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Get Smart: Human Rights and Urban Intelligence

Martha F. Davis

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GET SMART: HUMAN RIGHTS AND URBAN INTELLIGENCE

A RESPONSE TO GIVENS & LAM

*Martha F. Davis**

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INTRODUCTION

In their Article, *Smarter Cities or Bigger Brother?*, John Wagner Givens and Debra Lam lay out a compelling case for caution in implementing urban intelligence systems, particularly smart city technologies. As they describe, even in liberal democracies like Canada, private enterprises with profit motives may push data collection efforts to a point where individual privacy interests and basic rights are compromised.¹ In authoritarian countries like China, there are even fewer curbs on the uses and abuses of these technologies. Evidence in China, for example, indicates that minority populations such as the Uyghurs are particularly targeted for surveillance and control, with little regard for the human rights implications and human toll.² These tendencies have only accelerated

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1. 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 (2020).

2. HUMAN RIGHTS WATCH, *CHINA'S ALGORITHMS OF REPRESSION* (2019); Darren Byler, *China's Hi-Tech War on Its Muslim Minority*, *GUARDIAN* (Apr. 11,

with the international effort to combat COVID-19 through data collection and contact tracing.³

While Chinese cities present the most extreme examples of smart city “horror stories,” urban technology initiatives have also been heavily criticized in India, albeit for somewhat different reasons. In 2014, it was announced that India’s Prime Minister Narendra Modi would launch the “100 Smart Cities” initiative, pledging to implement smart solutions in cities across the country.⁴ Intended as a response to rapid urban growth, the project’s stated goals are to use technology to “accommodate and resolve the problems associated with rapid urbanization.”⁵ According to experts from the University of Delhi, because of the nation’s demographics, Indian smart cities “will become a failure if they are not built up on [a] model of inclusiveness.”⁶ Yet five years into the project critics observe that billions of dollars have been invested in technologies that do little to alleviate the most pressing social problems facing the nation, including housing, poverty, and hunger.⁷ Instead, smart cities have proven to be a vehicle for elite urban dwellers and entrepreneurs to benefit, while those living at the margins in India’s ubiquitous slums experience fewer gains.⁸ One housing NGO in India pointedly labeled the initiative the “Smart Enclaves Scheme.”⁹

2019), <https://www.theguardian.com/news/2019/apr/11/china-hi-tech-war-on-muslim-minority-xinjiang-uighurs-surveillance-face-recognition> [https://perma.cc/JA9B-4C5G].

3. Simon Chandler, *How Smart Cities Are Protecting against Coronavirus but Threatening Privacy*, FORBES (Apr. 13, 2020), <https://www.forbes.com/sites/simonchandler/2020/04/13/how-smart-cities-are-protecting-against-coronavirus-but-threatening-privacy/#3c6848561cc3> [https://perma.cc/J9S3-GND6].

4. *Government to Set Up 100 Smart Cities*, TIMES INDIA (July 23, 2014, 2:20 PM), <https://timesofindia.indiatimes.com/india/Government-to-set-up-100-smart-cities/articleshow/38919516.cms> [https://perma.cc/NP7M-5TRH].

5. Poonam Sharma & Swati Rajput, *Perspectives of Smart Cities: Introduction and Overview*, in SUSTAINABLE SMART CITIES IN INDIA 1 (Poonam Sharma & Swati Rajput eds., 2017).

6. *Id.* at 8.

7. Abigail Spink, *Debating India’s Smart City Vision*, GEOGRAPHICAL (Aug. 30, 2019), <https://geographical.co.uk/places/cities/item/3355-india-smart-city> [https://perma.cc/2ETX-LLJP].

8. Russell M. Smith et al., *India’s “Smart” Cities Mission: A Preliminary Examination into India’s Newest Urban Development Policy*, 41 J. URB. AFFS. 518, 527–28 (2019) (noting that cities with a larger share of their population residing in slums were not included in the first cohort of India’s smart cities).

9. HOUS. & LAND RIGHTS NETWORK, INDIA’S SMART CITIES VISION: SMART FOR WHOM? CITIES FOR WHOM? v, 41 (2018),

The evidence from China and India demonstrates that smart technology can be harmful when not thoughtfully and ethically deployed. Ill-conceived and unplanned digitization may hurt individuals and groups, even when — as in India — the adverse effects are likely unintended, and ancillary to the stated goals of new technology to respond to the challenges of urbanization.¹⁰ According to the U.N. Special Rapporteur on Extreme Poverty, Philip Alston, when it comes to social impact, technology agendas should not be viewed as neutral interventions.¹¹ Instead, observes Alston, looking specifically at poverty-related impacts,

the digitization of welfare systems has been accompanied by deep reductions in the overall welfare budget, a narrowing of the beneficiary pool, the elimination of some services, the introduction of demanding and intrusive forms of conditionality, the pursuit of behavioural modification goals, the imposition of stronger sanctions regimes, and a complete reversal of the traditional notion that the State should be accountable to the individual.¹²

Highlighting abuses similar to those identified by Givens and Lam, Alston cautions against digital authoritarianism and urges skepticism around digitization for its own sake.¹³ Alston's skepticism was confirmed in early 2020 when a Dutch court ruled that a government-backed algorithm designed to use neighborhood data to identify cases of potential welfare fraud violated the low-income residents' human rights to privacy.¹⁴

Beyond immediate physical and dignitary harms to individuals, technology may also distort local democratic processes. Professor Diganta Das of Nanyang Technological University argues, for instance, that Indian cities following a top-down model of smart city implementation are actually crowding out community-level actors and undermining more democratic approaches to local innovation and

https://www.hlrn.org.in/documents/Smart_Cities_Report_2018.pdf
[<https://perma.cc/47YQ-C4N2>].

10. See Smith et al., *supra* note 8, at 528 (expressing surprise at apparent lack of focus on cities with more slum-dwellers, given the stated purpose of India's Smart Cities program to alleviate slums).

11. Philip Alston (Special Rapporteur on Extreme Poverty and Human Rights), *Rep. of the Special Rapporteur on Extreme Poverty and Human Rights*, ¶ 6, U.N. Doc. A/74/493 (Oct. 11, 2019).

12. *Id.* at ¶ 5.

13. *Id.* at ¶ 33.

