUTATIONAL URB. SCI., 2021, at 1, 6–7 (discussing role of governments in urban planning policies in determining effective approaches towards goals such as sustainability, public design, and functionality).

21. See Yu-Min Joo & Teck-Boon Tan, *Smart Cities in Asia: An Introduction*, in SMART CITIES IN ASIA: GOVERNING DEVELOP. IN THE ERA OF HYPER-CONNECTIVITY 1, 6 (Yu-Min Joo & Teck-Boon Tan eds., 2020) (suggesting that current state-led smart city and urban development initiatives indicate a lingering developmentalist legacy).

22. See *id.* (describing how national governments in Asia are often main actors in smart city development).

23. See, e.g., Huang & Van Weesep, *supra* note 17, at 159 (discussing how Chinese cities developed spatially and architecturally with changes in political and social ideologies, namely Imperial China through Socialist era).

24. See Yin Chuantao et al., *A Literature Survey on Smart Cities*, 58 SCI. CHINA INFO. SCIS., Oct. 2015, at 1, 2 (illustrating how numerous countries and cities have been turning to digitization and smart city projects to solve urban issues).

25. See *infra* Part II.B for a discussion on the downsides of ubiquitous technology in the smart city context.

Part II of this Comment provides an overview on the general theory and dialogue surrounding smart cities, including their associated benefits and risks. Part III explores South Korea's rise to technological dominance through their rapid development and the ideological shifts over the decades that inform their "growth-at-all-costs" economic policies—as well as the urban and human consequences of this philosophy. Part IV discusses Japan's recent economic and developmental policy shifts towards sustainable, resilient, and equitable cities in response to national crises, such as the 2011 Tōhoku Earthquake and their rapidly aging population, and how planning policies attempt to balance the interests of the government, developers, and citizens. Finally, Part V looks at the ideas and issues presented by the two countries' approaches with a special focus on the issues presented in Part II. Part V also analyzes the intersections between the digital and the human, identifying the potential human rights risks that can arise from ubiquitous infrastructure, governance, and social risks, and concludes with an exploration of how people-centered smart cities can be the solution.

II. THE SMART CITY: RISKS AND REWARDS

A. *Smart Cities, Briefly*

Smart cities embed technological elements, such as Information and Communications Technology (ICT), the Internet of Things, big data, and cloud computing, into the physical, social, and economic space to create a city that is more efficient, sustainable, and intelligent.²⁶ By their proponents, these cities are seen as a solution to society's most urgent threats and a tool for various government initiatives, ranging from ensuring economic development and social equity to optimizing infrastructural resilience, pollution mitigation, and energy efficiency.²⁷

The term "smart city" first appeared in the 1990s, a time when massive technological breakthroughs, particularly in ICT, began to inspire the utilization of these emerging technologies in urbanization.²⁸ The Organization for Economic Co-operation and Development (OECD) defines smart cities as "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."²⁹ However, this definition is not universal and is still subject to debate,³⁰ likely in part because smart cities have

26. See Yin, *supra* note 24, at 2 (discussing various definitions of "smart city" with most emphasizing role of technologies, efficiency, and smart governance).

27. See Bibri, *supra* note 20, at 2 (discussing various solutions and benefits presented by sustainable cities, smart cities, and advanced ICT).

28. See Yin, *supra* note 24, at 2 (discussing origins of smart cities in early 1990s through increased emphasis of technology, innovation, and globalization in urbanization processes).

29. ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, SMART CITIES AND INCLUSIVE GROWTH 8 (2020), https://www.oecd.org/cfe/cities/OECD_Policy_Paper_Smart_Cities_and_Inclusive_Growth.pdf.

30. See Hannah Rebentisch et al., *Unicorn Planning: Lessons from the Rise and Fall of an American 'Smart' Mega-Development*, 101 CITIES, June 2020, at 1, 1 (explaining that different interpretations and applications of smart urbanism are linked to local political economies which

conceptually come to encompass a wide range of initiatives and goals beyond technological integration.³¹ Smart cities have come to adopt characteristics from other urban paradigms, such as the “eco,” “compact,” and “people-centered” city.³²

Despite its glittering promises and techno-optimism, some criticisms of the smart city movement echo those of the high modernism, pointing to the autocratic undertones of such top-down planning mechanisms.³³ New cities today often feature strong ties between the public and private sectors, creating an environment that enables clientelism³⁴ and reduces democratic participation and transparency³⁵—all while remaining hidden behind a curtain of tech-driven, “green” urbanism.³⁶ In fact, the British Empire used master-planned cities as a frequent tool in the colonial world as a means to modernize the local communities and solve their urban maladies,³⁷ as well as to assert control in a grandiose, “muscular” fashion that sought to normalize power inequities.³⁸ Today, new master-planned constructions are highly top-down creations, often built with strong economic goals in mind, serving as hubs for attracting foreign direct investment and developers.³⁹

The need for specialized expertise in and easy access to cutting-edge technologies for the construction of smart cities led to an increased role of private actors, particularly corporations, in their development.⁴⁰ Thus, the colonial dynamic is now mirrored by corporate entities and technological experts, who market their

renders the term “smart city” difficult to definitively define).

31. See Bibri, *supra* note 20, at 3 (stating how different urban paradigms have been integrated into smart and sustainable urban development plans); see also B. Courtney Doagoo, *Smart Cities in Asia: An Introductory Note*, in SMART CITIES IN ASIA: REGULATIONS, PROBLEMS, AND DEVELOPMENT 11, 12 (Daniela Damian & Thanh Phan eds., 2022) (discussing various paradigms under which smart cities have been qualified).

32. See Bibri, *supra* note 20, at 8 (describing how United Nations and world-wide cities worldwide enacted elements of sustainable urbanism); see also Doagoo, *supra* note 31, at 12 (Daniela Damian & Thanh Phan eds., 2022) (describing core factors of smart cities).

33. See Sarah Moser & Laurence Côté-Roy, *New Cities: Power, Profit, and Prestige*, 15 GEOGRAPHY COMPASS, 2020, at 1, 2 (comparing state-led top-down planning and “muscular monumentalism” of new master-planned cities to high modernist cities, despite increasingly different approaches to financing and development).

34. See *id.* at 3 (discussing how authoritarian planning methods and complex private-public partnership models make new cities highly clientelistic).

35. See, e.g., *id.*, at 6 (discussing how private nature of new city developments reduce opportunities for democratic participation).

36. See *id.* at 4 (detailing how promises of green and smart urbanism in promotional materials greatly differ from realities of these cities).

37. See Sarah Moser, *New Cities: Old Wine in New Bottles?*, 5 DIALOGUES IN HUM. GEOGRAPHY 31, 32 (2015) (describing how the British created new colonial cities to promote Western notions of civilization).

38. See *id.* at 33 (stating that muscular monumentalism of colonial era sought to portray and normalize uneven power relations).

39. See Moser & Côté-Roy, *supra* note 33, at 5 (describing urbanization of new city projects as business model where governments aim to attract FDI and capitalize off urban growth and development).

40. See Rebutisch et al., *supra* note 30, at 4 (attributing rise of private actor roles in smart city development in part to lack of knowledge and expertise by public sectors and increased efficiency of outsourcing development).

visions of a glimmering, sleek city to governments.⁴¹ While corporations are using these testbed urban spaces as “living laboratories” for their products,⁴² the urban environment simultaneously promotes a system that positions citizens as the product themselves.⁴³ The modern ubiquity of technology and high-tech infrastructure led to an urban space both crafted and controlled by corporate and state interests, where surveillance has become a common reality in everyday life.⁴⁴ These processes raise important criticisms and conversations about privacy rights, both in terms of personal data and physical security, in a world where technology is becoming embedded into every facet of our lives.⁴⁵ Visions of utopia can silently devolve into “authoritarian high modernism,” where the state exercises its control at the expense of democratic institutions and civil rights.⁴⁶ French philosopher Michel Foucault contemplated this prospect in his 1975 book *Discipline and Punish*, writing that the “utopia of the perfectly governed city” was, at its core, the exercise of disciplinary power over the individual bodies, via “hierarchy, surveillance, observation, [and] writing.”⁴⁷ Thus, as the line blurs between digital utopia and Foucauldian dystopia, today’s smart cities may begin to echo regimes of the past as a new techno-rationalist high modernism.

B. Surveillance Capitalism and Panoptic Dreams

Some of the most controversial issues that surround smart city discourse concern privacy and surveillance culture. The ubiquity of technology in the smart city applies not only to public services and spaces but also to private spaces such as within smart homes.⁴⁸ If the smart city is defined by its total connectivity and convenience fueled by data, do these features turn off after crossing the threshold of the front door? In a fully-digitized environment, where does data end and the body begin—and where do residents maintain their autonomy and privacy? Today, the proliferation of smartphones, mobile apps, and social media makes privacy

41. See Moser, *supra* note 37, at 34 (comparing colonial experts to visionaries and corporate executives who plan smart city projects at governments’ direction).

42. See, e.g., Rebentisch et al., *supra* note 30, at 3 (citing Union Point in Boston, Massachusetts as example of living laboratory model, where ICT provider, General Electric, tested new technology).

43. See *infra* Part II.B for an in-depth discussion of this phenomenon in the context of surveillance capitalism.

44. See generally Rebentisch et al., *supra* note 30 (discussing private control, socioeconomic isolation, and techno-utopian laboratory experiments as consequences of smart city planning).

45. See *infra* Part II.B for an overview of criticisms surrounding ubiquitous technology in terms of citizen privacy.

46. Scott defines “authoritarian high modernism” as the state’s embracing of a high modernist confidence in science and technology as a means to societal order and efficiency, but ruling elites, who pursue this ideal in an autocratic, top-down manner at the expense of democracy and civil rights, corrupt what could be noble goals. See SCOTT, *supra* note 6, at 89.

47. MICHEL FOUCAULT, DISCIPLINE AND PUNISH: THE BIRTH OF THE PRISON 195–228 (Alan Sheridan trans., Vintage Books 2d ed., 1995) (1977).

48. See, e.g., David Belcher, *A New City, Built Upon Data, Takes Shape in South Korea*, N.Y. TIMES (Mar. 28, 2022), <https://www.nytimes.com/2022/03/28/technology/eco-delta-smart-village-busan-south-korea.html> (describing experimental smart city in South Korea where fifty-four residents are living and testing new technologies for future homes).

increasingly elusive.

The definition of “surveillance” as “close observation” of a particular subject, or “the act of carefully watching someone or something, especially in order to prevent or detect a crime,” has existed in society since antiquity.⁴⁹ Today, the term surveillance is applied more indiscriminately than its historical incarnation with the inception of mass surveillance technologies, broadening the definition from a *particular* subject to *all* subjects within its purview.⁵⁰ Despite this broadened reach, the purpose of surveillance has always been the same: promoting an orderly society by identifying behaviors and ideals that do not conform to what the surveilling body defines as acceptable.⁵¹

Data is the lifeblood of the smart city’s services, efficiencies, and conveniences,⁵² but for governments and corporations, it is an invaluable resource. In particular, this endless stream of data creates an economic enclave ripe for “surveillance capitalism”⁵³ to thrive.⁵⁴ While Professor Shoshana Zuboff argues that surveillance capitalism should not be “conflated” with technology, it nevertheless relies on technology to “express its will.”⁵⁵ The role of surveillance has arguably transformed from a tool of “government assurance” to creating a “safer and secure environment” for commercial activity.⁵⁶ Surveillance is increasingly voluntary, such as through the use of data-siphoning mobile apps and manufactured dependency on digital devices; privacy is exchanged for convenience and decision-making power.⁵⁷

49. Tjerk Timan et al., *Surveillance Theory and Its Implications for Law*, in THE OXFORD HANDBOOK OF L., REGUL., AND TECH. 731, 731 (R. Brownsword, E. Scotford & K. Yeung eds., 2017).

50. See *id.* (stating that most surveillance technologies today are applied indiscriminately and ubiquitously rather than to suspected persons).

51. See Maša Galič, *Smart Cities as “Big Brother Only to the Masses”: The Limits of Personal Privacy and Personal Surveillance*, 20 SURVEILLANCE & SOC’Y 306, 309 (2022) (discussing how “disciplinary power” relies on surveillance to survey behaviors and use collected data to influence behavior through environmental manipulation).

52. See generally Miriam Tuerk, *How Data Will Fuel Smart Cities*, FORBES (Nov. 25, 2019), <https://www.forbes.com/sites/miriamtuerk/2019/11/25/how-data-will-fuel-smart-cities/?sh=29c71d3550d4> (describing how Quayside in Toronto and Hudson Yards in New York City use smart grid technology to conserve energy and collect usage data).

53. Professor Shoshana Zuboff coined “Surveillance Capitalism,” defining it as the continuous collection of users’ “human experience,” which in turn is used to inform the company’s product which is fed back to the consumer, often marketed as “personalized” experience based on the user’s own behavioral data. See Shoshana Zuboff, *Surveillance Capitalism and the Challenge of Collective Action*, 28(I) NEW LAB. F. 10, 11–16 (2019) for a discussion on the meaning and origin of Surveillance Capitalism.

54. See, e.g., George Baca, *Eastern Surveillance, Western Malaise, and South Korea’s COVID-19 Response: Oligarchic Power in Hell Joseon*, 44 DIALECTICAL ANTHROPOLOGY 301, 305 (2020) (discussing increased use of surveillance technology and digitization of society as beneficial to surveillance capitalists who increase their influence over citizens through these channels).

55. Zuboff, *supra* note 53, at 11.

56. Law Yik Lung, *The New World [R]evolution: Surveillance Capitalism and Cities*, 3 MALAY. ARCHITECTURE J., 8, 10 (2021).

