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Smart Law for Smart Cities

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SMART LAW FOR SMART CITIES SYMPOSIUM

INTRODUCTION

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When the *Fordham Urban Law Journal*, along with a consortium of centers at Fordham University,[1] decided to organize a two-day "Smart Law for Smart Cities: Regulation, Technology, and the Future of Cities" Symposium, the need was clear. The interest in "smart cities" had grown exponentially across disciplines—from urban planning and sociology to environmental studies and history—as well as in general interest press.[2] Local elected officials[3] and cities started

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1. Symposium co-sponsors included the law school's Urban Law Center, the Center for Digital Transformation, the Center on Law and Information Policy, and the Urban Studies Program. The Symposium gathered scholars from the legal academy as well as closely related fields, public officials, industry representatives, and advocates to explore how changes in technology are transforming urban governance, the regulatory barriers that are impeding implementation of these innovations, and concerns such as privacy and security.

2. *See, e.g.*, ANTHONY M. TOWNSEND, SMART CITIES: BIG DATA, CIVIC HACKERS, AND THE QUEST FOR A NEW UTOPIA (2013). Townsend gave the keynote

using smart city technology to, for example, decrease crime rates,[4] develop municipal infrastructure,[5] and even to develop entirely new city models.[6] The "smart cities" topic therefore is exceedingly wide-ranging.

The Smart Law for Smart Cities Symposium took hold of this broad subject and focused on the questions most pressing to the legal community. As far as the organizers knew, no one had written about[7] or gathered together experts to set out an agenda for *the law* and smart cities: identifying the particular barriers that legal and regulatory regimes present to the emergence of smart cities and envisioning how the law could help support the best aspects of smart cities while preventing the least desired ones.[8] The Symposium, and

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lunch talk at the *Fordham Urban Law Journal* (*ULJ*) Symposium, tailoring the themes that his book raises to the Symposium's focus on the barriers and opportunities that the law offers to the development of smart cities. Other dynamic public figures working on smart cities issues include Jennifer Pahlka, a founder of Code for America; Boyd Cohen, who has been instrumental in defining "smart city"; Greg Lindsay, a participant in the *ULJ* Symposium, and a journalist, urbanist, and speaker; and Nicholas Carr, the author of THE SHALLOWS: WHAT THE INTERNET IS DOING TO OUR BRAINS (2011).

3. For example, the mayor of Eindhoven in the Netherlands, Rob van Gijzel, and San Francisco mayor, Edwin Lee, and his Office of Civic Innovation, have been leaders in the field. Former San Francisco mayor Gavin Newsom, published CITIZENVILLE: HOW TO TAKE THE TOWN SQUARE DIGITAL AND REINVENT GOVERNMENT in 2013, while serving as the Lieutenant Governor of California. *See also, e.g.*, Matt Villano, *In Louisville, Fresh Look at Health Data Correlations Drives Efforts on Asthma*, DATA INFORMED: BIG DATA & ANALYTICS ENTERPRISE (Jan. 31, 2013, 3:09 PM), http://data-informed.com/in-louisville-fresh-look-at-health-data-correlations-drives-efforts-on-asthma/.

4. *See, e.g.*, Press Release, IBM, Memphis Police Department Reduces Crime Rate with IBM Predictive Analytics Software (July 21, 2010), *available at* https://www-03.ibm.com/press/us/en/pressrelease/32169.wss.

5. *E.g.*, Adam Christensen, *Building a Smarter City in Cambridge, Ontario*, BUILDING A SMARTER PLANET: A SMARTER PLANET BLOG (Sept. 8, 2010, 1:41 AM), http://asmarterplanet.com/blog/2010/09/building-a-smarter-city-in-cambridge-ontario.html.

6. *See, e.g.*, Emily Badger, *America's Most Innovative Neighborhood: 15 Square Miles in New Mexico, Population: 0*, FAST COMPANY http://www.fastcompany.com/1838036/americas-most-innovative-neighborhood-15-square-miles-new-mexico-population-0 (last visited Dec. 2, 2014) (bringing technology to a "dumb" new city).

7. If one surveys the literature on smart cities, one finds little trace of "smart law." One can find literature on energy and cities; on transportation and technology; and on other topics.

8. Academic centers and research institutes are starting to focus on the topic, including the Lincoln Institute of Land Policy, UC Berkeley's Center for Information Technology Research in the Interest of Society, SUNY Albany's Center for Technology & Government, and the Brookings Institution. Organizations working on these issues include Code for America, Living Cities, Urban Prototyping, and the Regional Plan Association. Large companies working on smart cities technology

now this book, in other words, have begun the conversation by asking both the descriptive question—what role the law *is* playing in the development of smart cities—and the normative one—what role the law *should* play.