14. Jon Henley & Robert Booth, *Welfare Surveillance System Violates Human Rights, Dutch Court Rules*, *GUARDIAN* (Feb. 5, 2020), <https://www.theguardian.com/technology/2020/feb/05/welfare-surveillance-system-violates-human-rights-dutch-court-rules> [<https://perma.cc/ZWZ2-GDD3>].

policymaking.¹⁵ These anti-democratic impacts are further exacerbated by the fact that many cities have delegated their urban technology planning and implementation to private companies that value profit over the community.¹⁶

Faced with the likelihood that market incentives will nevertheless promote the continued expansion of smart city technologies, Givens and Lam urge wealthy liberal democracies to work concertedly and in coalition to pioneer a set of good digital practices for smart cities. Citing Chinese cities as a cautionary example, they posit that these sorts of exercises in standard-setting and international peer pressure might be effective in steering the development of smart cities away from the endpoint of an Orwellian surveillance state.¹⁷

This Essay responds to Givens and Lam by suggesting that such standards already exist in widely accepted human rights norms.¹⁸ Instead of duplicating these existing norms with a new set of standards, I argue that what is missing in smart cities gone awry is the recognition that human rights standards apply to local governments as well as nation-states, and the understanding that technology agendas are not exempted from the application of human rights.

This Essay proceeds as follows. First, it explores the vibrant international movement to ensure that local governments recognize, participate in, and comply with, human rights norms. This development reflects the growing political and economic power of local governments, of which the smart cities movement is one manifestation. Importantly, the human rights charters and resolutions developed and endorsed by cities around the world

15. Diganta Das, *In Pursuit of Being Smart? A Critical Analysis of India's Smart Cities Endeavor*, 41 URB. GEOGRAPHY 55 (2019).

16. Lucien Begault & Jessika Khazrik, *Smart Cities: Dreams Capable of Becoming Nightmares*, AMNESTY INT.: TECH. & HUM. RTS. BLOG (June 28, 2019), <https://www.amnesty.org/en/latest/research/2019/06/smart-cities-dreams-capable-of-becoming-nightmares/> [<https://perma.cc/4D2T-RWX7>].

17. Givens & Lam, *supra* note 1, at 830.

18. See, e.g., *Gwangju Guiding Principles for a Human Rights City*, UCLG COMMITTEE ON SOC., INCLUSION, PARTICIPATORY DEMOCRACY & HUM. RTS. (May 17, 2014), <https://www.uclg-cisdp.org/en/activities/human-rights-cities/gwangju-guiding-principles-human-rights-cities> [<https://perma.cc/EBU9-LXVZ>]; *European Charter for the Safeguarding of Human Rights in the City*, UCLG COMMITTEE ON SOC., INCLUSION, PARTICIPATORY DEMOCRACY & HUM. RTS. (2012), <https://www.uclg-cisdp.org/en/right-to-the-city/european-charter/1> [<https://perma.cc/96B3-DU4P>].

explicitly address issues pertinent to the implementation of urban intelligence systems.¹⁹

Second, this Essay addresses the role that these widely accepted human rights norms can play in shaping good practices for implementation and use of smart city technologies. Unfortunately, it appears that in some communities, leaders have treated technology as exempt from universal human rights standards.²⁰ However, human rights standards can inform both the substance of digital protections and the processes through which technologies are considered, adopted, and tested. In particular, human rights norms regarding community participation in decision-making provide a powerful vehicle through which local residents can voice their viewpoints and concerns, while at the same time creating a platform for broader coordination and dialogue between and among cities regarding the individual and group rights implicated by technological abuses.

Finally, this Essay examines the ways in which four “human rights cities” — Barcelona, Pittsburgh, Seoul, and Vienna — have integrated human rights norms as they pursue urban intelligence initiatives. Their experiences demonstrate that applying human rights standards to technological interventions is a “smarter” approach that can yield positive results for communities.

I. HOW CITIES ARE ENGAGING WITH HUMAN RIGHTS

As a formal matter, since the inception of the modern human rights regime in the 1940s, local governments have always been expected to recognize and honor human rights.²¹ This is not only because those rights are inherent and universal, but also because nation-states are responsible for ensuring that human rights are implemented throughout their jurisdictions, at every level of government.²²

19. See *Gwangju Guiding Principles for a Human Rights City*, *supra* note 18; see also *Declaration of Cities Coalition for Digital Rights*, CITIES FOR DIGITAL RTS., <https://citiesfordigitalrights.org/#declaration> [<https://perma.cc/C89X-P5UU>] (last visited Mar. 20, 2020).

20. See generally Leila Lawlor, *Hardware, Heartware, or Nightmare: Smart-City Technology and the Concomitant Erosion of Privacy*, 3 J. COMP. URB. L. & POL. 207 (2019) (while not focusing on human rights, discussing the privacy trade-offs that some cities are prepared to make in order to enhance technological capacities).

21. For example, in proclaiming the Universal Declaration of Human Rights in 1948, the United Nations General Assembly indicated that it serves as a “common standard” for “every individual and every organ of society[.]” G.A. Res. 217 (III) A, Universal Declaration of Human Rights, at 3 (Dec. 10, 1948).

22. For example, Article 2 of the International Covenant on Civil and Political Rights states that “Each State Party to the present Covenant undertakes to respect and to ensure to all individuals within its territory and subject to its jurisdiction the

However, as the very word “international” indicates, the focus of international human rights law has primarily been on nations, with subnational governments playing a decidedly subsidiary role. National governments ratify human rights treaties, and national governments remain responsible on the world stage for implementing their treaty obligations and reporting on their progress to peer nations.²³ This arrangement has tended to foreground national human rights positions and activities and to de-emphasize the responsibility of local governments to consider human rights impacts in the context of local policy initiatives.²⁴

In the decades since the current human rights structure was created, the political and economic power of local governments has grown dramatically, with city populations increasing worldwide and urban hubs staking out their positions as centers of innovation.²⁵ Not surprisingly, urban dwellers have called on local governments — which have front line responsibilities to provide for fundamental needs such as water, sanitation, housing, and public health — to take an active role in protecting individual human rights.²⁶ In response, many local governments have affirmatively embraced human rights

rights recognized in the present Covenant.” G.A. Res. 2200 (XXI) A, International Covenant on Civil and Political Rights, art. 2 (Dec. 16, 1966).

23. *See, e.g.*, Vienna Convention on the Law of Treaties art. 2.1(a), May 23, 1969, 1155 U.N.T.S. 333 (defining a treaty as “an international agreement concluded between States in written form and governed by international law”). For an example of the reporting obligations, see International Covenant on Civil and Political Rights art. 40, Dec. 16, 1966, 999 U.N.T.S. 171 (providing that “[t]he States Parties to the present Covenant undertake to submit reports on the measures they have adopted which give effect to the rights recognized herein and on the progress made in the enjoyment of those rights”).