57. See *id.* at 12–13 (describing surveillance as “path to profit” that erodes citizens’ decision rights); see also Baca, *supra* note 54, at 305 (discussing increased manufactured dependency on

To some, the digital realm, and by extension, the smart city, has become “a tool for capitalism and an instrument for the totalitarian regime,”⁵⁸ where smart city technology is merely a euphemism for mass surveillance.⁵⁹ Through this perspective, the smart city is simply a palatable name for a “surveillance city” or “security city.”⁶⁰

Indeed, the vital role corporate actors often play in the development of smart cities rightfully raises questions about the use of data in smart cities. Quayside, a smart city project developed through a private-public partnership between Google’s Sidewalk Labs and the city of Toronto, Canada, faced heavy backlash due to concerns over data harvesting and privacy.⁶¹ One critic labeled the venture as a blatant example of surveillance capitalism, where Google would use “‘algorithms to nudge human behavior’ in ways to ‘favor its business.’”⁶² Another critic called Google’s approach “a colonizing experiment[.]”⁶³ Parallels to Quayside can be seen in smart cities like Songdo New Economic City (Songdo) in South Korea, where mechanisms such as the “living labs” and “city in a box” suggest the smart city first serves as a testing ground for corporate products and second as a home to residents—prioritizing profit over welfare.⁶⁴

For example, the 2019 coronavirus pandemic (COVID-19) arguably presented new avenues for private and public surveillance in the form of “biosurveillance,” creating a technocratically driven dichotomy between “state-Leviathan cybercontrol and civil liberties” driven by biometrics and biobanks.⁶⁵ With the spread of personal health data collection and biometric technologies in everyday use, the body can become the subject of surveillance in a whole new dimension.⁶⁶ This risk could be further exacerbated in smart environments without the proper protections, such as a smart home that tracks and uses personal health data.⁶⁷ While a plethora of devices on the market already collect this data, the ethics become hazier when the data collection is conducted *by* the home, which is connected via Internet of Things

technology as contributing factor in proliferation of surveillance capitalism processes).

58. Lung, *supra* note 56, at 13.

59. See Baca, *supra* note 54, at 305 (stating that extensive metadata surveillance strategies in South Korea are euphemistically referred to as “smart city technology”).

60. See David Murakami Wood, *Smart City, Surveillance City*, SOC’Y FOR COMPUTS. & L. (July 1, 2015), <https://www.scl.org/articles/3405-smart-city-surveillance-city> (placing “smart city” in category of “imperial phrases,” masking darker undertones of utopian ideals).

61. See generally Leyland Cecco, ‘Surveillance Capitalism’: Critic Urges Toronto to Abandon Smart City Project, THE GUARDIAN (June 6, 2019), <https://www.theguardian.com/cities/2019/jun/06/toronto-smart-city-google-project-privacy-concerns> (describing criticism against Quayside).

62. *Id.*

63. *Id.*

64. See *infra* notes 80–94 for a discussion on the “city in a box” and the issues surrounding it.

65. Igor Calzada, *The Right to Have Digital Rights in Smart Cities*, SUSTAINABILITY, Oct. 16, 2021, at 1–2 (explaining rise in biosurveillance during COVID-19).

66. See *id.* at 2–4 (describing advancements in security leading to lack of digital rights).

67. See Sara Gerke et al., *Regulatory, Safety, and Privacy Concerns of Home Monitoring Technologies During COVID-19*, 26 NATURE MED. 1176, 1178–81 (Aug. 2020) (noting risks associated with lack of regulatory framework for smart home surveillance).

technology to other city services, or even informs city development itself.⁶⁸

If a smart home is tracking behavioral data, the urban image evoked becomes eerily similar to the “control society” where discipline and behavior are silently manipulated and controlled by an ambient government using mass amounts of urban and personal data.⁶⁹ Behavioral data, combined with closed-circuit television (CCTV) analyzed by artificial intelligence (AI), facial recognition technology, and biometrics, not only create a rich feeding ground for surveillance capitalism but also opens the door to more sinister developments such as algorithmic profiling or predictive policing.⁷⁰ In this sense, the term “smart city” as a “security city” becomes rather appropriate.

Ubiquity has been described as the smart city’s invisible façade,⁷¹ an image similar to the silent yet omnipresent panopticon.⁷² However, the smart city is not Foucault’s traditional panopticon, but a multifaceted surveillance system that assesses risks from data and sets “acceptable ranges and optimal averages” for behavior rather than attempting to achieve absolute compliance.⁷³ These issues raise countless questions in terms of data protection and regulatory steps required to protect citizens in smart cities.⁷⁴ As Professors Atsushi Deguchi and Kaori Karasawa of the University of Tokyo write:

Technology and data alone are not enough to ensure that Society 5.0 is a happy society. Social design must emphasize the task of harmonizing freedom of behavior with behavioral regulation. Behavioral regulation must accord with human nature; otherwise, there will be no true harmony between individual and society. Respect for human dignity would be undermined if society restrains individual freedom⁷⁵

68. See Belcher, *supra* note 48 (stating how data collected in Busan’s Eco Delta Smart City will be studied to “build a smarter city”).

69. See Murakami Wood, *supra* note 60 (noting that more information could lead to governments using data to produce desired outcomes).

70. See Galič, *supra* note 51, at 308 (warning urban surveillance technologies could be used to police behavior through algorithmic profiling); see also Sasha Cadariu, “Smart Cities”: Surveillance Capitalism’s New Home?, AI TIME J., <https://www.aitimejournal.com/smart-cities-surveillance-capitalisms-new-home> (updated Sept. 6, 2022) (detailing how citizen-level surveillance and recognition technologies are serious concerns for privacy and ability to be used by governments for highly detailed individual surveillance).

71. Sofia T. Shwayri, *A Model Korean Ubiquitous Eco-City? The Politics of Making Songdo*, 20 J. URB. TECH. 39, 43 (2013).

72. See Thomas McMullan, *What Does the Panopticon Mean in the Age of Digital Surveillance?*, THE GUARDIAN (July 23, 2015, 3:00 PM), <https://www.theguardian.com/technology/2015/jul/23/panopticon-digital-surveillance-jeremy-bentham> (discussing the panopticon as a prison that oriented its cells around a central tower where guards surveil prisoners, with this concept reignited as an allegory of citizen subjugation through state-administered discipline and the internalization of constant, yet asymmetrical surveillance).

73. See Galič, *supra* note 51, at 308 (noting the logic of using security systems to affect outcomes).

74. See *id.* at 310 (arguing that regulatory frameworks and scholarship on individual privacy and surveillance are no longer sufficient within context of smart cities and mass surveillance).

75. Atsushi Deguchi & Kaori Karasawa, *Issues and Outlook, in SOCIETY 5.0: A PEOPLE-CENTRIC SUPER-SMART SOCIETY* 155, 158 (Hitachi-UTokyo Lab’y 2018), <https://link.springer.com/content/pdf/10.1007/978-981-15-2989-4.pdf?pdf=button>.

Now, in the post-COVID-19 world, it is more vital than ever that policymakers disclose how, by whom or what, why data is collected, and how it can be accessed.⁷⁶

Issues of surveillance, data governance, and “uncritical” use of AI not only present questions of privacy but also perpetuate social inequalities.⁷⁷ In an urban space that is inherently technocratic, it often becomes unclear *who* the smart city actually is for.⁷⁸ Specifically, to some, the smart city represents an erosion of democracy in favor of techno-corporate elite interests in perpetuating avenues of surveillance capitalism.⁷⁹

Master-planned smart cities, dubbed a “city in a box,” are often developed by private entities.⁸⁰ These entities focus on the city’s blueprint primarily in mind at the expense of benefiting its residents.⁸¹ The entities then sell the cities to the government after testing on domestic citizens residing in these cities.⁸² The “city in a box” can also be exported abroad to serve as a blueprint for other smart cities, as is the case with Songdo and Meixi Lake City in China.⁸³ This model highlights the entrepreneurial-centered vision of these master-planned smart cities which caters more toward attracting investors and foreign direct investment rather than maximizing the livability for their residents.⁸⁴ For example, critics point to the performance surrounding many smart and eco-city initiatives, equating them to “greenwashing” or “green capitalism.”⁸⁵

Furthermore, this export-oriented strategy is problematic for the residents of both the original and replicated cities because the needs of cities can differ dramatically between locales⁸⁶—they cannot simply be copied and pasted without

76. See Calzada, *supra* note 65, at 5–6 (citing access and openness as key features of digital rights, which are essential to citizens of smart cities).

77. See Igor Calzada et al., *People-Centered Smart Cities: An Exploratory Action Research on the Cities’ Coalition for Digital Rights*, J. URB. AFFS., Nov. 22, 2021, at 1–2 (describing how broad use of AI technology breaches privacy and increases inequality).

78. See *id.* at 15–17 (explaining how current smart cities are struggling to balance digital rights against the goals of private investors).

79. See Rebentisch et al., *supra* note 30, at 5 (noting how rise of techno-corporate players and their claimed public benefits negatively impact citizens’ rights and privacy while worsening societal divides).

80. See Anna Verna Eireiner, *Promises of Urbanism: New Songdo City and the Power of Infrastructure*, SPACE AND CULTURE, Aug. 12, 2021, at 6–7 (explaining array of private entities involved in developing Songdo).

81. See *id.* at 8 (noting that Songdo was developed with a profit over social issues model).

82. See *id.* at 7–8 (describing the process of private investors selling Songdo to South Korean government).

83. See *Our Urban Future May Be a ‘City in a Box’*, BLOOMBERG (Sept. 29, 2021, 8:29 AM), <https://www.bloomberg.com/news/videos/2021-09-29/our-urban-future-may-be-a-city-in-a-box> (highlighting how cities like Songdo were designed to be a model for other cities abroad).

84. See Moser, *supra* note 37, at 32–33 (comparing modern smart cities to cities developed through colonialism in treatment to locals and goals of gaining investors).

85. See, e.g., Elizabeth Rapoport, *Utopian Visions and Real Estate Dreams: The Eco-City Past, Present and Future*, 8 GEOGRAPHY COMPASS 137, 142–43 (2014) for a discussion on how environmental based smart cities often focus more on capital gains rather than environmental sustainability.

86. See *Our Urban Future May Be a ‘City in a Box’*, *supra* note 83 (stating although no city

localization. For example, Meixi Lake City is included in the growing club of ghost cities which remain practically devoid of any residents in part because they simply were not designed to cater to locals, but rather to investors.⁸⁷ This phenomenon can be seen as a symptom of “unicorn planning” or instant urbanization where the techno-optimistic construction of a brand-new smart city is idealized to be an instant success for urban ailments, local economics, and corporate profits.⁸⁸

Another symptom of unicorn planning urbanization in both Meixi Lake City and Songdo is a lack of accessibility for locals who are priced out of these cities because of exorbitant housing costs.⁸⁹ While Songdo is subject to targeted regulations and favorable tax breaks to attract corporate players and foreign direct investment, these benefits to foreigners limit the ability of locals to access services such as healthcare and education.⁹⁰ In these ways, the smart city can actually be contrasted with the high-modernist cities of the 1960s, which, for better or for worse, were government-funded without corporate influences and were “driven by socialist ethos.”⁹¹

Another criticism often hurled at the smart city is a potential loss of democracy and human rights in the digitized urban space.⁹² Smart cities inherently rely on the collection and analysis of data, thus a lack of transparency erodes citizen’s trust in the city to ethically process their data which hinders the development of smart cities in democracies.⁹³ Although the scope of this Comment is limited to examining smart city developments in two democratic societies, it is important to acknowledge that even more issues of human rights and political oppression become present with the implementation of these technologies in authoritarian regimes.⁹⁴

Moreover, the erosion of privacy, increased surveillance opportunities, and the

should be copied exactly, some city-building techniques could be successfully borrowed).

87. *See id.* (noting many smart cities are built to benefit investors rather than residents). *See generally* Jaro Asikainen, *The Real Estate Bubble Made an Urban Paradise into a Ghost City – and Meixi Lake City Does Not Stand Alone*, TAMPEREEN YLIOPIPPILASLEHTI AVIISI (Jatta Vuorinen trans.) (Apr. 4, 2017), <http://www.aviisi.fi/2017/04/8005/> (explaining rise of smart ghost cities).

88. *See* Rebutisch et al., *supra* note 30, at 1–2 (defining unicorn planning).

89. *See Our Urban Future May Be a ‘City in a Box’*, *supra* note 83 (noting costs often lead to smart cities being 20–30% occupied due to high housing costs); *see also* Asikainen, *supra* note 87 (stating high demand for space in smart cities leads to high housing costs).

90. *See* Shwayri, *supra* note 71, at 48 (describing lobbying efforts to change local laws to incentivize foreign investment).

91. Rebutisch et al., *supra* note 30, at 3.

92. *See* Calzada, *supra* note 65, at 4 (citing AI, surveillance capitalism, and protection of digital rights as pertinent challenges in smart cities today).

93. *See* John Wagner Givens & Debra Lam, *Smarter Cities or Bigger Brother? How the Race for Smart Cities Could Determine the Future of China, Democracy, and Privacy*, 47 *FORDHAM URB. L. J.* 829, 842–44 (2020) (discussing how companies and governments must enhance existing data protections, regulations, and transparency measures to improve public attitudes towards data collection and smart cities).