The Articles in this book capture the core issues that structured the Symposium—local service delivery, broadband and the new digital divide, regulating big data, resident engagement, energy and infrastructure, and surveillance—while also indicating how rich and multi-layered each of these categories is. Running throughout the contributions is a steady stream of optimism, tempered by realism.

I. THE SYMPOSIUM AND ITS PERSPECTIVES

A. The Metropticon

Kelsey Finch and Omer Tene take us on an invigorating ride.[9] They begin with the benefits of smart cities—including the potential to increase residents' mobility, expand access to information, and improve quality of services. Then they lucidly identify the problems that smart cities pose.[10] In particular, they provide a haunting picture of the surveillance and privacy concerns created by the "metropticon": an urban government that wields advanced technology to track, infiltrate, and modify the lives of its residents,[11] fulfilling George Orwell's dystopian predictions.[12] Yet after sending us into a near and justified panic, the authors lay out a set of legally sound proposals—including strategies for engendering trust in residents, stripping data of identifying markers, and embracing transparency—that can help cities avoid falling into those traps and instead build on the potential of new technology.[13]

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include JP Morgan Chase's global cities initiative, CitiGroup, Cisco, IBM, Siemens, Google, Microsoft, G.E., Verizon, BASF, Hitachi, Anderson, and Con Edison. Previous Smart Cities conferences have included the Smart City Event in Amsterdam (2014); the annual Smart City Expos in Barcelona, Spain; the Technology Roundtable: Smart Cities in San Francisco (2012); and the annual Meeting of the Minds summit. Foundations funding smart cities initiatives include the Bloomberg Foundation, the MacArthur Foundation, the Ford Foundation, and the Open Society Foundation.

    9. *See* Kelsey Finch & Omer Tene, *Welcome to the Metropticon: Protecting Privacy in a Hyperconnected Town*, 41 FORDHAM URB. L.J. 1581 (2014).

    10. *See id.*

    11. *Id.*

    12. *See* GEORGE ORWELL, NINETEEN EIGHTY-FOUR (1949).

    13. Finch & Tene, *supra* note 9, at 1606–15.

Finch and Tene's Article speaks to the literature that criticizes how technology has oversaturated our lives.[14] It also contributes to the burgeoning work on big data and cities. The technology transforming urban governance inhales significant amounts of potentially sensitive information.[15] Heated debates are underway about the proper level of regulation.[16] As data continues to drive decision making, cities face increasing challenges in protecting residents' sensitive information.[17]

B. Energy and Microgrids

Kevin Jones and his co-authors, Sylvia J.S. Bartell, Daniel Nugent, Jonathan Hart, and Achyut Sherestha, share a series of fascinating case studies on urban microgrids (including a portrayal of how NYU's microgrid system survived the onslaught of Superstorm Sandy while most other power systems failed) to show that clean energy use in cities not only is theoretically possible but also is happening right now.[18] Scholars such as Jones and his co-authors understand the importance of highlighting successful projects and innovations,

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14. *See, e.g.*, JARON LANIER, WHO OWNS THE FUTURE? (2013); EVGENY MOROZOV, TO SAVE EVERYTHING, CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM (2013).

15. *See, e.g.*, Orin S. Kerr, *The Mosaic Theory of the Fourth Amendment*, 111 MICH. L. REV. 311 (2012); David Alan Sklansky, *Too Much Information: How Not to Think About Privacy and the Fourth Amendment*, 102 CALIF. L. REV. 1069 (2014).

16. *See, e.g.*, Emily Badger & Sara Johnson, *Yes, GIS Files Are Public Data, Too*, CITY LAB, (July 11, 2013), http://www.citylab.com/tech/2013/07/yes-gis-files-are-public-data-too/6159/. C*ompare, e.g.*, Jane Yakowitz, *Tragedy of the Data Commons*, 25 HARV. J.L. & TECH. 1 (2011) (providing, inter alia, a defense of anonymized data), *with* Paul Ohm, *Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization*, 57 UCLA L. REV. 1701, 1701 (2010) (presenting a case for the failure of data anonymization).

17. *See, e.g.*, STEPHEN GOLDSMITH & SUSAN CRAWFORD, THE RESPONSIVE CITY: ENGAGING COMMUNITIES THROUGH DATA-SMART GOVERNANCE (2014); M. Ryan Calo, *Against Notice Skepticism in Privacy (and Elsewhere)*, 87 NOTRE DAME L. REV. 1027 (2012); M. Ryan Calo, *The Boundaries of Privacy Harm*, 86 IND. L.J. 1131 (2011); M. Ryan Calo, *The Drone As Privacy Catalyst*, 64 STAN. L. REV. ONLINE 29 (2011); Orin S. Kerr, *Applying the Fourth Amendment to the Internet: A General Approach*, 62 STAN. L. REV. 1005 (2010); Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801 (2004); Lior Jacob Strahilevitz & Ariel Porat, *Personalizing Default Rules and Disclosure with Big Data*, 112 MICH. L. REV. 1417 (2014); Orin Kerr & Greg Nojeim, *The Data Question: Should the Third-Party Records Doctrine Be Revisited?*, A.B.A. J. (Aug. 1, 2012, 9:20 AM), http://www.abajournal.com/magazine/article/the_data_question_should_the_third-party_records_doctrine_be_revisited/.