24. The United Nations began taking steps to address this, and to expand its knowledge of human rights implementation at the local level when, in 2013, the General Assembly commissioned a research report from the Human Rights Advisory Committee on “the role of local government in the promotion and protection of human rights.” U.N. Human Rights Council, Rep. on Local Government and Human Rights, U.N. Doc. A/HRC/RES/24/2 (2013).

25. There is a growing literature on cities. For general background, see CHADWICK F. ALGER, *THE UN SYSTEM AND CITIES IN GLOBAL GOVERNANCE* (2014); BENJAMIN BARBER, *IF MAYORS RULED THE WORLD: DYSFUNCTIONAL NATIONS, RISING CITIES* (2013); RICHARD SCHRAGGER, *CITY POWER: URBAN GOVERNANCE IN A GLOBAL AGE* (2016).

26. *See, e.g.*, KEVIN MURRAY & SARA KOMINERS, NE. UNIV. SCH. OF LAW, *THE HUMAN RIGHT TO WATER IN THE UNITED STATES: A PRIMER FOR LAWYERS & COMMUNITY LEADERS* 13–27 (2018), <https://www.northeastern.edu/law/pdfs/academics/phrge/water-primer.pdf> [<https://perma.cc/3VGY-DMPG>] (describing local activism to secure the human right to water).

norms as key principles in local policy development.²⁷ As these local human rights implementation initiatives have progressed, international human rights institutions have recognized the critical role that local governments play in ensuring human rights realization for their residents, and have responded by exploring new and expanded roles for local governments.²⁸ Each of these developments is examined briefly below.

As a threshold matter, it is important to acknowledge the role of local activists in bringing sustained attention to educating residents and policymakers concerning local governments' responsibilities for ensuring individual rights. For example, the concept of the "Right to the City," introduced in 1968 by the French philosopher and sociologist Henri Lefebvre, has galvanized activists concerned about equitable allocations of urban spaces and opportunities.²⁹ The Right to the City Alliance is one example of a grassroots advocacy organization focused on developing an urban human rights agenda.³⁰ Similarly, the International Alliance of Inhabitants works globally with urban activists to promote a human right to housing.³¹ Closely allied with these efforts are activists working locally, often alongside city government, to implement human rights norms through the Human Rights City movement. Examples include York Human Rights City,³² the Pittsburgh Human Rights City Alliance,³³ and the

27. See generally STEPHEN P. MARKS & KATHLEEN A. MODROWSKI, *HUMAN RIGHTS CITIES: CIVIC ENGAGEMENT FOR SOCIETAL DEVELOPMENT* (2008).

28. See, e.g., U.N. Human Rights Council Advisory Comm., Rep. on the Role of Local Government in the Promotion and Protection of Human Rights, U.N. Doc. A/HRC/30/49, at 14–17 (2015) (describing best practices for local engagement with U.N. reporting).

29. See HENRI LEFEBVRE, *THE URBAN REVOLUTION* (Robert Bononno trans., 1970); HENRI LEFEBVRE, *WRITINGS ON CITIES* (Eleonore Kaufman & Elizabeth Lebas eds. & trans., 1996).

30. RIGHT TO CITY ALLIANCE, <https://righttothecity.org/> [<https://perma.cc/RB3W-73UH>] (last visited Feb. 5, 2020).

31. *Who We Are*, INT'L ALLIANCE INHABITANTS, https://www.habitants.org/who_we_are/who_we_are [<https://perma.cc/2TSX-RS8K>] (last visited Apr. 2, 2020).

32. Paul Gready & Liz Lockey, *Rethinking Human Rights in York as a Human Rights City*, 90 POL. Q. 383 (2019); YORK: HUM. RTS. CITY, <https://www.yorkhumanrights.org/> [<https://perma.cc/Y77R-EWGW>] (last visited Feb. 5, 2020).

33. PITTSBURGH HUM. RTS. CITY ALLIANCE, http://wiki.pghrights.mayfirst.org/index.php?title=Pittsburgh_Human_Rights_City_Alliance [<https://perma.cc/24MX-TWLD>] (last visited Feb. 5, 2020).

coordinating organization, the People's Movement for Human Rights Learning (PDHRE).³⁴

Many subnational governments around the world have, at least since the 1990s, affirmatively embraced human rights norms as a standard for local governance.³⁵ The human rights standards developed and endorsed by cities include principles that could, and should, be central to smart city implementation. For instance, in the European Charter for Safeguarding Human Rights in the City, Article I, Section 1 sets out the Right to the City in terms that underscore the right of all city-dwellers to participate in city governance: "The city is a collective space belonging to all who live in it. These have the right to conditions which allow their own political, social and ecological development but at the same time accepting a commitment to solidarity."³⁶ Article IV, Section 3 of the Charter highlights the signatory cities' undertaking to ensure that civic participation is accessible even for the most vulnerable: "The signatory cities adopt active policies in support of the most vulnerable of the population, guaranteeing each one the right of participation in civic life."³⁷ Article XI of the Charter sets out the Right to Information, stating that the participating municipalities "offer free open and easy access to information. With this in mind the learning, facilitation of access to and regular updating of Information Technology skills is to be encouraged."³⁸ This European Charter, finalized in 2000, has 374 signatory municipalities.³⁹

A number of cities worldwide have gone farther, formally identifying themselves as "Human Rights Cities." While there is no

34. PEOPLE'S MOVEMENT FOR HUM. RTS. LEARNING, <https://www.pdhre.org/> [https://perma.cc/RA3M-TP4J] (last visited Feb. 5, 2020).

35. The European Charter for Safeguarding Human Rights in the City grew out of the 1998 conference "Cities for Rights" held in Barcelona. During that conference, 70 mayors endorsed a resolution on human rights in the city that built the foundation for the Charter. "Cities for Rights" International Conference, WORLD ORG. UNITED CITIES & LOC. GOV'TS (UCLG), <https://www.uclg.org/en/media/events/cities-rights-international-conference> [https://perma.cc/BMS8-RGUP] (last visited Apr. 19, 2020); *European Charter for the Safeguarding of Human Rights in the City*, *supra* note 18.

36. *European Charter for the Safeguarding of Human Rights in the City*, *supra* note 18.

37. *Id.* at Part I, art. IV(3).

38. *Id.* at Part II, art. XI(2).

