



# Getting Smart About Smart Cities

## Rights-Based Municipal Technology in the Indo-Pacific

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### *EXECUTIVE SUMMARY*

Imagine a world in which cars alert drivers when pedestrians will take longer to cross the street because of disabilities, sidewalks sense and automatically melt snow, and traffic signals clear the way for first responders to arrive at the scene of an emergency more quickly. These kinds of technological capabilities already exist, and some “smart cities” around the world have begun putting them to use.<sup>1</sup>

A city with comprehensive 5G network coverage and abundant electric vehicle charging stations may be modern and sustainable, but that does not make it smart. What makes a city “smart” is when the 5G network connects sensors monitoring the city’s utilities, infrastructure, and services and this information is collected and used in real time to improve the efficiency and quality of urban life.<sup>2</sup> Think of the contrast between a home with a Wi-Fi network used solely for browsing the internet and a home where the TV, refrigerator, air conditioning, and security system all communicate over Wi-Fi to optimize the homeowner’s experience based on his or her habits and patterns.

But this convenience and efficiency can present significant problems. For some, the mention of smart cities conjures excitement over the endless possibilities of the future of urban living. For others, it triggers apprehension over a framework rife with potential security vulnerabilities, privacy concerns, and governance challenges—dystopia manifest. There is a thin, fragile line between using information tools to improve people’s lives through the creative application of data and using the same tools to curtail the civil liberties of the populace in order to gain control over it. The fact that the same technology can be used for either purpose further complicates the issue.

This challenge of the power of information is especially apparent in the Indo-Pacific region, which is a focal point of the competition between liberal democracies and authoritarian governments—most prominently China—over setting digital norms and standards for new technology. Smart cities sit at the crux of this competition because they encompass so many aspects of it, including data governance, surveillance, human rights and civil liberties, privacy, and transparency. As the technologies and systems that enable smart cities begin to proliferate, the United States must lead a global effort to ensure these technologies are responsibly used in a way that supports protection of civil liberties and aligns with liberal principles.

This policy brief examines some of the systemic vulnerabilities that facilitate misuse of smart city technology by governments and provides snapshots of cities across the Indo-Pacific that have managed these vulnerabilities to successfully implement smart technology within the precepts of a liberal digital order. It then

1. Stefano Kotsonis and Meghna Chakrabarti, interview with Latanya Byrd, Angie Schmitt, and Sue Bai, “In ‘Right Of Way,’ Angie Schmitt On The Rise Of Pedestrian Deaths,” On Point, WBUR, August 3, 2021, <https://www.wbur.org/onpoint/2021/08/03/in-right-of-way-angie-schmitt-explains-the-rise-of-us-pedestrian-deaths>.

2. Jonathan Woetzel, Jaana Remes, Brodie Boland, Katrina Lv, Suveer Sinha, Gernot Strube, John Means, Jonathan Law, Andres Cadena, and Valerie von der Tann, “Smart cities: Digital solutions for a more livable future” (McKinsey Global Institute, June 2018), <https://www.mckinsey.com/business-functions/operations/our-insights/smart-cities-digital-solutions-for-a-more-livable-future>.



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offers guiding principles for policymakers in Washington to further facilitate the growth of responsible smart city development in the Indo-Pacific. More smart cities are coming, and those that are already here will continue to grow more technologically advanced. What that means for the state of Indo-Pacific digital governance in five, 10, and 50 years depends on the foundation laid by policymakers today while the concept of smart cities is still new.

### **SECURING A HUMAN RIGHTS-BASED APPROACH TO SMART CITY IMPLEMENTATION**

The potential benefits of smart cities to those who live in them are immense, but so are the potential costs. Smart cities are better able to understand and predict patterns of human behavior as the scope and complexity of the data collected increase. Therefore, with the right tools, better data can translate to safer, cleaner, more efficient cities. While these comprehensive datasets are essential to unlocking the full potential benefits of smart cities, they also can leave observed citizens vulnerable to exploitation without proper safeguards. Consequently, it is important from a human rights perspective for cities implementing smart technology to eschew certain practices that lead to illiberal pitfalls. Admittedly, the countries that will most effectively walk this tightrope have already chosen to adopt liberal norms, laws, and regulations in other governance contexts. Some countries will seek to use smart city technology to control their populations and will have no interest in protecting individual liberty and privacy. Still, there is utility in promoting, spreading, and showcasing the way that liberal countries deliberately sidestep these pitfalls. The concept of smart cities is still relatively new. By normalizing specific decisions in the smart city design process that drive toward human rights-attentive outcomes, democracies can significantly influence the formation and adoption of standards in the international community.