18. Kevin B. Jones et al., *The Urban Microgrid: Smart Legal and Regulatory Policies to Support Electric Grid Resiliency and Climate Mitigation*, 41 FORDHAM URB. L.J. 1695, 1704–53. (2014).

grounding the dialogue in real models of confronting and overcoming legal challenges.[19]   Indeed, understanding how technically complex infrastructure works proves incredibly useful in tandem with recommendations for legal change.[20]

Jones et al. might be the book's greatest boosters of urban technology. Aaron Saiger, for example, who presented at the Smart Law for Smart Cities Symposium on his forthcoming book, *Schooling In The Cloud*, takes a more cautionary approach to how technology has been transforming education.[21]   Others have taken a similar cautionary approach in other service delivery contexts, such as public health[22] and crime and policing,[23] as does Dorothy Glancy in her Article on transportation in this book.[24]   Jones et al.'s optimism suggests a broader takeaway: perhaps energy production technology—whether smart grids, microgrids, metering, or other new energy sources such as geothermal heat capturing[25]—triggers fewer concerns than other kinds of local service delivery technology. Uniting all local service delivery categories, however, is the fact that the legal and regulatory environment is lagging behind the technological changes.

C. The Interwebs

Scholarship on the Internet and broadband technology in particular has been exploding. Although cities possess the local knowledge needed to deliver internet service to residents, Ellen Goodman joins scholars such as Olivier Sylvain[26] in writing about the

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19. Following a similar path of merging the theoretical with the practical implications of technology are Phil Weiser's works on telecommunications. *See, e.g.*, JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE (2013).

20. *See* Jones et al., *supra* note 18, at 1753–55.

21. AARON SAIGER, SCHOOLING IN THE CLOUD (forthcoming, Oxford University Press).

22. *See, e.g.*, Sharona Hoffman & Andy Podgurski, *Balancing Privacy, Autonomy, and Scientific Needs in Electronic Health Records Research*, 65 SMU L. REV. 85 (2012).

23. *See, e.g.*, Elizabeth E. Joh, *Policing by Numbers: Big Data and the Fourth Amendment*, 89 WASH. L. REV. 35 (2014).

24. Dorothy Glancy, *Sharing the Road: Smart Transportation Infrastructure*, 41 FORDHAM URB. L.J. 1617 (2014).

25. Adam L. Reed, Research Assoc., Renewable & Sustainable Energy Inst., Univ. of Colo. at Boulder, Presentation During the Panel on Energy and Infrastructure at the Fordham Urban Law Journal Symposium: Smart Law for Smart Cities: Regulation, Technology, and the Future of Cities (Feb. 28, 2014).

26. *See, e.g.*, Olivier Sylvain, *Broadband Localism*, 73 OHIO ST. L.J. 795 (2012); *see also, e.g.*, *Moyers & Company, "Susan Crawford on Why Our Internet Access Is*

challenges that cities face when building different broadband systems for their residents,[27] and Enrique Armijo discusses some of the constitutional issues looming ahead for public internet systems.[28]

Goodman's story about broadband and libraries is filled with more obstacles than Jones et al.'s tale of microgrids, though it exhibits no less faith in the potential of technology to transform the urban experience. Her Article describes how so-called "anchor institutions," such as libraries, provide less advantaged urban residents with access to broadband and other technologies yet require further support from the legal and regulatory structure to meet the current need.[29] She explains that institutions at the edges of the law perform vital functions, such as serving as broadband providers of last resort.[30] However, Goodman notes that even after recent upgrades, more than sixty-five percent of libraries still do not have enough public computers to meet the present demand.[31] Goodman turns our attention away from the "sexier" debates about surveillance and privacy to remind us that remote decisions of the federal government limit the potential and dreams of many city residents,[32] as do restrictive state regulations.[33]

Armijo, like Finch and Tene, reminds us that the *Fordham Urban Law Journal* is as comfortable with the theory of urban law as with the practice of it. He argues that publicly provided or publicly supported internet networks raise new constitutional questions— particularly free speech questions.[34] He establishes a framework for analyzing whether these networks can qualify as public fora, whether Internet service providers are state actors, and more.[35] His work demonstrates that legal doctrine can and should anticipate changing technologies and urban landscapes, and it provides tools for parties and courts deciding groundbreaking future cases.[36] As Armijo

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Slow, Costly and Unfair" (Public Affairs Television Feb. 8, 2013), *available at* http://billmoyers.com/segment/susan-crawford-on-why-u-s-internet-access-is-slow-costly-and-unfair/.