39. UCLG COMM. ON SOC. INCLUSION, PARTICIPATORY DEMOCRACY & HUMAN RIGHTS, EUROPEAN CHARTER FOR THE SAFEGUARDING OF HUMAN RIGHTS IN THE CITY: LIST OF SIGNATORY CITIES (2014), [uclg-cisdp.org/sites/default/files/signatory_cities_European_Charter_2014%20%281%29.pdf](https://www.uclg-cisdp.org/sites/default/files/signatory_cities_European_Charter_2014%20%281%29.pdf) [https://perma.cc/F66X-Y64F].

official definition of a “Human Rights City,” such cities generally embrace the rights expressed in the text of the Universal Declaration of Human Rights or other international human rights instruments and commit to honoring those rights for their residents as a matter of practice.⁴⁰ Human Rights Cities also embrace the processes of human rights, striving to ensure that those most affected by local policy decisions have a voice in decision-making, and ensuring transparency and fairness in municipal policymaking.⁴¹ The dozens of human rights cities around the world convene annually in Gwangju, South Korea, for the World Human Rights Cities Forum, where they share strategies and reaffirm their human rights missions.⁴²

In 2014, the participants in the World Human Rights Cities Forum endorsed the Gwangju Guiding Principles for a Human Rights City. Like the European Charter, the human rights principles set out in the Gwangju document are pertinent to smart city implementation. Principle 4 of the Guiding Principles, for example, addresses the value of community participation in governance and provides that:

The Human Rights City upholds the values of participatory democracy, transparency and accountability; and,

The Human Rights City establishes effective accountability mechanisms ensuring rights to public information, communication, participation and decision in all stages of municipal governance including planning, policy-formulation, budgeting, implementation, monitoring and evaluation.⁴³

In addition, in Guiding Principle 7, participating municipalities undertake to ensure “human rights mainstreaming,” stating that “[t]he Human Rights City applies a human rights-based approach to

40. See, e.g., G.A. Res. 217 (III) A, *supra* note 21; Michele Grigolo, *Towards a Sociology of the Human Rights City – Focusing on Practice*, in HUMAN RIGHTS CITIES AND REGIONS: SWEDISH AND INTERNATIONAL PERSPECTIVES 11 (Martha F. Davis et al. eds., 2017).

41. See Kenneth J. Neubeck, *In the State of Becoming a Human Rights City: The Case of Eugene, Oregon*, in HUMAN RIGHTS CITIES AND REGIONS: SWEDISH AND INTERNATIONAL PERSPECTIVES 59 (Martha F. Davis et al. eds., 2017) (describing practice of implementing human rights at the local level).

42. See, e.g., *9th Edition of World Human Rights Cities Forum of Gwangju* (WHCRF 2019), UCLG COMMITTEE ON SOC. INCLUSION, PARTICIPATORY DEMOCRACY & HUM. RTS. (Feb. 8, 2019), <https://www.uclg-https://www.uclg-cisd.org/en/news/latest-news/9th-edition-world-human-rights-cities-forum-gwangju-whrcf-2019> [https://perma.cc/S65W-SXG7] (describing 2019 Human Rights Cities forum).

43. *Gwangju Guiding Principles for a Human Rights City*, *supra* note 18.

municipal administration and governance including planning, policy-formulation, implementation, monitoring and evaluation.”⁴⁴

International governance institutions have recognized the growing interest of municipal governments in human rights norms. The United Nations Human Rights Council, for example, has taken special note of the growing political power of cities, and commissioned a targeted study to develop recommendations for expanding local governments’ engagement with international human rights bodies.⁴⁵ U.N.-Habitat, with its specific mandate to work on urban issues, has also become a focal point for strengthening the voices of cities in the United Nations.⁴⁶ Further, rather than limiting their purview to nation states, U.N. experts have often welcomed the submission of reports on local progress in implementing human rights norms.⁴⁷

In another indication of local governments’ growing significance in the international sphere, the United Nations’ Sustainable Development Goals (SDGs) — grounded in human rights norms — explicitly address the unique role of cities.⁴⁸ Specifically, SDG 11 sets out the goal of Sustainable Cities and Communities, noting that the approach to achieving this goal should be, consistent with human rights approaches, “participatory and inclusive.”⁴⁹

Leading Human Rights Cities include Barcelona, Pittsburgh, Seoul, and Vienna, among others. Barcelona is home to a Human Rights City observatory; Vienna boasts an active city-level human rights

44. *Id.*

45. Human Rights Council Res. 39/7, U.N. Doc. A/HRC/39/L.8, at 2 (Sept. 21, 2018).

46. *See, e.g.*, Michele Acuto, *Cities are Gaining Power in Global Politics — Can the UN Keep Up?*, CONVERSATION (Sept. 14, 2017, 9:17 AM), <http://theconversation.com/cities-are-gaining-power-in-global-politics-can-the-un-keep-up-83668> [<https://perma.cc/85SH-JBKS>] (describing importance of U.N.-Habitat while proposing new approaches to the role of cities in the U.N. system).

47. *See, e.g.*, GREATER LONDON AUTH., WRITTEN SUBMISSION TO THE UN SPECIAL RAPPORTEUR ON POVERTY AND HUMAN RIGHTS (2018), <https://www.ohchr.org/Documents/Issues/EPoverty/UnitedKingdom/2018/publicSubmissions/GreaterLondonAuthority.pdf> [<https://perma.cc/U6CH-P8UP>].

48. The SDGs are explicitly grounded in human rights norms. *See* G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, ¶¶ 2–3 (Sept. 25, 2015); *see also* Gillian MacNaughton & Diane Frey, *Human Rights, Decent Work, and the Sustainable Development Goals*, 47 GEO. J. INT’L L. 607, 641–46 (2015).

49. *Goal 11: Sustainable Cities and Communities*, UNITED NATIONS DEV. PROGRAMME, <https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-11-sustainable-cities-and-communities.html> [<https://perma.cc/3NU9-CFJQ>] (last visited May 29, 2020).

office; Seoul has developed two successive human rights master plans for the city; and Pittsburgh has been a leader in promoting women's human rights on the local level.⁵⁰ As discussed below, these four cities have also embraced smart city technologies, demonstrating through example that human rights and smart city initiatives need not be mutually exclusive and in fact, can be mutually reinforcing. While by no means perfect, each of these cities has taken concrete steps to bring a human focus and a participatory process to their technological initiatives consistent with their communities' human rights obligations.

II. MAKING THE CONNECTIONS BETWEEN HUMAN RIGHTS AND SMART TECHNOLOGY

Tina Reuter, an anthropologist at the University of Alabama, recently observed that “much of the current smart city agenda does not seem to acknowledge the fact that, in the end, the city is made up of humans.”⁵¹ Regardless of whether their cities are “smart,” humans inherently need compassion, dignity, and opportunities for individuality.