94. *See id.* at 858 (noting potential for abuse of ubiquitous technologies in developing nations); *see also* António Ferreira et al., *Planning Cities Beyond Digital Colonization? Insights from the Periphery*, *LAND USE POL’Y*, Jan. 11, 2022, at 1, 3 (discussing how autocratic states and big tech firms use technology to confirm user’s personal biases and shift their views and behavior in ways that is deemed desirable by those in power).

digital-by-default nature of the smart city environment can be seen as erasing citizens' choices and subjecting them to constant data collection—and the corporate and government gaze—without a true opportunity to opt out.⁹⁵ Because residents are constantly interacting with data-generating technologies in the urban space, it becomes too inconvenient to monitor their individual privacy across all services.⁹⁶ The lack of terms and conditions simultaneously creates a lack of informed consent and, in the case of technologies like CCTV or sensor-based tracking, a lack of notice as well.⁹⁷ For cities, however, the collection and use of data is viewed as a positive and necessary function of the smart city which uses citizens' data to continuously shape and improve the urban space.⁹⁸

In the context of surveillance capitalism, Zuboff writes that privacy in the digital age has not eroded, but rather decision-making rights have been redistributed to other entities that will use collected data to improve their product, under the guise of “personalization” of the user's experience.⁹⁹ In fact, Zuboff argues that the panopticon has transcended into ubiquity itself; therefore, surveillance capitalism has rendered it impossible to ever escape from the panopticon's gaze.¹⁰⁰ Zuboff labels this transformation the “information panopticon.”¹⁰¹ Zuboff argues this panopticon is enabled by the advent of the computer age and the proliferation of ICT, which are no longer dependent on physical structures.¹⁰² Now, power can be imposed silently and efficiently through technology¹⁰³—and smart cities lie right in the middle of this crossroad.

With these overarching issues in mind, the following Parts examine the development of smart cities in South Korea and Japan and the particular challenges faced by their respective citizenries in light of their national histories and smart city approaches.

95. See Calzada, *supra* note 65, at 4 (discussing how the digital-by-default model of smart cities erodes digital rights in democratic sphere).

96. See Rob Kitchin, *The Ethics of Smart Cities and Urban Science*, PHIL. TRANSACTIONS SOC'Y A, July 13, 2016, at 1, 9 (discussing how the vast volume of data-generating interactions renders individual policing of privacy difficult).

97. See *id.* (describing citizens' inability to opt-out of public tracking and surveillance technologies).

98. See Brian F. G. Fabregue & Andrea Bogoni, *Privacy and Security Concerns in the Smart City*, 6 SMART CITIES 586, 587–88 (2023) (discussing how big data has assisted ability to plan and integrate smart cities).

99. SHOSHANA ZUBOFF, *IN THE AGE OF THE SMART MACHINE: THE FUTURE OF WORK AND POWER* 15 (1988).

100. Lance Farrell, *Shoshana Zuboff: No Escape from the Panopticon*, SCIENCENODE (Oct. 14, 2017), <https://sciencenode.org/feature/shoshana-zuboff,-part-one-no-escape-from-the-panopticon.php>.

101. Elloit Cardozo, *Panoptic Pranksters: Power, Space and Visibility in the Information Panopticon in Scare Campaign*, 6 CINEJ Cinema J. 112, 114–15 (2017) (citing ZUBOFF, *supra* note 99, at 322).

102. See *id.* (noting that it may be difficult to assess being watched in information panopticon due to lack of physical observer).

103. See *id.* at 115 (noting major difference between Foucault's panopticon and information panopticon as absence of awareness or physical presence of the subject in relation to observer, as technology enables observer to surveil remotely).

III. SOUTH KOREA

In South Korea, a nation marred by colonization and war, state-led development reigned supreme for half a century and ushered an economic miracle that birthed a society connected by an ultra-high-tech infrastructure and rooted in capitalistic ethos.¹⁰⁴ Simultaneously, however, these rapid advances and the ingrained legacy of unbridled capitalism has created a new host of societal and socioeconomic ailments that permeate the pursuit of South Korean smart cities.

A. Evolution of South Korean Urban Planning and Smart City Policy

South Korea's transformation from the horrors of the Korean War to an economic powerhouse began in 1961 with the installation of a military junta led by Park Chung-Hee.¹⁰⁵ South Korea's rapid development was possible in part due to top-down development strategies that enlisted the capital and expertise of large business and industrial conglomerates, known as *chaebol*, to invest in research and development, construction, and manufacturing.¹⁰⁶ In exchange, the government granted tax breaks and shielded the conglomerates from competition.¹⁰⁷

The evolution of spatial planning policies throughout the decades following Park Chung-Hee's rise to power highlights the government's changing priorities and development goals.¹⁰⁸ Urban planning policy has been included in this state-led development strategy since the enactment of the Urban Planning Act in 1962.¹⁰⁹ The current policy was enacted in 2002 as the National Land Planning and Utilization Act (NLPUA).¹¹⁰ Earlier iterations heavily emphasized industrial development, as well as urban growth, housing, and infrastructure.¹¹¹ However, the turn of the

104. See Leigh Dayton, *A Top-Down Reinvention*, 581 NATURE S54, S54–S55 (2020) <https://media.nature.com/original/magazine-assets/d41586-020-01466-7/d41586-020-01466-7.pdf> (stating how military coup placing Park Ching-Hee in power in 1961 kickstarted South Korea's economic development and made South Korea a global leader in innovation and research and development).

105. See CHARLES HOLCOMBE, *A HISTORY OF EAST ASIA* 302–04 (2011) (describing South Korea's political and military history from Korean War to 1961 coup).

106. See Sangin Park, *Chaebol Reforms are Crucial for South Korea's Future*, 13 E. ASIA F. Q. 21, 21 (2021), <https://www.eastasiaforum.org/2021/03/24/chaebol-reforms-are-crucial-for-south-koreas-future> (citing *chaebol* as driving force in South Korea's economic development); see also Dayton, *supra* note 104, at S55 (discussing government support for *chaebol* in key industrial sectors as means to promote development).

107. See Dayton, *supra* note 104, at S55 (describing *chaebol*'s lack of competition); see also Eleanor Albert, *South Korea's Chaebol Challenge*, COUNCIL ON FOREIGN AFF. (May 4, 2018), <https://www.cfr.org/background/south-koreas-chaebol-challenge> (explaining tax incentives of *chaebols*).

108. See generally Park, *supra* note 106 (highlighting the history of South Korea's developmental policies from 1961–2021).

109. See Sung Hong Kim, *Changes in Urban Planning Policies and Urban Morphologies in Seoul, 1960s to 2000s*, 15 ARCHITECTURAL RSCH. 133, 134 (2013) (stating how urban planning policies have been based on Urban Planning Act and NLPUA since 1962).

110. *Id.*

111. See ORG. FOR ECON. COOP. AND DEV., *THE GOVERNANCE OF LAND USE IN KOREA: URBAN REGENERATION* 24 (Kay Olbison ed., 2019) (describing shifts in national spatial planning policies from focus on industry to globalization and sustainability since 2000s).

century saw a change in focus to sustainable development, quality of life, and minimizing regional disparities.¹¹² Incidentally, this shift coincided with the change in the governmental regime from an authoritarian military state to a democracy in 1987.¹¹³

Alongside the passage of NLPUA, the early 2000s saw another critical turning point in spatial planning development. The “ubiquitous city,” or “u-City” was born in 2003 on the heels of the 1997 Asian Financial Crisis.¹¹⁴ This u-City was developed in hopes of harnessing the rapid improvement and accessibility of technology, namely “ubiquitous computing”¹¹⁵ and ICT.¹¹⁶ The vision was clear: to blend the virtual and physical urban space through ubiquitous technologies to improve city services, infrastructure, management, and operations.¹¹⁷

By all accounts, the early iterations of the u-City project were a success. Seoul’s transportation system was revolutionized for efficiency, reduced traffic congestion, and greater safety through the use of location services tracking and CCTV.¹¹⁸ The accomplishments of the Seoul u-City project earned recognition by the International Telecommunications Union in 2013 as a distinguished smart city.¹¹⁹ While it appeared that the u-City project achieved some aspirations of the new democratic era—efficiency, quality of life, and sustainability—it failed to improve the development disparity between rural and urban areas.

Alongside the u-City project, the South Korean government sought to alleviate the stark imbalances between its rural and urban areas.¹²⁰ In theory, the government

112. *Id.*

113. Roh Tae Woo was the first democratically elected president of South Korea in 1987. However, the first democratically elected civilian president was Kim Young-Sam in 1992. This election was remarkable in that every candidate pushed for a reduction of government involvement in the economy. *See* HOLCOMBE, *supra* note 105, at 309.

114. *See* Jong-Sung Hwang, *The Evolution of Smart City in South Korea: The Smart City Winter and the City-as-a-Platform*, in SMART CITIES IN ASIA: GOVERNING DEVELOPMENT IN THE ERA OF HYPER-CONNECTIVITY 78, 81–82 (Yu-Min Joo & Teck-Boon Tan eds., 2020) (describing first u-City project’s development in South Korea).

115. “Ubiquitous computing” is defined as the transformation of everyday objects into computing devices that can communicate and interact with nearby interconnected microcomputers autonomously. *See* Ygal Bendavid et al., *Special Issue on RFID - Towards Ubiquitous Computing and the Web of Things: Guest Editors’ Introduction*, 8 J. THEORETICAL & APPLIED ELEC. COM. RSCH. III, III (2013).

116. *See* Tan Yigitcanlar & Sang Ho Lee, *Korean Ubiquitous-Eco-City: A Smart-Sustainable Urban Form or Branding Hoax?*, 89 TECH. FORECASTING & SOC. CHANGE 100, 106 (2014) (stating how ICT integration into physical urban space became focus of urban development within overarching Korean u-City framework in 2000s).

117. *See id.* at 105–06 (describing various city services that Korean smart city initiatives have aimed to achieve); *see also* Hwang, *supra* note 114, at 80 (discussing adoption of ICT in 2000s to promote social and digital change).

118. *See* Hwang, *supra* note 114, at 82–83 (highlighting how u-City technologies led to safer public services in Korea).

119. *Id.* at 83.

120. *See* Kwang Youl Ahn, *New Horizons in Well-Balanced Development in Korea: Focusing on Innovation Cities and Smart Cities*, in KOREA AND THE OECD: 25 YEARS AND BEYOND 179, 184–85 (2021), https://read.oecd-ilibrary.org/view/?ref=1113_1113283-

hoped to achieve rebalancing through the construction of new u-Cities, but in reality, the majority of these projects were implemented in the Seoul region.¹²¹ Moreover, the issue of regional and rural neglect persisted, since most of these projects involved the construction of new cities rather than the regeneration of older and run-down existing cities.¹²² The construction of new u-Cities essentially excluded a wide swath of the population who could not afford to live in them, further exacerbating the socioeconomic divide.¹²³ In addition, when given the opportunity, many local governments hesitated to implement these new technologies due to a combination of financial constraints and lack of technical expertise.¹²⁴

These disparities highlighted the need for an overarching legal framework to facilitate development, management, and operation of u-Cities.¹²⁵ Thus, the national government enacted the Act on Ubiquitous City Construction (u-City Act) in 2008.¹²⁶ The u-City Act established a top-down hierarchical planning system, empowering the central government to support local governments through financing, administration, and technology transfers.¹²⁷ The central government also facilitated cooperation between the private sector and local governments, both of which have a dual role in building and managing cities.¹²⁸

However, the 2008 financial crisis and growing anxiety over the climate crisis triggered a quick shift in the Act's agenda. The u-City transformed into the "u-eco-city."¹²⁹ The u-eco-city emerged at the same time as the Green Growth Vision in 2008 and echoed its same sentiments.¹³⁰ The u-eco-city blended the ideas of

nd6fg9yrxr&title=Regional-development (noting that South Korean government did little to alleviate regional inequality on large scale until 2000s).

121. *See id.* at 185 (describing South Korean government's goal in 2004 to increase regional development through new city construction and relocation of government agencies from Seoul); *see also* Hwang, *supra* note 114, at 84 (noting that core u-City goal was achieving balanced regional development, but most project were developed near Seoul).

122. *See* Hwang, *supra* note 114, at 84 (stating 65% of u-City projects were in new cities, while existing cities derived little benefit from these policies).

123. *See id.* (detailing how locals criticized u-City projects as being exclusively for upper-class residents).

124. *See* Jae Yong Lee & Ji-in Chang, *The Evolution of Smart City Policy of Korea*, in SMART CITY EMERGENCE: CASES FROM AROUND THE WORLD 173, 179 (Leonidas Anthopoulos ed., 2019) (describing concerns of local governments).

125. *See id.* at 179–81 (discussing the legal framework developed to facilitate u-Cities in South Korea).

126. Yeon Mee Kim et al., *Ubiquitous Eco-City Planning in Korea. A Project for the Realization of Ecological City Planning and Ubiquitous Network Society*, in REAL CORP 2009: CITIES 3.0 – SMART, SUSTAINABLE, INTEGRATIVE 925, 926 (Manfred Schrenk et al. eds., 2009), https://www.corp.at/archive/CORP2009_174.pdf.

127. *See id.* (highlighting hierarchical nature of u-City Act between national and local governments); *see also* Lee & Chang, *supra* note 124, at 179–80 (detailing processes provided by the Act, including construction, financing, and intelligent infrastructure).

128. Kim et al., *supra* note 126, at 926.

129. *See* Yigitcanlar & Lee, *supra* note 116, at 106 (discussing transition of u-City agenda into new development perspective of u-eco-city agenda).