27. Ellen P. Goodman, *"Smart Cities" Meet "Anchor Institutions": The Case of Broadband and the Public Library*, 41 FORDHAM URB. L.J. 1665 (2014).

28. Enrique Armijo, *Government-Provided Internet Access: Terms of Service as Speech Rules*, 41 FORDHAM URB. L.J. 1499 (2014).

29. *See* Goodman, *supra* note 27.

30. *Id.* at 1684–86.

31. *Id.* at 1676.

32. *Id.* at 1684–86.

33. *Id.* at 1691.

34. Armijo, *supra* note 28, at 1503.

35. *Id.*

36. *See, e.g., id.*

asserts, we should put well-crafted principles in place before the trend toward publicly provided access has become the norm.[37]

D. Local Service Delivery: The Transportation Example

Teresa Scassa thoughtfully analyzes one slice of the "smart transportation" pie. She explores the role that intellectual property law has played in the development of municipal transit systems and, in particular, in the rapidly expanding world of programs that use so-called "open data" to provide useable information to residents trying to get around.[38] Her position is balanced but clear: too often intellectual property law, especially copyright law but increasingly patent law as well, has been misapplied in the transit data world.[39] She challenges, for example, the idea of whether "open data" is even the right phrase to use in the municipal transit context, because that phrase suggests that the underlying data was copyrightable and then made open to the public.[40] Instead, she suggests, such data might not be copyrightable even at the start.[41] Scassa's familiarity with the underlying technological complexities only deepens the meaningfulness of her critique and the usefulness of her recommendations.

Dorothy Glancy dissects the legal issues posed by another piece of the smart transportation pie: new wireless technologies (which she calls "invisible") that link personal vehicles to one another through information exchanges.[42] She focuses on two types: "Connected Vehicle Safety" and "Connected Vehicle Mobility" systems.[43] After providing a wonderful history of the development of U.S. urban transportation and, subsequently, so-called intelligent transportation systems, she provides the first sustained analysis of connected vehicle technologies from a legal perspective. Like most observers in this book, Glancy maps out both the promises that such technologies present—such as increasing mobility, preventing some of the 4.8 billion hours wasted annually in traffic congestion, and saving some of the 3.9 billion gallons of fossil fuels burned annually in traffic

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37. *Id.* at 1525.

38. Teresa Scassa, *Public Transit Data Through an Intellectual Property Lens: Lessons About Open Data*, 41 FORDHAM URB. L.J. 1759 (2014).

39. *See id.* at 1808–10.

40. *See id.* at 1779.

41. *See id.*

42. Glancy, *supra* note 24, at 1618.

43. *Id.* at 1627–40.

jams[44]—and the threats—from violating privacy rights to creating new liability concerns.[45]

E. Local Political Participation

A book on the law is incomplete without a discussion of political process. Rounding out the diverse methodologies and concerns here, Cynthia Farina and her co-authors, Hoi Kong, Cheryl Blake, Mary Newhart, and Nik Luka, direct us to core questions of political participation and smart cities.[46] These authors, like Jones and his co-authors, employ a case study perspective, highlighting Canadian and U.S. examples to argue that technology can enhance deliberative democracy and political participation.[47] They are not naive about the potential of technology.   Instead, they argue that managing technological tools to enhance information dispersal and to recruit public engagement requires both governments and civil society organizations to invest significant resources.[48]

CONCLUSION

One emerges from this compilation energized by the quality of scholarship and the possibilities. We need not merely react to legal issues looming over smart cities. Instead, we can tackle the issues head on and even anticipate prospective concerns.

The role of the law in smart cities remains unclear. Billions of dollars and millions of residents in the United States alone will be affected by the quality and shape of the legal regimes that evolve to manage smart cities' growth. Future "smart law for smart cities" initiatives can encourage contributors to talk to each other even more directly, challenging scholars to draw on their areas of expertise while explicitly connecting their observations to those of colleagues in other fields. Doing so will help solidify the framework and identify the tools we can use to remove undesired legal barriers, while shoring up the necessary ones.

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44. *Id.* at 1619.

45. *Id.* at 1640–63.

46. Cynthia Farina et al., *Democratic Deliberation in the Wild: The McGill Online Design Studio and the RegulationRoom Project*, 41 FORDHAM URB. L.J. 1527 (2014).

47. *Id.*

48. *Id.* at 1578–80.