#### ***Pitfall 1: Poor Privacy Protection***

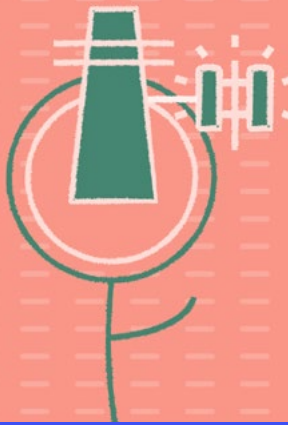
There are inherent privacy concerns with every smart city project. For smart cities to work effectively, they must employ many sensors to capture a large amount of data. Not all of these sensors are built to track data about people, but when they do, individual privacy can fall by the wayside. The absence of control over one's own anonymity is exacerbated when systems employ particularly invasive sensors, such as the use of facial and body language recognition technology to reduce or even predict crime by monitoring everyone's movements within a city. The problem can persist even in systems that are unrelated to public security and where the surveillance is less overt, such as traffic optimization. The dangers of poor privacy protection range from bad actors stealing personal data to rulers propping up an omniscient surveillance state. It is essential to protect the privacy of individuals through anonymizing and safely handling data when they are recorded, stored, and used. Still, while smart city developers are able to make important choices that protect the privacy of citizens, true protection is contingent upon a regulatory environment at the national level that enforces basic privacy standards.

Japanese authorities have taken careful steps to protect individual privacy in Aizuwakamatsu, a smart city in Fukushima Prefecture. In the aftermath of the 2011 Tohoku earthquake and tsunami, digital tools were an essential path forward for cities in the region. The elements of the smart city ecosystem in these cities are largely geared toward weather monitoring and disaster prevention, and in Aizuwakamatsu, the parts that log information about residents are opt-in only.<sup>3</sup> Even after opting in, residents still control which kinds of data are shared with the system.<sup>4</sup> This approach is calibrated to the types of smart city projects relevant to



3. "Accenture Innovation Center Fukushima," Accenture Japan, <https://www.accenture.com/jp-ja/about/accenture-innovation-center-fukushima-en>.

4. Rina Chandran, "Japanese smart city offers residents quake, privacy protection," Reuters, March 8, 2021, <https://www.reuters.com/article/us-japan-smartcities-data-trfn/japanese-smart-city-offers-residents-quake-privacy-protection-idUSKBN2B00WG>.



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the city's unique disaster-related needs. Therefore, this specific approach may not be applicable to all other smart cities, but it is still a good example of the degree to which quality of life improvement through digital means is still possible while protecting individual privacy.

### *Pitfall 2: Security Threats and Data Governance Issues*

Because of the size and nature of datasets associated with them, smart city projects and infrastructure are natural targets for hackers and adversaries.<sup>5</sup> Strong information security practices are essential to preventing smart cities from becoming major national security vulnerabilities. The more integrated a smart city becomes, the greater the danger that a disabling cyberattack could act as a devastating kill-switch for the entire city or that a hacker could seize a massive amount of data for nefarious purposes in one fell swoop.

Strong information security starts with choosing a trusted vendor. Recently, the Taipei Smart City Project Management Office began following a policy of avoiding Chinese equipment except in unavoidable cases of little consequence, and to rely instead on more trusted domestic technology.<sup>6</sup> This is especially prudent given China's sweeping security laws, which provide no means for Chinese companies to push back against requests from Beijing to assist state security organs.<sup>7</sup> However, the reality is that most countries do not have the technological know-how or resources to domestically produce their own smart city-enabling technology. Just like with 5G or cloud storage, in cases when foreign vendors are the only option, it is essential to ensure the vendor operates within a regulatory environment that has ethical data governance practices. Handing leverage or control over one's population's data to a foreign security apparatus could be considered both a violation of an individual's privacy as well as a national security threat. Still, many less affluent countries know the risks but, due to budgetary constraints, are choosing between unsafe technology or none at all. In these cases, the challenge for U.S. policymakers is how to give them better options.