130. *See* Ministry of Environment & Korea Environment Institute, *Korea's National Green Growth Strategy and Environmental Policy*, 7 Korea Env't Pol'y Bull., 2009, at 1 [hereinafter Green Growth Policy] (setting goal to secure energy independence and address climate change).

sustainability, ubiquitous technologies, and big data into a new developmental paradigm based in “Green ICT.”¹³¹ The Vision was codified in 2010 as the Framework Act on Low-Carbon Green Growth (Green Growth Act).¹³²

Article 51 of the Green Growth Act in particular calls for the development of a “green homeland” through the creation of carbon-neutral cities, expansion of greenbelts, and harmonization of the natural space with economic and human development.¹³³ This would all be achieved through the development and utilization of green technology and industry.¹³⁴ The Act also represented an improvement in terms of regional balancing.¹³⁵ Instead of taking a strictly top-down approach as seen with past policies, the central government allowed regional governments to implement their own green growth strategies so the regional governments could tailor their policies to the idiosyncrasies of their own localities while still pursuing sustainable growth.¹³⁶

In 2017, the South Korean government officially adopted the Fourth Industrial Revolution (4IR)¹³⁷ as part of their National Development Strategy¹³⁸ and reinvigorated the u-City Act as the Act on the Development of Smart City (Smart City Act).¹³⁹ This new approach stressed smart city development as a continuous learning process fueled by an increased emphasis on industrial innovation.¹⁴⁰ To

131. *See id.* (sustainability as primary goal of policy); See Hwang, *supra* note 114, at 80 (detailing post-2010 attempts to share data city-wide, instead of within specific fields, to optimize services and decision-making); See Paul D. Mullins, *The Ubiquitous-Eco-City of Songdo: An Urban Systems Perspective on South Korea’s Green City Approach*, 2 URB. PLAN., 2017, at 4, 7 (describing 2008 shift towards “Green ICT” as new paradigm for social and economic development).

132. See Jae-Hyup Lee & Jisuk Woo, *Green New Deal Policy of South Korea: Policy Innovation for a Sustainability Transition*, 12 SUSTAINABILITY, Dec. 6, 2020, at 5 (detailing Act’s passage and purpose to achieve growth through energy efficiency, green technology, and ecological harmony).

133. 저탄소 녹색성장 기본법 [Green Growth Act], art. 51 (S. Kor.), *translated in* Korea Legislation Research Institute’s online database, https://elaw.klri.re.kr/kor_service/lawView.do?lang=ENG&hseq=53039.

134. *Id.* art. 1.

135. See Michael Manning et al., ‘Green’ and ‘Smart’ in South Korea: Conceptions from the State to the Citizen, in SMART CITIES IN ASIA: GOVERNING DEVELOPMENT IN THE ERA OF HYPER-CONNECTIVITY 180, 184 (Yu-Min Joo & Teck-Boon Tan eds., 2020) (detailing implementation processes of Green Growth Act at provincial level, where cities would be responsible for own green growth plan and goal execution).

136. *See id.* (discussing best practice of allowing regional governments to implement their own green growth strategies).

137. The Fourth Industrial Revolution is a concept popularized by Klaus Schwab. It is said to involve “blurring the lines between the physical, digital, and biological spheres” through the utilization of emerging technologies such as IoT, artificial intelligence, robotics, and autonomous vehicles. See Klaus Schwab, *The Fourth Industrial Revolution: What It Means, How to Respond*, WORLD ECON. F. (Jan. 14, 2016), <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond>.

138. Hwang, *supra* note 114, at 79.

139. *See id.* at 85 (stating that u-City law was renamed to Act on the Development of Smart City in 2017).

140. *See id.* at 80 (arguing smart cities should be viewed as platforms geared toward

power this process, the government loosened restrictions on industry and the private sector through special exemption laws, relaxed zoning requirements, and financial support.¹⁴¹ This is referred to as the “regulatory sandbox” program.¹⁴² This program is critical for the government’s goal of increasing its capacity for new technologies, as it allows private entities a favorable corporate environment to test their new products and technologies in real-time on the urban population.¹⁴³ The government would later implement relevant regulations in response to the pre-launch results, creating an “allow first, regulate later” model.¹⁴⁴

In the context of the Smart City Act, the initial rollout of the regulatory sandbox through the 2019 amendment could only be applied to five cities designated as “smart regulatory innovation districts.”¹⁴⁵ However, as of a 2021 amendment, the smart city regulatory sandbox can be applied anywhere.¹⁴⁶ Upon application for approval as a Smart Innovation Project, the implementer presents a plan to the local government detailing the objectives, desired regulatory exemptions, information on the safety of implementation, and measures for accident prevention and compensation.¹⁴⁷ When approved, the Act empowers the relevant central government agency or local government to provide “necessary administrative and financial support.”¹⁴⁸ This provision in particular highlights the close symbiotic relationship between private entities and the state in economic and technological development.

Alongside this development, the government enacted the Korean New Deal in 2020 as a spiritual successor to the Green Growth Act in the era of the COVID-19 pandemic and 4IR.¹⁴⁹ As updated in 2021, the Korean New Deal encompasses several subsidiary policy directives: the Green New Deal, Digital New Deal, Human

improvement and innovation, as opposed to products, which are completed and maintained).

141. Lee & Chang, *supra* note 124, at 176.

142. See Nick Malyshev et al., *Regulatory Quality and Competition Policy in Korea*, in KOREA AND THE OECD: 25 YEARS AND BEYOND 146, 157 (2021), https://read.oecd-ilibrary.org/view/?ref=1113_1113286-gjy0v0ui0d&title=Regulatory-quality-and-competition-policy-in-Korea (contextualizing introduction of regulatory sandbox program as part of government embrace of 4IR and desire for increased innovation of products and services in sectors such as ICT).

143. See EUR. CHAMBER OF COM. IN KOREA, GUIDE TO THE REGULATORY SANDBOX sec. 1.1 (Aug. 31, 2020), <https://ecck.or.kr/wp-content/uploads/2020/08/Guide-to-the-Regulatory-Sandbox.pdf> (defining regulatory sandbox as system allowing companies to test their products and services on the open market free of regulation for a limited period, and only be regulated if it displays a problem).

144. Malyshev et al., *supra* note 143, at 158 (explaining that system-city regulatory model sought to promote emerging technologies and revise relevant laws).

145. Ministry of Land, Infrastructure, and Transport, *The New Smart City Law Will Come Into Effect on the 17th*, SMART CITY KOREA (June 16, 2021), <https://smartcity.go.kr/en/2021/06/16/17>.

146. *Id.*

147. Seumateudosi joseong mich saneobjinheung deung-e gwanhan beoblyul [Act on the Promotion of Smart City Development and Industry] art. 49 para. 3 subpara. 1–4 (S. Kor.), translated in Korean Legislation Research Institute’s online database [hereinafter Smart City Act], https://elaw.klri.re.kr/eng_service/lawView.do?lang=ENG&hseq=56560.

148. *Id.* art. 49 ¶ 9.

149. Lee & Woo, *supra* note 132, at 1.

New Deal, and Local New Deal¹⁵⁰—fusing all past policy goals into one package. Most notable is the inclusion of more human-centered initiatives, such as the eradication of socioeconomic inequality and poverty alleviation, which were not featured in the policies of the 2000s.¹⁵¹

B. The Digitized Developmental State

The developmental state undoubtedly enabled South Korea to reach the technological and economic heights that it enjoys today. However, the process also created an entrenched, corrupt alliance between the public and private sectors, where regulations and oversight are subsidiary to profit and “growth at all costs.”¹⁵² The cost is borne by the citizens, whose bodies become commodified, controlled, and, at worst, collateral damage.

1. Superficial Policies and Regulatory Frailties

While visions of sustainable growth and increasing urban citizens’ quality of life are certainly deserving goals, the government’s strategic moves towards ubiquitous planning and green growth were by no means coincidental. The planning policy shifts in both 2003 and 2008 occurred at opportunistic times amid crises where the government could capitalize on innovative urban development and sustainable growth as an economic driver.¹⁵³

Several scholars have criticized the government’s eco-friendly policies as “greenwashing,” intended to signal the superficial appearance of sustainable development, only for it to be a marketing tactic both in the economic and geopolitical scene.¹⁵⁴ Scholars Sung-Young Kim and Elizabeth Thurbon characterize this green shift as “developmental environmentalism,” embodying a clear and unrelenting embrace of state-led developmentalism.¹⁵⁵ Kim and Thurbon

150. Press Release, Ministry of Econ. and Fin., Gov’t Announces Korean New Deal 2.0, An Upgrade to Properly Reflect Changes (July 14, 2021) (describing various policy directives), https://english.moef.go.kr/pc/selectTbPressCenterDtl.do?boardCd=N0001&seq=5173#fn_download.

151. See Lee & Woo, *supra* note 132, at 8–9 (noting main difference between Korean New Deal and previous policy is inclusion of both climate and socioeconomic policy).

152. See John Lie, *The Wreck of the Sewol: The Sinking South Korean Body Politic*, 16 GEO. J. INT’L AFFS. 111, 114–16 (2015) (detailing long and corrupt history between *chaebol* and state, and prioritization of profit over consumer protection and safety regulations); see also Neal Gorenflo, *Is South Korea’s Growth-At-All-Costs Commitment a Recipe for Disaster?*, SHAREABLE (May 9, 2019), <https://www.shareable.net/is-south-koreas-growth-at-all-costs-commitment-a-recipe-for-disaster/> (referring to South Korea’s traditional growth model where development is pursued at numerous social, economic, and environmental costs).

153. See Yigitcanlar & Lee, *supra* note 116, at 110 (noting u-City movement followed 1997 Asian financial crisis and u-eco-city movement followed 2008 global financial crisis).

154. See Theo Mendez, *Growing Green? South Korea’s Approach to the COVID-19 Economic Recovery*, MELB. ASIA REV., Sept. 5, 2022, at 1, 6, <https://melbourneasiareview.edu.au/growing-green-south-koreas-approach-to-the-covid-19-economic-recovery> (discussing critiques of Green New Deal over its failure to address urgent environmental problems like air pollution and prioritize decarbonization over economic growth).

155. See Sung-Young Kim & Elizabeth Thurbon, *Developmental Environmentalism: Explaining South Korea’s Ambitious Pursuit of Green Growth*, 43 POL. & SOC’Y 213, 215 (2015)

argue that the Green Growth movement in 2008 was simply the country's elite aiming to capitalize off the growing interest in green industry, signaling a virtuous shift to sustainable development while continuing to prioritize the maximization of economic growth.¹⁵⁶

First, the definition of "green growth" in the Green Growth Act showcases the subtle prioritization of the economy over substantive climate-oriented policies. The Act defines green growth as achieving growth through green technology research and development, creating new jobs, and harmonizing the economy and environment.¹⁵⁷ Second, the government attempted to differentiate the Green New Deal from the Green Growth Act, stating that it was committed to rejuvenating ecosystems under this law and was more focused on developing digital infrastructure rather than construction.¹⁵⁸ However, Songdo, one of Korea's most highly publicized and controversial new smart city projects, was constructed upon a delicate wetland ecosystem.¹⁵⁹ Environmental activists often cite this performative showing and criticize the eco-city concept in general as an "excuse for more development."¹⁶⁰

The emphasis on economic development is also evident in the Smart City Act, which states its purpose as "improving the quality of life of citizens, promoting balanced national growth, and strengthening national competitiveness."¹⁶¹ The prioritization of corporations in government development strategies has been a cornerstone of Korean policy since the 1960s, but outsourcing development projects and loosened regulatory regimes have facilitated the construction of precarious urban infrastructure.¹⁶² A major risk factor is the matrix of legal frameworks and weak regulatory regime underlying both the NLPUA and, by extension, the Smart Cities Act.¹⁶³

The NLPUA consists of three levels covering different aspects of urban planning and different bases of legality.¹⁶⁴ Cities were rapidly developed and

(arguing government's attempted harmonization of economic and green growth is defined by its efforts towards commercialization and export of green technology).

156. *See id.* (discussing how even considering shifting attitudes towards sustainability, elite actors refuse to sacrifice economic growth).

157. Green Growth Act, *supra* note 133, art. 2.

158. *See* Lee & Woo, *supra* note 132, at 13 (contrasting Green New Deal and Green Growth Act by addressing various criticisms faced by latter, including support of large infrastructure projects and nuclear industries).

159. Yigitcanlar & Lee, *supra* note 116, at 111.

160. *See* Andrew Stokols, *Songdo Style: How Wise is Korea's 'Smart City'?*, KOREA JOONGANG DAILY (Aug. 25, 2014), <https://koreajoongangdaily.joins.com/news/article/article.aspx?aid=2994022> (citing statement by South Korean environmental activist on eco-city concept).

161. Smart City Act, art. 1 (S. Kor.).

162. *See* Kim, *supra* note 109, at 133–34 (highlighting both disconnect between short-term, micro-scale architectural planning and long-term, macro-scale urban planning in Seoul's post-war expansion, and challenges that emerged when foreign developers started building in Korea).

163. *See id.* (examining complex urban planning and land use management contained in NLPUA).

164. *Id.* at 134.

expanded thanks to this flexibility.¹⁶⁵ While individual projects should theoretically follow an urban plan delineated by the NLPUA, in practice, development projects are often initiated first, and an urban plan is developed, or a piece of legislation is passed, after the fact.¹⁶⁶ This system is further enabled by the regulatory sandbox program, which empowers private entities by removing regulations altogether, instead only implementing controls *after* a problem is discovered.¹⁶⁷

This process is a clear example of the “city in a box” model and poses clear risks for the citizens who are living in these “testbed” cities, who are essentially serving as guinea pigs on which development firms and corporations can experiment with their new technology.¹⁶⁸ Moreover, in the regulatory sandbox, the public sector continues to outsource infrastructure development to corporations but leave the management and maintenance to the local government after selling it back.¹⁶⁹ These public entities, because of their initial hands-off role in the research and development of the technology, are then ill-equipped to manage them independently.¹⁷⁰

2. Into the Metaverse . . . of the Surveillance State

The developmental state and regulatory sandbox still reign supreme over the implementation of urban planning policy, including the development of smart cities. Using ubiquitous technologies and sustainable development to uplift urban centers is practically meaningless when it comes at a serious cost to personal autonomy and privacy. As such, one of the most pressing concerns surrounding smart city discourse internationally is data privacy.