Yet a review of the literature on smart cities reveals that in many instances, technological initiatives have been either developed by commercial interests outside of local government or implemented in ways that reinforce existing divisions within local government.⁵²

50. MICHELE GRIGOLO, *THE HUMAN RIGHTS CITY*: NEW YORK, SAN FRANCISCO, BARCELONA 91–94 (2019) (discussing human rights implementation in Barcelona); Jackie Smith, *Responding to Globalization and Urban Conflict: Human Rights City Initiatives*, 11 *STUD. SOC. JUST.* 347, 360 (2018) (describing work of Pittsburgh Human Rights Alliance, including efforts to implement CEDAW locally); *Human Rights Office of the City of Vienna*, CITY OF VIENNA, wien.gv.at/english/social/integration/human-rights/office.html [https://perma.cc/X7LC-XEX6] (last visited Apr. 19, 2020) (describing Vienna's Human Rights Office); *Seoul's Quest to Bring Human Rights in All Parts of Citizens' Lives: Interview with the Human Rights Department of Seoul's Metropolitan Government*, UCLG COMMITTEE ON SOC., INCLUSION, PARTICIPATORY DEMOCRACY & HUM. RTS. (Jan. 16, 2019), https://www.uclg-cisdp.org/en/news/latest-news/seoul%E2%80%99s-quest-bring-human-rights-all-parts-citizens-lives-interview-human-rights [https://perma.cc/5GRY-TWQ5] (describing human rights initiatives in Seoul).

51. Tina Kempin Reuter, *Human Rights and the City: Including Marginalized Communities in Urban Development and Smart Cities*, 18 *J. HUM. RTS.* 382, 390 (2019).

52. See, e.g., Zsuzsanna Tomor et al., *Smart Governance for Sustainable Cities: Findings from a Systematic Literature Review*, 4 *J. URB. TECH.* (2019) (concluding after a literature review that in smart cities, very often “[o]ld structures, patterns, and routines still dominate”).

Whichever the case, too often, the urban technology was pushed forward without adequate community input — a phenomenon particularly noted by Givens and Lam when they observe that “the technology-driven approach of smart cities was insufficient to achieve cities’ goals.”⁵³ This criticism, i.e., a lack of attention to humans, was leveled at the Quayside project, and it has been repeated in India and elsewhere; the criticism is particularly pointed in those instances where smart city initiatives were spearheaded by private enterprise without adequate involvement of local democratic governance structures.⁵⁴

The prevailing view in the early phase of smart city implementation reflected the notion that the cities’ accumulation of big data supplied by individual inhabitants, often unwittingly, provided sufficient individual and community input.⁵⁵ In other words, smart city proponents substituted individuals’ data for individuals’ voices and active participation. But as many community members have come to realize, being surveilled and inadvertently exposing one’s data is not the same as expressing one’s views, registering one’s needs, hearing from others in the community, deliberating over alternative approaches, and participating in local decision-making.

Importantly, effective local governments know how to engage with residents and develop successful local programs with local input. In fact, at the same time that smart city initiatives were gathering momentum over the past two decades,⁵⁶ cities around the world were also embarking on a wide range of other initiatives utilizing social and

53. Givens & Lam, *supra* note 1, at 835.

54. Sam Ross-Brown, *Disrupting Democracy: When Big Tech Takes Over a City*, AM. PROSPECT (Sept. 13, 2019), <https://prospect.org/environment/disrupting-democracy-big-tech-takes-city/> [<https://perma.cc/SLT5-AC79>] (describing expanding role of private sector in Quayside project with little government or public oversight); *see also* Benoit Granier & Hiroko Kudo, *How Are Citizens Involved in Smart Cities? Analysing Citizen Participation in Japanese “Smart Communities”*, 21 INFO. POLITY 61 (2016) (describing use of smart city technology to steer behavior of Japanese residents, with limited citizen input); Richard Kingston & Jenni Cauvain, *Smart Cities and Green Growth: Outsourcing Democratic and Environmental Resilience to the Global Technology Sector*, 46 ENV’T & PLAN. A 803 (2015) (arguing that the underlying principle powering private sector engagement in smart cities is to expand the market for new products).

55. *See* Ross-Brown, *supra* note 54 (comparing Barcelona’s approach of active public engagement in data management with Quayside’s empowerment of private companies to collect and control data).

56. Beryl Lipton, *Can Smart Cities Get Smarter?*, GOVERNING (Apr. 2019), <https://www.governing.com/topics/urban/gov-smart-cities.html> [<https://perma.cc/Z6DQ-RAQM>].

human-centered approaches to reach city residents. A signature component of many of these new urban initiatives has been local engagement and involvement. Human-centered design, which “engages people in the work of designing things that affect their lives, and focuses designers’ attention first and foremost on the needs and preferences of the people affected,” is one of these techniques.⁵⁷ There are myriad examples of local governments using the techniques of human-centered design processes to gather local knowledge and to co-design local policy interventions with the integral participation of those most affected.⁵⁸ Design of urban space, design of city services and interfaces, even design of resident input itself, have all benefited from these human-centered approaches.⁵⁹

The Code for America initiative is a good example of this so-called “civic tech” approach, which rejects data for data’s sake and instead engages communities themselves in identifying priorities and solutions. Code for America’s projects include a streamlined application for food stamps, and efficient clearing of eligible criminal records.⁶⁰ In these projects, the community identifies the challenge and provides the driving force, rather than allowing technology to take the lead.

Sustained local observation is one component of a human-centered design process, ensuring that policy developers understand local patterns and residents’ lives before proposing interventions. Likewise, co-design — which puts those most affected at the center of crafting policy responses — has become a regular feature of policy problem-solving in disparate contexts around the world.⁶¹ The value

57. *Human-Centered Design for Government*, GOVERNING (Dec. 7, 2015, 11:00 AM), <https://www.governing.com/cityaccelerator/blog/Human-Centered-Design-for-Government.html> [<https://perma.cc/4HAN-5N2J>].

58. See generally Rosie Webb et al., *Transforming Cities by Designing with Communities*, in THE HACKABLE CITY 95 (Michiel de Lange & Martijn de Waal eds., 2019) (describing five years of co-designing with communities in Ireland); Carl Jacobs et al., *Developing Capacity Through Co-Design: The Case of Two Municipalities in Rural South Africa*, 25 INFO. TECH. FOR DEV. 204 (2019) (describing use of co-design to create information platforms for communities); Peter Munthe-Kass, *Agonism and Co-Design of Urban Spaces*, 8 URB. RES. & PRAC. 218 (2015) (analyzing co-design interventions in urban development).

59. See *Human-Centered Design for Government*, *supra* note 57.

60. Jennifer Pahlka, *The Year in Review at Code for America*, CODE FOR AM.: BLOG (Dec. 19, 2019), <https://www.codeforamerica.org/news/the-year-in-review-at-code-for-america> [<https://perma.cc/GEW8-4UWG>].