### *Pitfall 3: Lack of Transparency*

Without transparency in smart city projects, there can be no trust. And without trust, the community cannot be certain that a smart city project is being implemented in a manner that protects the rights of citizens. As demonstrated by the way that Chinese authorities use smart city technology in Xinjiang to enforce oppressive policies with previously unthinkable efficiency against non-Han Muslim minorities, the consequences of these kinds of projects can be dire.<sup>8</sup> Conversely, it inspires confidence among the populace when a city council or private-sector developer proactively offers detailed, concrete information. However, in countries where citizens have low levels of trust in the government, building confidence in new technologies alone will be ineffective without also attempting to build more trust and transparency in the government overall. Ultimately, greater confidence in the process of smart city development means that people will be more interested in using services enabled by the smart city technology.

The Australian city of Greater Geelong is a prime example of what incorporating trust-building measures into growth as a smart city can look like. Before the city council approved the strategic framework and action plan for the initial

5. John Breeden II, "The Dangers in Smart Cities," NextGov, September 4, 2019, <https://www.nextgov.com/ideas/2019/09/dangers-smart-cities/159617/>.

6. James Kynge, Valerie Hopkins, Helen Warrell, and Kathrin Hille, "Exporting Chinese surveillance: the security risks of 'smart cities,'" Financial Times, June 9, 2021, <https://www.ft.com/content/76fdac7c-7076-47a4-bcb0-7e75af0aadab>.

7. Samantha Hoffman and Elsa Kania, "Huawei and the ambiguity of China's intelligence and counter-espionage laws," The Strategist (ASPI), September 13, 2018, <https://www.aspi.org.au/huawei-and-the-ambiguity-of-chinas-intelligence-and-counter-espionage-laws/>.

8. Katherine Atha, Jason Callahan, John Chen, Jessica Drun, Ed Francis, Kieran Green, Dr. Brian Lafferty, Joe McReynolds, Dr. James Mulvenon, Benjamin Rosen, and Emily Walz, "China's Smart Cities Development" (Research report prepared on behalf of the U.S.-China Economic and Security Review Commission, January 2020), 15-16, [https://www.uscc.gov/sites/default/files/China\\_Smart\\_Cities\\_Development.pdf](https://www.uscc.gov/sites/default/files/China_Smart_Cities_Development.pdf).





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set of proposed smart city initiatives, there was a two-month public exhibition during which the council solicited community feedback.<sup>9</sup> Based on the feedback it received, the council adopted seven guiding principles for the smart city project, which included a commitment to complete transparency. As part of that commitment, the city pledged to clearly explain each project's tangible benefits and data protection policies.<sup>10</sup> This is an excellent way to secure the trust of the community and inspire confidence in new projects.

### RECOMMENDATIONS

At a time when Beijing is seeking to enable authoritarian practices through the exportation of dual-use technology, there is a need to facilitate the development of good digital governance practices in countries with nascent digital ecosystems.<sup>11</sup> A well-rounded U.S. Indo-Pacific digital strategy cannot ignore the growing importance of smart cities in the 21st century and should encourage American stakeholders to collaborate with emerging smart city developers in the region. The following principles and policy recommendations provide a framework for the smart city elements of such a strategy.

*Principle 1: Investing in smart city technology in the United States will build the domestic know-how and good models necessary for Washington to better assist other countries with their own smart cities.*

- **Leverage current infrastructure tailwinds to close the gap at home.** The White House should develop a unified strategy with input from the Department of Transportation, National Science Foundation, Environmental Protection Agency, and Department of Housing and Urban Development to incentivize smart city development across the United States through grants and competitions. American smart city development lags far behind other digitally advanced nations.<sup>12</sup> Facilitating U.S. involvement in contributing to a liberal vision of Indo-Pacific digital governance is far from the only benefit of implementing this technology in the United States—these projects will first and foremost benefit American cities and their citizens. This is especially relevant now as the Biden administration has prioritized revitalizing infrastructure.
- **Lead by example.** Successes in domestic smart city development build local expertise and provide models from which other countries can glean best practices. First, to truly lead by example, the United States needs stronger privacy and data governance legislation that will ensure responsible use of smart city technology at home.<sup>13</sup> Members of the Congressional Smart Cities Caucus could work together to lead that effort on the Hill. Once American smart city projects mature, the Department of State should organize international delegations to the United States with the assistance of the Department of Transportation and with private-sector representation facilitated by regional U.S. Chambers of Commerce. Not all nations in the target audience have the same circumstances or governance model as the United States, but there will still be elements of the best practices that can be useful in the unique situations of other countries.