The widespread popular adoption of ICT and extensive connectivity of South Korean society has enabled South Korea to be ahead of the global curve in terms of smart city initiatives over the years.¹⁷¹ This connectivity is between citizens, government, and corporate entities. In 2014, there were over nine million CCTV cameras in South Korean cities, and each individual was captured eighty-three times

165. *See id.* at 140 (crediting rapid expansion of Seoul to laws and policies in place to promote urban development).

166. *See id.* at 134 (noting how relationship between plan and project was often reversed, as laws could bypass or be retroactively passed in pursuit of rapid development).

167. *See* EUR. CHAMBER OF COM. IN KOREA, *supra* note 143 (describing policy by which certain regulations are suspended or exempted during initial launch of a new product or service).

168. *See* Eireiner, *supra* note 80, at 7 (defining system as “test bed urbanism,” where technology and urban space itself—and all its residents, described as “users”—are both an experiment and product to be reproduced and consumed).

169. *See* Shwayri, *supra* note 71, at 44 (describing process where corporations develop and sell city projects to local governments that often are ill-prepared to manage them).

170. *Id.*

171. *See* Evan A. Feigenbaum & Michael R. Nelson, *How Korea Can Unleash the Power of Data*, in *THE KOREAN WAY WITH DATA: HOW THE WORLD’S MOST WIRED COUNTRY IS FORGING A THIRD WAY 1* (Evan A. Feigenbaum & Michael R. Nelson eds., 2021) (naming Korea as global leader in digital connectivity with 96% of adults having internet in 2018); Nir Kshetri et al., *Development of a Smart City and its Adoption and Acceptance: The Case of New Songdo*, 96 *DIGIWORLD ECON. J.* 113, 121 (2014) (citing Korea’s success in u-City and smart city development because of widespread adoption of ICT among residents).

a day and every nine seconds while outside of their homes¹⁷²—making South Korea one of the most heavily surveilled countries in the world.¹⁷³ While increased digitization and information access on the heels of the u-City movement inspired a series of data protection laws over the last two decades,¹⁷⁴ legal protections have their limits in the face of government action.¹⁷⁵

The permeation of government surveillance within urban infrastructure was particularly visible during the COVID-19 pandemic in contact-tracing efforts.¹⁷⁶ Contact-tracing techniques are even more invasive than the typical street surveillance methods because the tracking directly uses data produced by a citizen's personal effects—mobile phones, credit cards, and transaction records—as well as CCTV footage.¹⁷⁷ The use of this technology was made legally possible through a 2015 law passed in response to an outbreak of Middle Eastern Respiratory Syndrome, which granted authorities the ability to use collected data to trace individuals' movements and detail them within a centralized database known as the Smart Quarantine Information System.¹⁷⁸

Authorities justified the use of data-surveillance techniques as necessary—in the interest of the greater public safety—to bypass individuals who were unwilling or unable to disclose their contacts.¹⁷⁹ In fact, much of the success of the South Korean COVID-19 response was made possible by close public-private partnerships, particularly in ICT and healthcare.¹⁸⁰ Under the Smart Quarantine Information System, users of both private- and government-made mobile phone applications were encouraged to track individual health and location data.¹⁸¹ For quarantine violators, the government required individuals to wear tracking “safe bands,” although, due to human rights concerns, enforcement was limited to

172. Jung Won Sonn & Jae Kwang Lee, *The Smart City as Time-Space Cartographer in COVID-19 Control: The South Korean Strategy and Democratic Control of Surveillance Technology*, 61 EURASIAN GEOGRAPHY & ECON. 482, 484 (2020).

173. *See id.* (noting how density of surveillance technology presents South Korea as one of the most surveilled countries in the world).

174. *See* Kshetri et al., *supra* note 171, at 119 (citing 2011 Personal Information Protection Bill as revision to previous laws from 1999, 2001, and 2008).

175. *See* Sonn & Lee, *supra* note 172, at 484–85 (discussing cases in which South Korean government used and exposed citizens' private data in attempting to combat COVID-19 pandemic).

176. *See* Sunghee Chung & Sujin Lee, *South Korea: Democracy, Innovation, and Surveillance, in Covid-19 in ASIA: L. & POL'Y CONTEXTS* 239, 242–44 (Victor V. Ramraj ed., 2021) (explaining rise of digital tracking in COVID-19 pandemic).

177. *See id.* at 243 (Victor V. Ramraj ed., 2021) (citing post-MERS amendments to Infectious Disease Control and Prevention Act to provide legal basis for disclosure of private information to bolster contact tracing and slow spread of diseases).

178. *See id.* at 245 (discussing Smart Quarantine Information System that facilitated tracking of individuals' movements).

179. Dyani Lewis, *Why Many Countries Failed at COVID Contact-Tracing – But Some Got It Right*, 588 NATURE 384, 385 (Dec. 17, 2020), <https://www.nature.com/articles/d41586-020-03518-4>.

180. Chung & Lee, *supra* note 176, at 248.

181. *See id.* at 245 (describing Self-quarantine Safety Application's use of GPS tracking and personal health data processable by state).

individuals who consented.¹⁸²

Critics of the system as a whole argue that the government publishing personal health data and movements also constitutes a human rights issue, with some published data being so specific that it could potentially reveal the subject's identity.¹⁸³ In response to growing concerns over data and personal privacy, the Korea Centers for Disease Control and Prevention issued updated guidelines to local governments limiting the amount of information that could be disclosed publicly in the interest of protecting personal privacy and identifiable information.¹⁸⁴ However, the damage was done, and the widespread use of surveillance technology has raised concerns about the continuously blurring boundary between biopolitical and authoritarian governance—a troubling call-back to the days of martial rule.¹⁸⁵

These concerns are only amplified within smart cities where CCTV, tracking, and monitoring technology are even more widespread. For example, legal and governance limits needed to be modified to properly execute interconnected information systems and city services.¹⁸⁶ It was illegal to share CCTV footage between agencies or to individuals without authorization to monitor them, but these restrictions were loosened in order to make the entire system possible.¹⁸⁷ Moreover, tracking technology is steadily being implemented across numerous South Korean urban spaces. In Seoul, the metropolitan government (SMG) is continuing to incorporate intelligent technologies, such as radio frequency identification (RFID) tags,¹⁸⁸ which are used in automated tracking and monitoring, to ensure individual regulatory compliance and enable street sensor networks that monitor child safety.¹⁸⁹ Moreover, the SMG recently introduced plans to invest hundreds of millions of dollars towards the city's "digital transformation" in technologies including big data, AI, and Internet of Things.¹⁹⁰ In particular, the city hopes to roll out an AI-powered

182. *Id.*

183. See Mark Zastrow, *South Korea is Reporting Intimate Details of COVID-19 Cases: Has It Helped?*, NATURE (Mar. 18, 2020), <https://www.nature.com/articles/d41586-020-00740-y> (raising concerns about privacy and human rights violations and how symptomatic people may avoid testing for fear of stigma).

184. Chung & Lee, *supra* note 176, at 243–44.

185. See *id.* at 249 (examining tension between individuals' rights to privacy and government's obligation to protect its citizens from harm).

186. Lee & Chang, *supra* note 124, at 182.

187. See *id.* (describing legal and administrative barriers to interdepartmental cooperation in municipal governments and services as major difficulty in achieving truly interconnected service system).

188. Radio Frequency Identification (RFID) uses radio waves to identify wireless devices, or "tags," from a distance. *Radio Frequency Identification (RFID): What Is It?*, U.S. DEP'T OF HOMELAND SEC., <https://www.dhs.gov/radio-frequency-identification-rfid-what-it> (last updated June 27, 2022).

189. See Jung Hoon Lee et al., *Towards an Effective Framework for Building Smart Cities: Lessons from Seoul and San Francisco*, 89 TECH. FORECASTING & SOC. CHANGE 80, 92 (2014) (detailing Seoul's use of RFID tags to protect children from kidnapping and catch people driving wrong way down one-way streets).

190. See Sarah Wray, *Seoul Splashes Out on the Metaverse, Smart CCTV and More*, CITIES TODAY (Jan. 26, 2022), <https://cities-today.com/seoul-splashes-out-on-the-metaverse-smart-cctv-and-more> (detailing planned innovations of digital transformation like smart crosswalks, AI-based

CCTV system, which would use AI and facial recognition technologies to analyze footage, detect emergencies, and identify “wandering dementia patients and children.”¹⁹¹ In smart cities like Songdo, RFID technology is extensively used for purposes as mundane as rewarding the use of public recycling bins.¹⁹²

While advanced technology absolutely adds value to urban services, and the intentions of government bodies are often good,¹⁹³ there needs to be a level of caution in the use of ubiquitous technology based in citizen’s personal privacy. Critics of the SMG’s “Metaverse Seoul” argue that AI analytics will transform cameras into “robot guards” that serve public surveillance rather than public safety.¹⁹⁴ While the SMG currently has no plans to use AI-analyzed footage in criminal cases,¹⁹⁵ CCTV is already susceptible to both personal and institutional abuse from its crime prevention and investigatory methods.¹⁹⁶ A city spokesperson responded by clarifying that personal information would only be collected by those who “agreed to [the] privacy policy”¹⁹⁷ However, when technology continues to be seamlessly integrated into more facets of everyday city life, should residents be expected to agree to the terms and conditions of living in their own city? While data can be de-identified, the government can still use and enable social access to such data.¹⁹⁸

South Korea already has relatively strong personal privacy laws,¹⁹⁹ but regulations specifically addressing smart city technology remain relaxed with the assistance of the regulatory sandbox.²⁰⁰ The government has responded favorably to increased calls for stronger personal privacy protections in light of the growing prevalence of ubiquitous technologies.²⁰¹ However, in addition to their already

water management, and upgrading big data platforms).

191. *Id.*

192. Kshetri et al., *supra* note 171, at 122.

193. *See* Hwang, *supra* note 114, at 82–83 (highlighting successes and innovations brought by u-City movement and successors, like improvements to transportation services, traffic congestion, and public safety).

194. *See* Wray, *supra* note 190 (explaining ACLU concerns regarding camera’s use of surveillance).

195. *See id.* (reporting that Seoul has no plans to use automatic license plate recognition to track criminals).

196. *See* Min-ho Jung, *Learning to Live with Cameras Everywhere*, KOREA TIMES (Mar. 27, 2017), https://www.koreatimes.co.kr/www/nation/2017/03/119_226353.html (citing privacy concerns with increased use of CCTV cameras).

197. *See* Wray, *supra* note 190 (explaining that individual information from people who do not consent to the privacy policy will be anonymized to reduce privacy invasion).

198. *See* Gyeheun Jang & Jong-In Lim, *Technologies of Trust: Online Authentication and Data Access Control in Korea*, in *THE KOREAN WAY WITH DATA: HOW THE WORLD’S MOST WIRED COUNTRY IS FORGING A THIRD WAY* 11, 33 (Evan A. Feigenbaum & Michael R. Nelson eds., 2021) (explaining how 2020 revision of three data laws enabled anonymous data exchange for new commercial services).

199. *See* Hwang, *supra* note 114, at 89 (stating that South Korea has very strong privacy protection regulations).

200. *Id.*

201. *See* Jang & Lim, *supra* note 198, at 33 (stating how privacy protections were nonexistent in regards to ICT until 2001 with revision of ICT Promotion Act).

highly advanced technological environment, the relaxed social and regulatory landscape tends to attract the development of smart cities and accompanying technology.²⁰² Smart cities need to be treated less as elite technocratic institutions for corporate experimentation and more as an urban space where people actually live. With this, legal protections need to be implemented in these environments for its citizens, instead of tax incentives and weakened regulations for corporate interests.

IV. JAPAN

Japan's foray into eco- and smart city development began in the mid-twentieth century, but recently efforts towards their development have shifted into overdrive.²⁰³ While sustainability and resilience are guiding principles behind Japan's development, corporate influence also permeates Japanese urban planning strategies as well as presents their own challenges.²⁰⁴ At the same time, the Japanese approach to emerging technologies and smart city development presents valuable ideas towards the implementation of smart cities globally.

A. "Customer is God": A Japanese Approach to Smart Cities

In contrast to the South Korean experience, the smart city's inception grew not out of 1990s techno-optimism, but out of a precursory interest in ecological urban development; an early example being the Eco-Town Program in 1997, a joint project between the Ministry of Economy, Trade, and Industry (METI) and the Ministry of Environment (MoE).²⁰⁵ Interest in the idea of smart cities continued through the turn of the century with a series of policy initiatives aimed to build a digital society: the "e-Japan" policy of 2001, "u-Japan" in 2006, and "i-Japan" in 2009.²⁰⁶

The aim of the project was to promote advanced, environmentally harmonized towns particularly through industrial innovation and waste management systems.²⁰⁷ In fact, many of the legal frameworks in support of the Eco-Town Programs

202. See Kshetri et al., *supra* note 171, at 114 (noting South Korea's early advancement in smart city development due to fewer regulatory obstacles).

203. See GLOB. ENV'T CTR. FOUND., *ECO-TOWNS IN JAPAN: IMPLICATIONS AND LESSONS FOR DEVELOPING COUNTRIES AND CITIES 1* (2005) (on file with U.N. Env't Programme) [hereinafter *ECO-TOWNS IN JAPAN*], <https://www.unep.org/resources/report/research-eco-towns-japan-implications-and-lessons-developing-countries-and-cities> (explaining that Eco-Towns were recently developed in Japan within last several years).

204. See Daniela Pianezzi et al., *Public-Private Partnership in a Smart City: A Curious Case in Japan*, 89 *INT'L REV. ADMIN. SCI.* 632, 634 (2023), <https://journals.sagepub.com/doi/epdf/10.1177/00208523211051839> (arguing that private corporations have substantial influence on urban planning).