61. See generally *supra* note 50. See also Emma Blomkamp, *The Promise of Co-Design for Public Policy*, 77 AUSTL. J. PUB. ADMIN. 729, 739 (2018) (surveying

of these techniques in expanding engagement and enhancing local democracy is apparent, particularly when compared with traditional hierarchical policymaking.⁶² Further, a well-designed, co-created intervention in a struggling community does not end the engagement between policymakers and the community, but instead stimulates further engagement and dialogue.

To date, many smart city initiatives — in China and India, but also Toronto — have operated in a “human rights free” zone.⁶³ However, as local governments have belatedly discovered in India and elsewhere, incorporation of human rights can actually enhance, rather than inhibit, smart technology. In particular, human rights processes, such as expanded opportunities for diverse individual input and participation, can increase community support for projects by better crafting interventions to reflect community needs. These processes can be successfully effectuated through reference to human rights principles, as set out in the European Charter and the Gwangju Principles.

In a 2019 interview with *Architect Magazine*, Debra Lam (one of the co-authors of *Smart Cities or Bigger Brother?*) offered an example of the danger of ignoring human-centered approaches, drawn from her time as Chief Technology Officer of Pittsburgh. According to Lam, the city set up new, sophisticated technology that would notify sanitation workers which bins were full and needed to be emptied. The city believed that this would be a popular time- and effort-saving intervention on behalf of the workers. Lam recalled, however, that “[w]hat we didn’t account for was the sanitation workers themselves . . . [W]e didn’t account for the people that were involved at the heart of this project, how they would be affected by this project, and how to incorporate those needs.”⁶⁴ As it turned out,

literature and noting that co-design has the “radical potential to transform the process and outcomes of policy making”).

62. See, e.g., Jakob Trischler, et al., *The Value of Codesign: The Effect of Consumer Involvement in Service Design Teams*, 21 J. SERV. RES. 75, 91 (2018) (in service design context, concluding that “a collaborative approach, which allows all team members to actively contribute their specific skills and knowledge, is the most effective.”).

63. See, e.g., Shivani Chaudhry, *The Human Rights Dimensions of India’s Smart Cities Mission*, URBANET (Aug. 16, 2018), <https://www.urbanet.info/india-smart-cities-human-rights/> [<https://perma.cc/6TUE-BBRX>] (arguing that India’s Smart Cities Mission lacks a human rights dimension).

64. Wendy Lau, *Q+A: What Is a Smart City? Three Experts Explain*, ARCHITECT MAG. (Jan. 14, 2019),

sanitation workers took pride in the quantity of work that they were able to accomplish, and the “smart bins” changed the way that they had to measure their productivity. The project was implemented, but it was successful only after those most affected were involved in the development of the initiative.⁶⁵

Significantly, the smart city movement has begun to acknowledge the need for greater degrees of collaboration with the humans in targeted communities. In fact, some smart city observers have identified three phases, or “generations,” for smart cities, that ultimately deliver human collaboration as an endpoint: 1.0, a technology-driven generation; 2.0, a technology-enabled city-led generation; and finally 3.0, a citizen co-creation generation.⁶⁶ Any given intervention may combine these three generations, or bounce between them. However, the most advanced and the most successful interventions will adopt the citizen co-creation model and use the process of community engagement to build robust democratic input consistent with human rights norms of participation and transparency.⁶⁷ Critically, important steps in public sector co-creation are building engagement platforms and fostering interactions (and trust) among stakeholders.⁶⁸ Interestingly, it also appears that open government data — a key feature of each of the smart Human Rights Cities described below — can drive the successful co-creation of government programs.⁶⁹

III. FOUR SMART HUMAN RIGHTS CITIES

As smart cities move toward greater human engagement and co-creation, they need not re-invent the wheel. Givens and Lam urge

https://www.architectmagazine.com/technology/q-a-what-is-a-smart-city-three-experts-explain_o [<https://perma.cc/H588-TV3X>].

65. Talib Visram, *How Carnegie Mellon Helped Transform Pittsburgh into a Smart City Playground*, FAST COMPANY (Dec. 23, 2019), <https://www.fastcompany.com/90430030/how-carnegie-mellon-helped-transform-pittsburgh-into-a-smart-city-playground> [<https://perma.cc/DBM8-69CW>].

66. Boyd Cohen, *The 3 Generations of Smart Cities*, FAST COMPANY (Aug. 10, 2015), <https://www.fastcompany.com/3047795/the-3-generations-of-smart-cities> [<https://perma.cc/X55Z-CNSN>].

67. *Id.*; see also DANIEL GOOCH ET AL., REIMAGINING THE ROLE OF CITIZENS IN SMART CITY PROJECTS (2015) (critiquing technology-driven smart city processes and describing alternatives that support citizen engagement).

68. Francis Gouillart & Tina Hallett, *Co-Creation in Government*, STAN. SOC. INNOV. REV. 40, 44 (2015).

69. Keegan McBride et al., *How Does Open Government Data Driven Co-Creation Occur? Six Factors and a ‘Perfect Storm’: Insights from Chicago’s Food Inspection Forecasting Model*, 36 GOV’T INFO. Q. 88, 95 (2018).

liberal democracies to develop standards for smart city implementation but in fact, those standards already exist in human rights law. Indeed, a number of cities have already taken steps to connect the dots between urban technology and human rights, through the coalition of Cities Coalition for Digital Rights.⁷⁰ Founded in 2018 by Amsterdam, Barcelona, and New York, the coalition now boasts dozens of municipal members.⁷¹ These city governments have endorsed a Coalition Declaration designed to “protect and uphold human rights on the internet at the local and global level.”⁷² As stated in the Declaration, municipal participants “strongly believe that human right principles such as privacy, freedom of expression, and democracy must be incorporated by design into digital platforms starting with locally-controlled digital infrastructures and services”; the Declaration further identifies transparency, accountability, participation, and inclusion as key components of these human rights baselines.⁷³

Drawing on these deeply vetted and widely embraced human rights principles makes imminent sense as a way to monitor and curb local technology abuses. Indeed, even China has formally adopted human rights standards, opening their practices to international scrutiny and reviews by human rights experts — a process that is not likely to be replicable with a newly-created monitoring body focused on smart cities alone.⁷⁴ Ideally, as local governments implement the principles of government transparency and community engagement central to human rights progress, ongoing opportunities for dialogue and mutual trust are also embedded at the community level. Given the potential for abuse and the risks involved particularly for vulnerable populations, such mutual trust is a requisite for successful and humane implementation of smart technologies.⁷⁵

70. *Declaration of Cities Coalition for Digital Rights*, CITIES FOR DIGITAL RTS., <https://citiesfordigitalrights.org/> [<https://perma.cc/L58X-PC23>] (last visited Feb. 12, 2020).