9. "Australian city commits to four-year smart city action plan," SmartCitiesWorld, March 24, 2021, <https://www.smartcitiesworld.net/news/news/australian-city-commits-to-four-year-smart-city-action-plan-6230>.

10. City of Greater Geelong, "Smart City Strategic Framework Implementation & Action Plan," February 2021, 4, <https://www.geelongaustralia.com.au/common/Public/Documents/8d8eeb11beec0ef-attachment4-smartcityimplementationandactionplan-march2021.pdf>.

11. Joshua Fitt, "Stemming the Flow: The United States Needs a Strategy to Address China's Strategic Exportation of Digital Authoritarianism," Georgetown Journal of International Affairs (February 25, 2021), <https://gija.georgetown.edu/2021/02/25/stemming-the-flow-the-united-states-needs-a-strategy-to-address-chinas-strategic-exportation-of-digital-authoritarianism/>.

12. Kristin Musulin, "Report card: US cities far from 'smart' status," Smart Cities Dive, September 13, 2019, <https://www.smartcitiesdive.com/news/report-card-us-cities-far-from-smart-status/562850/>; and "Leading Cities Rating, Powered by Bright Cities, 2019 U.S. Edition Preview" (Bright Cities, September 2019), [https://leadingcities2014.files.wordpress.com/2019/09/smart-city-rating-system\\_free-report.pdf](https://leadingcities2014.files.wordpress.com/2019/09/smart-city-rating-system_free-report.pdf).

13. For more on the gaps in the current regulatory environment, see Thorin Klosowski, "The State of Consumer Data Privacy Laws in the US (And Why It Matters)," New York Times Wirecutter, September 6, 2021, <https://www.nytimes.com/wirecutter/blog/state-of-privacy-laws-in-us/>.





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*Principle 2: Increasing engagement on smart cities within existing international dialogues among allies and partners—such as with the Association of Southeast Asian Nations (ASEAN) and the Quad (the United States, Australia, India, and Japan)—is an efficient and effective way to boost U.S. influence over the issue.*

- **Commit to building out the U.S.-ASEAN Smart Cities Partnership (USASCP).** Seven months after the launch of the ASEAN Smart Cities Network (ASCN), then-Vice President Mike Pence announced the creation of the USASCP at the November 2018 U.S.-ASEAN Summit.<sup>14</sup> The USASCP is Washington's much-needed vehicle for spurring closer involvement with the ASCN, but it has not grown much over the past three years. To commit to achieving the full potential of the USASCP, Washington should increase the frequency and profile of the informational workshops between executive branch agencies and their ASEAN counterparts, supplement the initial \$10 million investment promised for USASCP programs in 2018, and follow through on implementing the "Smart Sisters" sister city program to facilitate greater collaboration between pairs of U.S. and ASEAN smart cities.<sup>15</sup>
- **Leverage the growing strength of the Quad for Indo-Pacific smart city development.** U.S. representatives should start by raising the topic of smart cities in the Indo-Pacific at meetings of the Quad Critical and Emerging Technology Working Group. Then, once the global COVID-19 pandemic has receded, the Quad countries should work together on several Indian smart city projects. Specifically, the Quad would be well positioned to contribute hardware and software components, innovative solutions to urban challenges, and recommendations about creating a regulatory environment conducive to good digital governance. While it is likely impossible to reach Prime Minister Narendra Modi's 2015 goal of developing 100 Indian smart cities by 2023 due to the slow progress to date, the countries would be gaining valuable experience working together and further refining best practices through the projects in India.<sup>16</sup> The Quad countries should then identify and begin to work together on incomplete smart city projects in strategically important non-Quad countries.