205. See *ECO-TOWNS IN JAPAN*, *supra* note 203, at 5 (discussing origins of eco-towns in Japan).

206. Yuan Su et al., *The Experience and Enlightenment of Asian Smart City Development—A Comparative Study of China and Japan*, 14 *SUSTAINABILITY* 1, 4 (2022) (discussing early examples of ecological urban development).

207. See *ECO-TOWNS IN JAPAN*, *supra* note 203, at 5 (explaining how origin of Eco-Towns was to help companies implement zero emissions and resolve garbage problems)

throughout the 1990s and 2000s were focused on resource and waste efficiency.²⁰⁸ The development process was relatively bottom-up. Local governments would develop localized Eco-Town plans and submit for approval by METI and MoE, who judged plans based on their innovation.²⁰⁹ Approved projects then received financial support from the national government.²¹⁰

In 2009, the national government launched a pilot project for smart cities which focused on renewable energy, IT-driven optimization, and marketability of the project's developments for international export.²¹¹ The project was run through a public-private partnership, where the government selected four "test bed" cities—Yokohama, Kitakyushu, Keihanna, and Toyota—and private corporations would submit their proposals for development to the national government, with the endorsement of the municipal government.²¹²

Compared to South Korea, a distinguishing feature of the public-private partnership model in Japan is its intricate and coordinated nature.²¹³ While urban planning processes in South Korea are relatively top-down, Japanese smart cities involve meticulous coordination between local and national governments, and the corporations involved.²¹⁴ This multi-stakeholder model has been present in eco- and smart city planning since the Eco-Town Programs of 1997.²¹⁵ First, the national government provides subsidies to the prefectural and municipal governments and approval for development plans.²¹⁶ Next, private firms provide technical expertise²¹⁷ and capital, while local governments are responsible for ensuring that corporations are proposing ideas that are aligned with the center's policy agenda.²¹⁸

This hierarchical relationship derives from the Meiji Era, when the Tokugawa Shogunate was replaced by a new government that aimed to balance industrial

208. *See id.* at 6, 9–10 (listing series of laws on reduction of natural resource extraction and waste reduction, notably Basic Law for Establishing the Sound Material-Cycle Society from 2000).

209. *Id.* at 5.

210. *Id.* at 5–6.

211. *See* Atsushi Deguchi, *From Smart City to Society 5.0*, in *SOCIETY 5.0: A PEOPLE-CENTRIC SUPER-SMART SOCIETY* 48 (Hitachi-UTokyo Joint Rsch. Lab'y trans., 2018), <https://link.springer.com/content/pdf/10.1007/978-981-15-2989-4.pdf?pdf=button> (discussing Japanese government's 2009 Next-Generation Energy and Social Systems Demonstration pilot program).

212. *Id.*

213. *See* Pianezzi et al., *supra* note 204 at 637 (suggesting that Japanese smart city cases signal a more complex dynamic than other "transactional" public-private partnership arrangements).

214. *See id.* at 638 (discussing how national government coordinates smart city projects with local governments and corporations).

215. *ECO-TOWNS IN JAPAN*, *supra* note 203, at 6.

216. *Id.* at 7.

217. *See* Masaru Yarime, *Facilitating Innovation for Smart Cities: The Role of Public Policies in the Case of Japan*, in *SMART CITIES IN ASIA: GOVERNING DEVELOPMENT IN THE ERA OF HYPER-CONNECTIVITY* 93, 96–103 (Yu-Min Joo & Teck-Boon Tan eds., 2020) (noting that smart city innovations were largely conducted by large infrastructure firms).

218. *See* Pianezzi et al., *supra* note 204, at 637 (citing important role of local governments channeling national policy agenda in private sector participation).

Western-inspired development with traditional Japanese values.²¹⁹ Here, “sponsored capitalism” is described as a compromise between socialist central planning and traditional capitalism.²²⁰ This allows neither the government nor business to impose its will or assume leadership over the other.²²¹ The cultural ethos is one of harmony and “co-creation,”²²² where the primary approach to city planning is developing a better end-product for the users—the residents.²²³

The ethos of co-creation in Japanese urban planning means that residents also have a role in the conversation. Professor Deguchi describes typical international approaches to smart cities focused on technology, industry, or transportation.²²⁴ The Japanese approach centers around solving “specific social issues and improv[ing] quality of life for the citizens.”²²⁵ One of his most notable projects is the Kashiwa-no-ha Smart City near Kashiwa City, about thirty minutes from Tokyo.²²⁶ Initially designated as an eco-model city,²²⁷ the idea for Kashiwa-no-ha began as a simple, compact new community that would serve as a cutting-edge commuter town to Tokyo.²²⁸

In 2006, the Urban Design Center of Kashiwa-no-ha (UDCK) opened a platform for government, business, academic, and community collaboration to join together in developing solutions to local issues.²²⁹ Co-working labs enabled stakeholders, namely the city’s development firm Mitsui Fudosan and technology firm Hitachi, to collaborate in pursuit of the city’s three objectives: eco-friendly urban development, longer healthy life expectancy, and creation of new industries.²³⁰ The city initially focused on the reduction of CO₂ emissions and renewable energy, but the 2011 Tōhoku Earthquake prompted a paradigm shift in smart city strategy towards emergency energy planning.²³¹ The innovations in

219. *See id.* (crediting Japanese political-economic model to Meiji Restoration efforts towards industrial development with traditional values).

220. *See id.* at 639 (stating that sponsored capitalism is a compromise between central planning in socialist countries and capitalist model of U.S.).

221. *Id.*

222. *See id.* at 643 (detailing cultural importance of hierarchy and harmony to foster long-term relationships).

223. *See* Japan Brandvoice, *Japan Sparks New Life in Local Communities with Human-Centric Smart Cities*, FORBES (Dec. 23, 2019), <https://www.forbes.com/sites/japan/2019/12/23/japan-sparks-new-life-in-local-communities-with-human-centric-smart-cities/?sh=f60f7774398e> (detailing cultural value of prioritizing customer’s needs into city planning approach that focuses on achieving better quality of life).

224. Deguchi, *supra* note 211, at 44–45.

225. Japan Brandvoice, *supra* note 223.

226. *See id.* (describing Kashiwa-no-ha project as part of broader Society 5.0 vision).

227. Deguchi, *supra* note 211, at 49.

228. Japan Brandvoice, *supra* note 223.

229. *See id.* (explaining UDCK coordinates development and finds innovative solutions to local issues); Deguchi, *supra* note 211, at 50 (crediting UDCK for government, business, and academic collaborations).

230. Deguchi, *supra* note 211, at 49.

231. *See* Hitachi Urban Solutions Business Unit, *Kashiwa-no-ha Smart City: Making Smart Use of Local Energy Sources to Build the Communities of the Future*, HITACHI (July 2017), https://social-innovation.hitachi/en-us/case_studies/smartcity_kashiwanoha/ (noting that

energy systems developed through the UDCK led to the city's designation as a "FutureCity," making it eligible for government subsidies.²³² This designation also led to LEED-ND1 Platinum certification in 2016, the highest international standard for ecological neighborhood development.²³³ Most importantly, the post-2011 paradigm shift signaled a new strategy for smart cities and their use of technology—creating smart and *resilient* cities.²³⁴

B. Taming Nature: Using Smart Cities to Cure Society

In 2010, the Cabinet of Japan issued the New Growth Strategy, which presented a new framework for building "green cities"²³⁵ and directing urban revitalization efforts into the "hollowing out" of rural areas while cultivating regional cultural identity.²³⁶ The plan for green cities focused intently on urban revitalization, rather than new builds, to upgrade Japan's existing cities according to a new approach to urban planning centered on low carbon.²³⁷

After the Tōhoku Earthquake, the national planning strategy markedly shifted beyond simply sustainable planning. While green planning was in part a long-term strategy towards improving quality of life,²³⁸ the devastation of 2011 brought a realization to the national consciousness that there was a need beyond green urbanism—they needed *resilient* urbanism and to put residents at the front and center of the development strategy.²³⁹ Moreover, it was growing increasingly obvious that earthquakes and climate change are not the only societal issues looming over Japan.²⁴⁰ A rapidly aging population also presents serious challenges to Japanese society.²⁴¹

emergency energy planning was added to local urban agenda after 2011).

232. See Deguchi, *supra* note 211, at 50 (discussing how UDCK platform helped Kashiwanoha receive FutureCities designation and consequently become eligible for government subsidies).

233. Japan Brandvoice, *supra* note 223.

234. See Yarime, *supra* note 217, at 97 (discussing prioritization of strengthening energy supplies through cutting-edge ICT systems after Fukushima).

235. See THE CABINET OF JAPAN, THE NEW GROWTH STRATEGY: BLUEPRINT FOR REVITALIZING JAPAN 2 (June 18, 2010), https://www.cas.go.jp/jp/seisaku/npu/policy04/pdf/20100706/20100706_newgrowstrategy.pdf (featuring excerpt from New Growth Strategy cabinet decision).

236. See *id.* at 31 (explaining how "hollowing out" resulted from previous development strategies, encouraging regional individuality, and cultivating cultural strengths).

237. See *id.* at 21 (describing a fundamental revision to urban planning and renewal with transforming Japan's urban areas into green cities).

238. See *id.* (stating how promotion of eco-housing and renewable energies is linked to comfort and quality of life).

239. See Yarime, *supra* note 217, at 97 (describing natural disasters and disruptions as issues in Japan).

240. See Y. Suzuki et al., *Studies on the Enforcement of the Low Carbon City Promotion Act and a Case Example of Low Carbon City Development Plan in Omihachiman City*, 193 SUSTAINABLE DEV. & PLAN. 422, 423 (describing social and financial factors considered in passing the Low Carbon City Promotion Act).

241. See *id.* (stating how aging population was one of key considerations in passing Low Carbon City Promotion Act).

In response to these anxieties, the national government passed the Low Carbon City Promotion Act in 2012, which aims to promote compact urbanism.²⁴² The theory behind creating more compact cities was that it would provide residents with centralized and accessible urban functions while also being more environmentally friendly.²⁴³ It was a step towards combining human-focused disaster-preparedness with sustainable planning strategies. However, a major transformation of Japanese urban planning strategy occurred in 2015 with the announcement of the Fifth Science and Technology Basic Plan: “Society 5.0” with the focus towards building a digital society.²⁴⁴

1. Building a Digital Garden City Nation

Society 5.0 is a series of initiatives aimed at creating a “super smart society” through the complete merger of the physical and cyber space.²⁴⁵ At its heart is the creation of a “human-centered society” that balances solving social problems with economic advancement through an integrated cyber-physical space.²⁴⁶ Smart cities are an essential building-block of the “super smart society” where ubiquitous technology can be integrated into the physical urban space.²⁴⁷ However, an initial hurdle in executing the ambitions of a fully-integrated society is widening the scope of Japanese smart cities, which tend to be limited to test bed projects focused on particular sectors within a specific neighborhood or city.²⁴⁸

In anticipation of this issue, the “Super City Act” was passed.²⁴⁹ The government praises super cities as “more advanced than ‘smart cities’”²⁵⁰ by utilizing AI and big data to change society and citizens’ daily lives across key social and infrastructural sectors.²⁵¹ The implementation utilizes the familiar multi-stakeholder model, where municipalities, in coordination with private companies,

242. *See id.* at 422 (discussing issues that led to enactment of Low Carbon City Promotion Act in 2012).

243. *Id.* at 422–23.

244. COUNCIL FOR SCI., TECH. AND INNOVATION: CABINET OFFICE GOV'T OF JAPAN, REPORT ON THE 5TH SCIENCE AND TECHNOLOGY BASIC PLAN 1 (Dec. 18, 2015), https://www8.cao.go.jp/cstp/kihonkeikaku/5basicplan_en.pdf.

245. *See id.* at 13 (defining super smart society within context of Society 5.0).

246. Japan Brandvoice, *Data Governance and Smart Cities are Helping Improve Quality of Life in Japan*, FORBES (Jan. 21, 2022), <https://www.forbes.com/sites/japan/2020/01/21/data-governance-and-smart-cities-are-helping-improve-quality-of-life-in-japan/?sh=448136eb4097>.

247. *See* Deguchi, *supra* note 211, at 44 (stating how IT integration with existing urban services will create more advanced society in line with aspirations of Society 5.0).

248. *Id.* at 62.

249. *See* Sayuri Umeda, *Japan: “Super City” Law Enacted*, LIBR. OF CONG. (Aug. 18, 2020), <https://www.loc.gov/item/global-legal-monitor/2020-08-18/japan-super-city-law-enacted> (explaining the Act is amendment to 2013 National Strategic Special Zones Act, enabling regulatory incentives for private-public innovation and economic growth such as super cities).