71. *What Cities Are Doing*, CITIES FOR DIGITAL RTS., <https://citiesfordigitalrights.org/cities> [<https://perma.cc/W5YR-YLCS>] (last visited Feb. 12, 2020).

72. *Declaration of Cities Coalition for Digital Rights*, *supra* note 70.

73. *Id.*

74. Christopher Gawronski, *Universal Periodic Review — Third Review of China*, GENEVA INT’L CTR. FOR JUST. (Dec. 12, 2018), <https://www.gicj.org/conferences-meetings/upr-sessions/1506-upr-china-third-cycle> [<https://perma.cc/UFS3-EGTE>].

75. *See* Lau, *supra* note 64.

The four diverse cities discussed below have embraced both smart technology and human rights, and in the process, have found paths to improve their communities. While far from perfect, Barcelona, Pittsburgh, Seoul, and Vienna seem to have avoided many of the pitfalls experienced elsewhere. In particular, as explained below, it appears that they successfully integrated their technology initiatives with their human rights commitments by engaging with and involving communities at every level as they proceeded with technological implementation. It is telling, for instance, that in contrast to India's experience of focusing technology on elite enclaves, Pittsburgh's message concerning technological innovation in the city is, "[I]f it's not for all, it's not for us!"⁷⁶

Barcelona, a leading hub of the human rights city movement, has been singled out for its human-centered smart city initiative.⁷⁷ Amnesty International describes the Barcelona smart city initiative as "citizen-driven [and] democratised."⁷⁸ According to Amnesty, Barcelona's smart city "is built . . . out of three components: an open-source data collection and sensor platform called Sentilo; a second open-source platform that processes and analyses the data called CityOS; and a user interface level of service apps that enables access to all the data."⁷⁹ Using an open-source model mitigates the risk of profit-driven exploitation of data and, says Amnesty, allows "citizens to claim collective ownership of their data," since "the city with its people decide together the parameters of proper access that retain privacy and hence, preserve the ultimate collective ownership of data in the city."⁸⁰

Focused on human-centered applications of technology, Barcelona's Chief Technology Officer "believes the fairest way for technology to advance is for local communities to be included in its development, and rewarded by clear evidence of how technology can

76. William Peduto, *Including Everyone in Pittsburgh's Transformation*, INCLUSIVE INNOVATION PGH, <https://weinnovatepgh.net/> [https://perma.cc/S9VN-K7XA] (last visited Feb. 12, 2020).

77. On Barcelona's human rights commitments, see generally MICHELE GRIGOLO, *THE HUMAN RIGHTS CITY: NEW YORK, SAN FRANCISCO, BARCELONA* (2019).

78. BEGAULT & KHAZRIK, *supra* note 16.

79. *Id.*

80. *Id.* More information on Barcelona's commitment to digital rights is available on the Cities for Digital Rights website. See *Barcelona*, CITIES FOR DIGITAL RTS., <https://citiesfordigitalrights.org/barcelona> [https://perma.cc/X9MV-9464] (last visited Feb. 10, 2020).

improve their quality of life.”⁸¹ To ensure that its residents are ready to participate in decisions about data and its deployment fully, Barcelona has embarked on a digital education program beginning in grade schools.⁸²

Vienna was an early-adopter of the human rights city framework and is also a leading smart city.⁸³ While stopping short of making an explicit connection to human rights norms, the European Commission’s report on smart city best practices in Europe stressed Vienna’s emphasis on the human aspects of smart city technology and dialogue with affected individuals. The project highlighted in the Commission report, Vienna’s Smarter Together project, involved the refurbishment of three residential neighborhoods with 1300 inhabitants, in part to develop a more sustainable energy supply and savings for tenants.⁸⁴ The involvement of the affected individuals was a high priority, with deliberate engagement in all aspects of the project. According to the European Commission report, “[d]ialogue include[d] all generations and backgrounds aiming at contributing to an integrated societal dynamic.”⁸⁵ Importantly, Vienna is also an adherent to open government data.⁸⁶

Park Won-Soon, the popular third-term mayor of Seoul, South Korea, is a primary force in that city’s embrace of both human rights city and smart city status. With his election, the city’s mission switched from an economy-centered development agenda to a people-centered welfare-focused agenda.⁸⁷ Mayor Park touts more

81. *Smart City 3.0 – Ask Barcelona about the Next Generation of Smart Cities*, URB. HUB, <https://www.urban-hub.com/cities/smart-city-3-0-ask-barcelona-about-the-next-generation-of-smart-cities/> [https://perma.cc/9ZLM-9A2Q] (last visited Feb. 12, 2020).

82. *Id.*

83. *See Vienna – A City of Human Rights*, CITY OF VIENNA, <https://www.wien.gv.at/english/social/integration/human-rights/index.html> [https://perma.cc/Y558-YS9U] (last visited Apr. 19, 2020).

84. ANTONIO GARRIDO-MARIJUAN ET AL., EUROPEAN COMM’N, *THE MAKING OF A SMART CITY: BEST PRACTICES ACROSS EUROPE* 67 (2017), https://smartcities-infosystem.eu/sites/www.smartcities-infosystem.eu/files/document/the_making_of_a_smart_city_-_best_practices_across_europe.pdf [https://perma.cc/5KP7-KHZH].

85. *Id.*

86. *See Open the City: Open Government Wien*, CITY OF VIENNA <https://smartcity.wien.gv.at/site/en/open-government-data-2/> [https://perma.cc/Q8YF-N4F5] (last visited Mar. 19, 2020) (asserting that Vienna was the “first city in the German-speaking world to publish data in 2011”).

87. Cat Johnson, *Sharing City Seoul Through the Eyes of an Urban Sociologist*, SHAREABLE (Dec. 7, 2015),

than 30 years of human rights activism, and once worked as a human rights researcher at Harvard University.⁸⁸

According to Mayor Park, the basic philosophy of a successful smart city is “governance” and “openness.”⁸⁹ Like Barcelona, Seoul is committed to providing open-source data with citizen access.⁹⁰ In addition, the smart city technology is being used to develop platforms for citizen engagement, including “Democracy Seoul,” where the local community can propose policies and work with government and private industry to resolve urban problems.⁹¹ Tellingly, both the smart city initiative and Seoul’s human rights planning are housed in the same government agency, the Seoul Innovation Bureau, ensuring that these approaches are well-integrated.⁹²

Finally, Pittsburgh’s smart city initiative is focused primarily on transportation. Through the U.S. Department of Transportation Smart Cities Challenge, Pittsburgh received an \$11 million grant to expand and redevelop the infrastructure around transportation.⁹³ The project’s aims include addressing a low-income neighborhood’s lack of access to the commercial center.⁹⁴ One aspect of the project involves implementing technology to decrease times that cars idle at intersections, thus reducing vehicle emissions and combatting air pollution. Pittsburgh is also partnering with Uber to develop and implement self-driving shuttles that would connect two

<https://www.shareable.net/sharing-city-seoul-through-the-eyes-of-an-urban-sociologist/> [https://perma.cc/VCV5-GL3N].