*Principle 3: Creating new international linkages will foster innovation and facilitate the adoption or preservation of good governance practices.*

- **Establish a U.S.-Japan-Pacific Islands Forum smart city partnership.** Smart cities are a relatively unexplored topic among the smaller nations of the Pacific Islands Forum. While that may be in part due to small population size overall, some of the islands' capitals likely have a large enough resource base to warrant outside investment in their development into smart cities. Particularly due to the utility of smart city technology in mitigating the effects of extreme weather and climate change, Pacific Islands Forum nations may be interested in the opportunity. Because many Japanese smart cities include weather and natural disaster-related applications, Tokyo would be a natural partner in this endeavor.<sup>17</sup>
- **Facilitate broader regional engagement in smart city development from the U.S. private sector.** Outside of government-to-government partnerships, Washington should leverage the strength and influence of American companies by encouraging private-sector collaboration in Indo-Pacific smart city develop-

14. Patsy Widikuswara, "Pence Announces US-ASEAN 'Smart Cities Partnership,'" VOA News, November 15, 2018, <https://www.voanews.com/east-asia-pacific/pence-announces-us-asean-smart-cities-partnership>.

15. U.S.-ASEAN Smart Cities Partnership (usascp), "Congrats to the participants of our 1st full-scale Cybersecurity Fundamentals for Smart Cities course for the Philippines, which helps policymakers understand & address smart city cybersec challenges. We look forward to offer this course throughout the ASEAN Smart Cities Network!" June 28, 2021, 12:48 p.m., Twitter, <https://twitter.com/usascp/status/1409569332871434241>; U.S.-ASEAN Smart Cities Partnership home page, <https://www.usascp.org/home-page>; and U.S.-ASEAN Smart Cities Partnership, "Smart Sisters: City-to-City Learning and 'Twinning,'" November 4, 2019, <https://www.usascp.org/program/sisters>.

16. Priyanka Gulati, "49% of over 5,000 projects for smart cities unfinished as deadline nears," Business Standard, July 4, 2021, [https://www.business-standard.com/article/current-affairs/nearly-49-of-smart-cities-incomplete-targets-distant-as-deadlines-loom-121062500133\\_1.html](https://www.business-standard.com/article/current-affairs/nearly-49-of-smart-cities-incomplete-targets-distant-as-deadlines-loom-121062500133_1.html); and "Revitalising 'India's Smart City Mission,'" India Brand Equity Foundation Blog on IBEF.org, March 31, 2021, <https://www.ibef.org/blogs/revitalising-india-s-smart-city-mission>.

17. ASEAN-Japan Smart Cities Network, "Brochure of Japan's Solutions for Smart City," December 16, 2020, 5 and 10, [https://www.ascnjapan2020.jp/dl/solution\\_catalog.pdf](https://www.ascnjapan2020.jp/dl/solution_catalog.pdf).





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ment. One such program could organize pitch challenges where local startups with potential smart city applications compete for high-value partnerships with American companies. For smart city projects to be effective, they must address the unique needs of people in that specific city. Among other benefits, partnering with local companies would provide greater insight into those needs.

- **Support NGOs that can assist countries with developing privacy, accountability, and transparency regulations.** Washington should create funding for smart city-related work of organizations specializing in promoting rule of law, democracy, and a flourishing civil society abroad such as Freedom House or the International Center for Not-for-Profit Law. These organizations can then directly support the efforts of local activists in the Indo-Pacific by working together on transparency initiatives that hold governments accountable for their smart city plans. They can also assist local civil society in petitioning for the adoption of protective laws or, at the very least, advocate for pared-down policy frameworks that still take steps to ensure the responsible use of smart city technology.

### CONCLUSION

While the very nature of smart cities inherently poses a challenge to liberal principles of data governance, the success of some smart cities in free countries demonstrates that there is a place for the smart city concept to flourish within a democratic framework. Smart cities appear poised to transform the future of urban life over the next century. Whether that transformation is for better or for worse depends on how well the United States, allies, and partners—particularly in the Indo-Pacific—can work together to set norms around the implementation of smart city technology. The potential benefits are well worth the effort of rising to the challenge.



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