250. *Id.*

251. *See* Yuta Hirayama & Rushi Rama, *Japan’s Smart City Initiatives Will Play Key Role in Its Digitisation and Economic Revival*, WORLD ECON. F. (Apr. 6, 2021), <https://www.weforum.org/agenda/2021/04/japan-smart-city-initiatives-digitisation-economic-revival> (citing key transformations in medical care, transportation, education, energy, and crime prevention).

need to have super city plans approved by both its residents and the central government.²⁵² At the regional level, appointed “smart city architects” will be responsible for service and technology coordination, which also helps to promote system diversification and inter-agency cooperation at the local level.²⁵³

Recently, another initiative aimed at bringing Society 5.0 to life is what Prime Minister Fumio Kishida calls “a new form of capitalism.”²⁵⁴ The ideology behind this “new capitalism” is to address the social and economic inequalities that develop and perpetuate under the prevailing regime and prioritize environmental protection over “shareholder value.”²⁵⁵ New capitalism continues to encourage public-private partnerships but urges companies to act in the interest of the social good and a sustainable future rather than short-term interests.²⁵⁶ One of the key elements of the government’s growth strategy is the continued pursuit of the digital transformation of society, enabled by the “Digital Garden City Nation for Achieving Rural-Urban Digital Integration and Transformation” plan.²⁵⁷ The plan is aimed at addressing socioeconomic and infrastructural disparities between rural and urban areas and making “tech-driven prosperity” more accessible.²⁵⁸ Moreover, the plan establishes a Digital Agency, which oversees IT infrastructure and reviews “some 40,000 laws and regulations to ensure that [the] government is making the best of new technologies.”²⁵⁹

The plan demonstrates what the digital society can truly encompass, as it pushes the boundaries of traditional smart cities and brings ubiquitous technology and solutions to rural areas. Specifically, the plan has four pillars: building digital infrastructure, developing individuals’ digital skills, implementing digital services for rural problems, and creating a support system to enable everyone, including marginalized populations, to enjoy a digital society.²⁶⁰ This approach echoes the sentiments proposed in the 2010 New Growth Strategy, as it maintains the commitment to revitalizing rural areas while preserving their cultural identities

252. Umeda, *supra* note 249.

253. Hirayama & Rama, *supra* note 251.

254. Gov’t of Japan, *Japan Looks to a New Approach for Capitalism*, REUTERS (Mar. 8, 2022), <https://www.reuters.com/article/sponsored/japan-looks-to-a-new-approach-for-capitalism>.

255. *See id.* (explaining that relentless pursuit of shareholder value has resulted in climate crisis by prioritizing financial gain over other values).

256. *See* Grace Mayhew & Elena Iriyama, *The Digital Garden City Nation: Opportunities Abound in Japan’s Changing Social Landscape*, APCO WORLDWIDE (June 23, 2022), <https://apcoworldwide.com/blog/the-digital-garden-city-nation-opportunities-abound-in-japans-changing-social-landscape/> (detailing various areas of action through expansion of digital infrastructure, including deployment of technology to rural areas, access, and upgrading rural economies).

257. Gov’t of Japan, *supra* note 254.

258. *Id.*

259. *Id.*

260. *See* Gov’t of Japan, *Vision for a Digital Garden City Nation: Achieving Rural-Urban Digital Integration and Transformation*, JAPANGOV (Jan. 25, 2022), https://www.japan.go.jp/kizuna/2022/01/vision_for_a_digital_garden_city_nation.html (discussing four pillars of government’s Vision for a Digital Garden City Nation).

amidst a drastic technological transformation.²⁶¹

2. Building Human-Oriented Cities: Who Has the Right to the City?

The challenge with creating people-centered smart cities is orienting the digitized urban space in a way that is accessible and beneficial to its residents, as technology at its core is cold and dispassionate, diametrically opposite to the complex and diverse human experience. One of the most critical mechanisms in balancing the digital-human city is community participation.²⁶² However, the public-private partnership model has not always coincided well with public participation channels. While crucial legal frameworks such as the City Planning Act include provisions that strengthen public participation channels,²⁶³ government and business interests oftentimes are felt to outweigh those of the community in practice.²⁶⁴

With emphasis on “human connectivity,” another major challenge to Society 5.0 is privacy.²⁶⁵ In the wake of Society 5.0 and the Fourth Industrial Revolution (4IR), the Japanese government has emphasized their commitment to data governance and creating frameworks that are beneficial to individuals and smart cities alike.²⁶⁶ Critics have raised concerns about smart cities’ potential for data leaks and risks to personal privacy, particularly for a city’s need to gather and use personal information and the potential for increased government surveillance.²⁶⁷

Similar to the AI-powered CCTV systems envisioned in Seoul, some Japanese cities have started implementing advanced surveillance systems through the use of sensor tracking and CCTV in an effort to address challenges posed by their rapidly aging population.²⁶⁸ The system functions through a tracking beacon placed on the individual’s person, which sends notifications to family members as the individual moves through the streets.²⁶⁹ Proponents of the system argue that it protects society’s

261. See THE CABINET OF JAPAN, *supra* note 226, at 3–5 (explaining how the New Growth Strategy promotes cultural heritage).

262. See Deguchi, *supra* note 211, at 56 (stating that smart cities require approach based on citizen participation, rather than being led by private businesses or public institutions).

263. See Noriko Okubo, *The Development of the Japanese Legal System for Public Participation in Land Use and Environmental Matters*, 52 LAND USE POL’Y 492, 497 (2016) (citing 2002 revision to City Planning Act that required municipalities to involve residents in planning process).

264. See *id.* at 498 (detailing public concerns that community ideas are never actually implemented in policies).

265. See Ryosuke Shibasaki et al., *Integrating Urban Data with Urban Services*, in SOCIETY 5.0 67, 81 (Hitachi-UTokyo Lab’y, 2018), <https://link.springer.com/content/pdf/10.1007/978-981-15-2989-4.pdf?pdf=button> (arguing data based on video camera footage at train stations would violate individual privacy if used unedited).

266. See Japan Brandvoice, *supra* note 246 (discussing government efforts in support of updated data governance frameworks).

267. See Umeda, *supra* note 249 (data concerns arise because cities require gathering and use of personal information).

268. See Ben Dooley & Hisako Ueno, *Where a Thousand Digital Eyes Keep Watch Over the Elderly*, N.Y. TIMES (Feb. 2, 2022), <https://www.nytimes.com/2022/02/02/business/japan-elderly-surveillance.html> (discussing importance of managing costs of care for aging population for Japan’s stability).

269. *Id.*

most vulnerable elderly and helps them retain some independence.²⁷⁰ Critics claim that it threatens the individual's personal privacy and dignity and strays much too close to being "Orwellian overreach."²⁷¹ Some towns, such as the Panasonic-developed Fujisawa Smart Town, even use facial recognition cameras.²⁷² However, some municipalities have adopted less intrusive systems,²⁷³ and facial recognition systems are only used with residents' consent.²⁷⁴ In fact, some smart surveillance systems have been praised by residents. In the city of Kakogawa, about eighteen miles from Kobe, the municipal government implemented the *mimamori* (meaning "to watch and protect") system of thousands of cameras and sensors, which collected residents' location data from Bluetooth-enabled tags carried on their person and made the information available to volunteers and family members via the Kakogawa App.²⁷⁵ The system is credited for reducing crime and making "residents feel more secure about their loved ones," particularly children and the elderly.²⁷⁶

As Professor Deguchi notes, the approach towards smart city development moving forward must be led by citizens or, at the very least, be based on citizen participation "in order to be compatible with the principle of the people-centric society."²⁷⁷ As land is so intrinsically tied to people and community,²⁷⁸ any future creation of a people-centric society needs to put more power in the hands of residents, both in participation forums and legally.²⁷⁹ For example, in urban environmental matters, public participation does not guarantee a procedural right nor the ability to challenge administrative decisions in urban development.²⁸⁰ Additionally, defects in the process, while softly granted in legislation such as the

270. *Id.*

271. *See id.* (discussing how electronic tracing has evoked fears of Orwellian overreach in Japan).

272. *See* Tim Hornyak, *Why Japan Is Building Smart Cities from Scratch*, 608 NATURE S33 (Aug. 18, 2022), <https://www.nature.com/articles/d41586-022-02218-5> (detailing how Fujisawa Smart Town uses facial recognition cameras to detect elderly people falling and using assistive devices).

273. *See* Dooley & Ueno, *supra* note 269 (citing some localities' use of QR codes as opposed to tracking devices or cameras).

274. *See* Hornyak, *supra* note 272, at S33 (citing claim by Panasonic that facial recognition is used only with residents' consent).

275. Japan Brandvoice, *supra* note 223.

276. *See id.* (noting that Kakogawa's crime rate fell below the average for Hyogo Prefecture for first time, despite previously having third-worst rate in prefecture).

277. Deguchi, *supra* note 211, at 56.

278. *See generally* Li-Pei Peng, *Understanding Human-Nature Connections Through Landscape Socialization*, 17 INT'L J. OF ENV'T RSCH. AND PUB. HEALTH 7593 (2021) (discussing the relationship between people and land).

279. *See generally* Julie Newton, *Wellbeing: Contributions Towards Practical Strategies to Promote Social Integration*, ROYAL TROPICAL INST. (2010), <http://www.un.org/esa/socdev/egms/docs/2009/Ghana/inclusive-society.pdf> (promoting social inclusion and participation creates more inclusive society).

280. In European nations, citizens participating in environmental impact assessments (EIA) are guaranteed a procedural right to challenge decisions and demand reviews, whereas this is not the case legally in Japan because the EIA process is only seen as a data source for better decision-making in the future. *See* Okubo, *supra* note 263, at 498.

City Planning Act, are not regarded as valid legal claims.²⁸¹

Moreover, environmental cases, for example, are often dismissed for failure to present a legally protected interest because Japanese law tends to only recognize interests that are “concrete and individualistic.”²⁸² Residents of the Tokyo neighborhood Shimokitazawa asserted to the Tokyo District Court that the value of the city to its community and its cultural identity should in fact be a legally protected interest—despite it being more general than individualistic.²⁸³ While the court ruled that the conflict needed to be addressed through private-public participation channels,²⁸⁴ the case raised important questions about “the right to the city”²⁸⁵ and the importance of the role that citizens should have in urban decision-making.

When the governmental structure and urban development processes are known to feature heavy community involvement, the legal framework supporting the formal processes should include mechanisms to support local initiatives. Especially when smart cities are still quite technocratic,²⁸⁶ it is important to make community participation more accessible. If Society 5.0 wishes to be human centered at its core, there needs to be processes and legal frameworks supporting humans.

V. DIGITAL RIGHTS IN THE DIGITAL CITY

In South Korea and Japan alike, national smart city policies are eager to embrace new “human-oriented” paradigms of smart cities that prioritize residents’ rights and happiness over pure technological focus. However, preexisting development models reliant on technocratic, corporate, and state direction pose barriers towards achieving accessible and equitable smart cities in both countries—and their solutions exist on the domestic and international sphere.

A. Human-Centered Smart Cities: Combining the Digital and the Human

Human-centered smart cities would benefit from a development model more akin to the Japanese “co-creation” ethos rather than the export-focused “city in a box.” While cities such as Songdo benefit individually from favorable regulations in terms of attracting foreign direct investment, rapid expansion, and cutting-edge technologies, the cost is passed onto the residents, which effectively enables these cities to be accessible to only society’s affluent.²⁸⁷

281. *Id.*

282. *Id.*

283. See Rinpei Miura, *Rethinking Gentrification and the Right to the City: The Process and Effect of the Urban Social Movement Against Redevelopment in Tokyo*, 30 INT’L J. JAPANESE SOCIO. 64, 75 (2021) (stating that rights should be shared by landowners, residents, and visitors alike).

284. *Id.* at 76.

285. See *infra* Part V for a detailed discussion on the right to the city and how it relates to smart cities.

286. See Bibri, *supra* note 20, at 11 (stating technocratic governance is inherent in smart urbanism).

287. See Shwayri, *supra* note 71, at 53 (discussing how special guidelines in Free Economic Zone led to higher planning costs and “significant price contracts” that made Songdo accessible only to the “affluent class”).

Localization also needs to be considered, including having awareness for the individualized limitations and challenges of implementing smart city technology in some locales, particularly where digital literacy or access to internet and digital devices is limited.²⁸⁸ Implementing a top-down, “one size fits all” approach exacerbates the “digital divide” and existing socioeconomic inequalities most affecting women, children, elderly, refugees, Indigenous communities, urban and rural poor, and other marginalized communities.²⁸⁹ A major step in making smart cities more inclusive and people-centered would be to adopt a co-creation model that centers around local solutions and involves all stakeholders to minimize risks. There must also be efforts towards preservation of vernacular features, cultures, and histories. As Professor David Harvey writes, the city that residents want “cannot be divorced from that of what kind of social ties, relationship to nature, lifestyles, technologies and aesthetic values [they] desire.”²⁹⁰

Technocratic governance in smart cities oftentimes yields urban societies still rampant with inequality, fueled by unequal power relations, and lacking accessibility to information services and opportunities.²⁹¹ Where billions of dollars can be invested in large smart city projects, many times the results only cater to an elite minority and fail to address real socioeconomic issues that the general public faces.²⁹² Top-down city models have also been shown to undermine democratic mechanisms at the local and community level, hindering resident participation,²⁹³ and techno-optimistic reliance on progress and technology strip away the vernacular, history, and individualities of the city, creating a distorted vision of the “reality of the city”²⁹⁴—but what is the reality of the smart city, and who is it actually created for? Moreover, how can residents have rights in the digital city?

B. Looking Towards the Future: What Makes a Human Centered Smart City?

One of the most important steps in achieving the human-centered smart city is effective digital governance that protects citizens’ rights in the digital city.²⁹⁵

288. See U.N. HABITAT, CENTERING PEOPLE IN SMART CITIES: A PLAYBOOK FOR LOCAL AND REGIONAL GOVERNMENTS 37 (2021), https://unhabitat.org/sites/default/files/2021/11/centering_people_in_smart_cities.pdf (noting digital capacity is built by helping residents become competent digital citizens).

289. See *id.* (discussing how digital divide amplifies inequalities and affects vulnerable marginalized groups).

290. David Harvey, *The Right to the City*, 53 NEW LEFT REV. 23, 23 (2008).

291. See Bibri, *supra* note 20, at 11 (describing how technocratic smart-city governance can result in unequal power relations and gaps in access to information services and opportunities).

292. See Martha F. Davis, *Get Smart: Human Rights and Urban Intelligence*, 47 FORDHAM URB. L. J. 971, 972 (2020) (presenting smart cities in India as pertinent example of top-down smart city development wherein smart cities benefit business and elite actors).

293. See *id.* at 973–74 (citing Professor Diganta Das’ arguments that top-down smart city models in India crowd out local level actors and undermine democratic processes to innovation and policymaking).