88. See *Biography — Park Won-Soon*, LEE KWAN YEW WORLD CITY PRIZE, <https://www.leekuaneyeworldcityprize.com.sg/about/prize-jury/prize-council/park-won-soon/> [https://perma.cc/5LAF-R359] (last visited Mar. 19, 2020).

89. Cindy Loffler Stevens, *Seoul: A World Class Smart City*, CONSUMER TECH. ASS’N (Jan. 3, 2020), <https://www.cta.tech/Resources/i3-Magazine/i3-Issues/2020/January-February/Seoul-A-World-Class-Smart-City> [https://perma.cc/22BN-329B].

90. *Id.*

91. *Id.*; see also *Seoul, Ready to Share with the World!: Seoul E-Government*, SEOUL METRO. GOV’T, https://www.metropolis.org/sites/default/files/seoul_e-government_english.pdf [https://perma.cc/J3QV-5PSB] (last visited Mar. 19, 2020).

92. Lisa Smith, *Smart City Portrait: Seoul – The Power of Citizen Participation*, BEE SMART CITY (Aug. 27, 2018, 11:11 AM), <https://hub.beesmart.city/city-portraits/smart-city-seoul-part-1-the-power-of-citizen-participation> [https://perma.cc/CL7E-R5S7].

93. *Smart City: What Comes Next*, U.S. DEP’T TRANSP. (Apr. 28, 2017), <https://www.transportation.gov/smartcity/what-comes-next> [https://perma.cc/QLP5-V9L5].

94. CITY OF PITTSBURGH, BEYOND TRAFFIC: THE SMART CITY CHALLENGE (2016), www.transportation.gov/sites/dot.gov/files/docs/Pittsburgh%20Vision%20Narrative.pdf [https://perma.cc/43VA-269N].

neighborhoods that have traditionally been isolated from public transportation.⁹⁵

Like other smart human rights cities, implementation of Pittsburgh's urban intelligence initiatives efforts is far from perfect, and some residents question whether community consultations have fully reached the affected individuals.⁹⁶ Still, Pittsburgh has created novel approaches to enhance public input through Carnegie Mellon University's Program for Deliberative Democracy by holding "deliberative forums" to discover what people think about an issue after they have had the opportunity to become informed about the topics under discussion and to engage with multiple perspectives.⁹⁷ According to Pittsburgh's smart city project, "[t]his approach to citizen input is part of a longer-term goal to make Pittsburgh a center for Deliberative Democracy."⁹⁸ Pittsburgh's commitment to open data further promotes transparency and collaboration between residents and policymakers.⁹⁹

CONCLUSION

Givens and Lam suggest that liberal democracies should create new standards and structures to influence smart cities in more positive directions. In fact, those standards already exist in human rights norms explicitly adopted by many cities. Documents such as the European Charter, the Gwanju Principles, and the Declaration of

95. *Autonomous Shuttle Network: Connecting Community Assets*, SMART PGH, <http://smartpittsburgh.org/programs/autonomous-shuttle-network> [https://perma.cc/N7XX-R2D7] (last visited Apr. 19, 2020).

96. See, e.g., Tartan Board, *Smart Cities Technology: Looking Beyond our Idealized Images*, TARTAN (Apr. 7, 2019), <http://thetartan.org/2019/4/8/forum/smartcities> [https://perma.cc/WR4V-RQA9] (mentioning that Carnegie-Mellon's undergraduate newspaper urges Pittsburgh to take account of economic inequality in implementing smart city technology). For a telling omission of black neighborhoods on a map of the city, see Juliette Rihl, *CMU Created a Map Excluding Pittsburgh's Black Neighborhoods. It's Not the Only One.*, PUB. SOURCE (Feb. 6, 2020), <https://www.publicsource.org/cmu-created-a-map-excluding-pittsburghs-black-neighborhoods-its-not-the-only-one/> [https://perma.cc/ZHT7-6JAP].

97. *Providing Enhanced Public Input on Metro21 Projects*, CARNEGIE MELLON UNIV., METRO21: SMART CITIES INST., <https://www.cmu.edu/metro21/projects/enhanced-public-opinion.html> [https://perma.cc/LX5A-W8FN] (last visited Feb. 10, 2020).

98. *Id.*

99. Sanjana Dayananda & Robert Burack, *Two Years of Open Data in Pittsburgh*, DATA-SMART CITY SOLUTIONS (Nov. 16, 2017), <https://datasmart.ash.harvard.edu/news/article/two-years-of-open-data-in-pittsburgh-1161> [https://perma.cc/3GTN-T6EP].

Cities Coalition for Digital Rights spell out standards for municipalities in terms of government transparency and community participation, including participation of those most affected. These principles have, at least to some extent, been realized in Human Rights Cities such as Barcelona, Pittsburgh, Seoul, and Vienna, as they implement smart city technologies. Informed by human rights, these cities are using innovative ways to engage with communities and, in several instances, using open-access data to facilitate greater community control.

Human rights norms offer an additional benefit to those concerned about smart city implementation: they are part of a monitoring structure. Civil society regularly reports on human rights compliance to U.N. treaty bodies and special procedures. Cities often contribute to national reporting on human rights-compliance, or may — as with the SDGs — simply offer their own independent reports.¹⁰⁰

Human rights standards already developed and endorsed by municipalities, combined with these monitoring opportunities, have the potential to achieve the goals that Givens and Lam hope for without re-inventing the wheel. Importantly, virtually all countries, including China, participate in U.N. monitoring processes.

Givens and Lam's work identifies not so much a governance gap, as a lapse in human rights dialogue around smart cities. The building blocks needed to start that dialogue already exist in a range of cities and are ready to be put to use in promoting human rights in the implementation of urban technology.

100. *See, e.g.*, NYC MAYOR'S OFFICE FOR INT'L AFFAIRS, GLOBAL VISION, URBAN ACTION: NEW YORK CITY'S IMPLEMENTATION OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT (2018), https://www1.nyc.gov/assets/international/downloads/pdf/NYC_VLR_2018_FINAL.pdf [<https://perma.cc/H6F7-ZB79>].