294. See Bibri, *supra* note 20, at 11 (critiquing smart urbanism as distorting individuality of cities in favor of its own definition of “quality of life”).

295. See UNITED NATIONS DEPT. OF ECON. & SOC. AFFS., E-GOVERNMENT SURVEY 2022: THE FUTURE OF DIGITAL GOVERNMENT 8 (2022),

Participatory channels have become increasingly important to citizens in light of growing data collection and surveillance that is part of the everyday urban experience,²⁹⁶ and some scholars have suggested the application of principles featured in “Human Rights Cities” to smart cities, including community governance participation, transparency, and accountability.²⁹⁷

Thus, one pathway to creating human-oriented smart cities can be found in other urban paradigms, such as the Human Rights City, by addressing potential human rights risks posed by ubiquitous technologies and implementing governance mechanisms to combat them. In fact, Park Son-Woo, a former mayor of Seoul from 2011 to 2020, aimed to embrace both elements from human rights cities and smart cities in his vision for Seoul and pursue a “people-centered welfare-focused agenda.”²⁹⁸ For example, Mayor Park saw governance and openness as critical bases for a successful smart city and worked towards providing mechanisms for citizen-accessible open-source data and community governance.²⁹⁹

1. The Micro Factors: Citizen Participation and Building Accessible Cities

Community contributions and crowdsourcing mechanisms have proven successful in communities such as Kashiwa-no-ha,³⁰⁰ and help fill existing gaps in urban development through actual resident feedback. This is particularly important when considering that the tech community and technocratic government entities administering smart cities are usually rather insular and homogenous, leaving vulnerable and minority populations at risk of exclusion.³⁰¹ For example, soliciting user feedback on infrastructure and fostering user-generated data logging through mobile apps has helped improve urban accessibility for disabled residents.³⁰² Still, this is no replacement for including diverse experiences and voices in the actual decision-making processes for smart city development and de-emphasizing the

<https://desapublications.un.org/sites/default/files/publications/2022-09/Web%20version%20E-Government%202022.pdf> (stating digital government tools are essential to help tackle global crises).

296. See Davis, *supra* note 292, at 982 (stating how smart city residents have become increasingly aware that surveillance and data are an unsuitable substitute for traditional participatory channels).

297. See *id.* at 979 (describing the values of participatory democracy and transparency reflected in the “Gwangju Guiding Principles for a Human Rights City” as applicable to implementing smart cities).

298. *Id.* at 988.

299. *Id.* at 989.

300. See *supra* notes 224–34 and the accompanying text for a discussion on the successes in Kashiwa-no-ha.

301. See Charlie Sammonds, *Smart Cities and Accessibility*, MEDIUM (Jun. 19, 2019), <https://medium.com/primalbase/smart-cities-and-accessibility-b132658c9678> (discussing how tech community is often noted for its “damagingly homogenous” makeup of mostly able white men, which inhibits diversity of perspective and lived experience in smart city development, leaving potential for exclusion of at-risk populations).

302. See *id.* (noting 60% of surveyed smart city experts felt that smart cities were “failing disabled people,” and greater involvement of disabled people and disability experts is necessary to bridge knowledge gaps).

influence of corporate entities.

In 2020, UN-Habitat launched their flagship “People-Centered Smart Cities” program, which aims to provide frameworks to local governance fostering digital spaces that are inclusive, equitable, and effectively governed.³⁰³ UN-Habitat also partnered with the Cities Coalition for Digital Rights (CCDR) in 2022 to develop a guide for local governments providing guidance on improving digital human rights in cities.³⁰⁴ The guide highlights efforts in other international municipal and national governments at protecting citizens’ digital rights, such as the prohibition of facial recognition technology in public spaces in Portland, Oregon, and Spain’s Charter of Digital Rights establishing that all public policy pertaining to the digital world would take digital rights into account.³⁰⁵

While both South Korea and Japan rank very high on the U.N. E-Government Survey, reflecting their successes in improving the accessibility of ICT to the public and their digital infrastructure as a whole,³⁰⁶ it is also important for them to adopt targeted policies and legislation addressing their citizens’ digital rights in the digital city to the extent that is outlined by the CCDR. There are no South Korean or Japanese cities that are members of the CCDR, but both countries are involved in regional and international partnerships that equally promote the equitable use of emerging technologies in smart cities.³⁰⁷ South Korea is the chair of the World Smart Sustainable Cities Organization (WeGO),³⁰⁸ and Japan has previously worked with the ASEAN Smart Cities Network.³⁰⁹ Increasing international cooperation and recognition of digital human rights is a hopeful step towards creating truly people-centered smart cities.

Smart cities cannot erode citizens’ democratic rights and should guarantee residents a meaningful choice by granting a true ability to “opt-in” to selected features. Most importantly, smart cities must create an urban space that is transparent and consent-based.³¹⁰ Developers can also shift focus to technologies that are less

303. *See generally* U.N. HABITAT & CITIES COALITION FOR DIGITAL RIGHTS, MAINSTREAMING HUMAN RIGHTS IN THE DIGITAL TRANSFORMATION OF CITIES: A GUIDE FOR LOCAL GOVERNMENTS 8 (2022), <https://unhabitat.org/mainstreaming-human-rights-in-the-digital-transformation-of-cities-a-guide-for-local-governments> (stating digital technologies have potential to serve public if effectively governed).

304. *Id.* at 5.

305. *Id.* at 13.

306. *See* UNITED NATIONS DEPT. OF ECON. & SOC. AFFS., *supra* note 296 (showing Japan and South Korea rank among 15 countries in the “very high” category of e-government development, measuring online services, telecommunications infrastructure, and human capital).

307. *See* THE WORLD BANK, COUNTRY CLIMATE & DEVELOPMENT REPORTS, <https://www.worldbank.org/en/publication/country-climate-development-reports> (last visited Dec. 1, 2023) (stating that reporting countries are China, Indonesia, Philippines, and Vietnam).

308. WEGO, <https://we-go.org/about-us-overview> (last accessed Dec. 28, 2022) (stating WeGo was founded by 50 member cities including cities in South Korea in 2010).

309. *Parliamentary Vice-Minister Satomi Attends the 4th ASEAN-Japan Smart Cities Network High Level Meeting*, MINISTRY OF ECONOMY, TRADE AND INDUSTRY (Dec. 9, 2022), https://www.meti.go.jp/english/press/2022/1209_005.html.

310. *See* Givens & Lam, *supra* note 93, at 870 (highlighting importance of citizens’ choice in service providers that may access personal data, since expecting residents to move to another

intrusive and/or are not reliant on biometric data, such as abandoning facial recognition and personal device data in favor of more anonymous sensor technology.³¹¹ Furthermore, many smart city projects globally already implement various public participation platforms that encourage citizen's involvement in voting, living labs, feedback portals, or even management of public data.³¹²

2. The Macro Factors: Data Privacy and Sustainability

Data privacy law frameworks are another incredibly vital consideration for smart city development. The E.U.'s General Data Protection Regulation is regarded as one of the most robust privacy frameworks in the world.³¹³ Many countries, including Japan and South Korea follow in its footsteps in terms of scope and stringency through the passage of their own respective legal frameworks.³¹⁴ However, in jurisdictions where this is not the case, governments need to address developing a privacy framework prior to installing data-heavy technologies into citizen's daily lives.

The Thu Tiem Eco Smart City in Vietnam is an example of introducing data-heavy technology without first developing a robust privacy framework. South Korean super-conglomerate Lotte is the developer and it plans to make use of all the usual ubiquitous technology featured in smart cities.³¹⁵ While plans for the development were announced in the fall of 2022, Vietnam issued its first comprehensive data privacy law in April 2023.³¹⁶ Though this is undoubtedly a good development, this story should also raise awareness of the potential risks that can arise in these situations, particularly where it is a corporate giant from a rather wealthy economy aiming to build a multi-million dollar smart city in a developing country. The plan to develop Thu Thiem Eco Smart City without a way to ensure citizen's privacy again echoes the idealist, high modernist approach of issuing a universal prescription to urban maladies in the image of what those with power believe the urban space *should* be.³¹⁷

Finally, considering the inextricable connection of sustainability-oriented and

jurisdiction due to lack of available options is unreasonable).

311. *Id.* at 842–43.

312. U.N. HABITAT & CITIES COALITION FOR DIGITAL RIGHTS, *supra* note 303, at 63.

313. Matt Burgess, *What Is GDPR? The Summary Guide to GDPR Compliance in the UK*, WIRED (Mar. 24, 2020, 4:30 PM), <https://www.wired.co.uk/article/what-is-gdpr-uk-eu-legislation-compliance-summary-fines-2018>.

314. Dan Simmons, *17 Countries with GDPR-Like Data Privacy Laws*, COMFORTE BLOG (Jan. 13, 2022), <https://insights.comforte.com/countries-with-gdpr-like-data-privacy-laws>.

315. See Hye-Jin Byun, *Lotte Group to Build Eco Smart City, Logistics Center in Vietnam*, THE KOREA HERALD, <https://www.koreaherald.com/view.php?ud=20220904000119> (last updated Sept. 4, 2022) (discussing plans by Lotte Group to build smart city in Vietnam).

316. Charmian Aw, *Vietnam Issues Much-Awaited Landmark Data Protection Law*, SQUIRE PATTON BOGGS: PRIVACY WORLD (Apr. 18, 2023), <https://www.privacyworld.blog/2023/04/vietnam-issues-much-awaited-landmark-data-protection-law>.

317. See Ferreira et al., *supra* note 94, at 1 (arguing that the smart city has been shaped by “colonialist imagination” which depicts digital technologies as politically neutral, and intrinsically desirable).

smart city policies, smart cities must go beyond mere superficial attempts at green technology and practice. Both the global and local ecosystems lie in precarious balance, and the cities of the future need to direct their efforts towards sustainability rather than profit-maximization. Similarly, the sustainability of new master-planned cities needs to be addressed by governments.

Initiatives by private development firms to build new sustainable smart cities in response to climate change is of course preferable to apathy. For example, Japanese development firm N-Ark plans to construct a new “floating” smart city, Dōgen City, in response to some of Japan’s most pressing issues—healthcare, climate change, and natural disaster resiliency.³¹⁸ Dōgen City is envisioned to be a completely self-sustainable, “smart healthcare floating city” home to 10,000 new residents—including climate refugees.³¹⁹ While utilizing smart city technologies in urban spaces in light of climate change is absolutely critical, there must also be appropriate oversight and regulation to ensure that these resources and developments become accessible to everyone—especially vulnerable populations. Looking to Dōgen City, would the 10,000 new residents in this futuristic, sustainable community only be the ultra-rich who can afford to escape the growing dangers presented by climate change? How would the Japanese government enable climate refugees to access this opportunity? Sustainable cities of the future will require massive cooperation between the private and public sectors.

Instead of constructing entirely new developments from scratch, governments could also focus on urban regeneration of existing cities through smart and sustainable technologies, as already seen in several Japanese smart city initiatives. These efforts should have a particular sensitivity to keeping these urban areas accessible to their residents and preventing alienation of certain populations due to economic or digital literacy barriers. This inclusive model of urbanization, known as “urban organic renewal,” aims to minimize impact on residents, maintain affordable housing options, and upgrading existing structures.³²⁰ Focusing on regeneration, rather than the development of new expensive and grandiose cities, is inherently more sustainable and would enable many more residents to benefit from smart and eco-cities.

VI. CONCLUSION

For their proponents, smart cities are the next evolution of the techno-optimistic and rational constructions of centuries past, using modern technology to create urban spaces that are efficient, resilient, and sustainable.³²¹ To their critics, smart cities are

318. Dale Arasa, *Dogen City: Japan’s Floating Smart City*, INQUIRER.NET (Aug. 1, 2023 10:40 A.M.), <https://technology.inquirer.net/126497/dogen-city-japans-floating-smart-city>.

319. *Dogen City*, N-ARK, <https://www.n-ark.jp/en/dogen-city> (last visited Dec. 1, 2023).

320. See *Shanghai Villages Blamed for Covid Outbreak Face Demolition After Lockdowns*, BLOOMBERG NEWS: CITYLAB (Oct. 23, 2022, 6:00 AM), <https://www.bloomberg.com/news/features/2022-10-23/china-s-shanghai-migrant-worker-villages-blamed-for-covid-face-demolition> (discussing use of urban organic renewal model in Shenzhen).

321. See Yarime, *supra* note 217, at 97 (discussing need for more resilient and sustainable cities via technological advanced).

an extension of elite and technocratic biopolitical dreams to control the urban populace both in physical and cyberspace.³²² For many, striking the balance between maintaining and eschewing a degree of privacy for the public good is a difficult and murky line. In light of these issues, there must be a stronger initiative towards new legislation to protect citizens' rights in the digital city. While privacy laws have been making improvements over the past decade, these protections must be made applicable to the level at which smart cities collect and use citizens' data. Most importantly, policy initiatives must be taken to ensure that the continued development of smart cities is inclusive and truly people-centered.

Japan and South Korea serve as two prime examples of smart city development, both in their successes and pitfalls. The lessons that can be learned from their technological journey can help inform the cities of the future—in building more green, equitable, resilient, and smart cities. As two powerhouse global economies in East Asia, their example is more crucial than ever with the growing proliferation of smart city initiatives throughout Southeast Asia, South Asia, and the world.

Over half the world's population live in cities, and with the growing importance of technology in urban space, securing residents' human rights in the digital space is becoming more important than ever. Urban planning is often informed by national goals and ideologies, but in the grandiose visions and sweeping dreams of creating an idealized urban future, it is easy to lose the basic essence of the city—its people. Therefore, it is vital for developers, stakeholders, and policymakers to work together in creating urban spaces of the future that are resilient, equitable, and focused on providing a better future for current and future citizens.

322. See *supra* Part I.A for discussion on the criticisms of smart cities.