Urbanism Under Google: Lessons from Sidewalk Toronto

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Cities around the world are rapidly adopting digital technologies, data analytics, and the trappings of "smart" infrastructure. These innovations are touted as solutions to help rationalize services and address rising urban challenges, whether in housing, transit, energy, law enforcement, health care, waste management, or population flow. Promises of urban innovation unite cities' need for help with technology firms' need for markets and are rarely subject to evidentiary burdens about projected benefits (let alone costs). For the city, being smart is about functioning better and attracting tech plaudits. For the technology company, the smart city is a way to capture the value of data flows—either by directly monetizing behavioral insights or by using those insights to design or acquire services—and then realizing the network effects and monopoly rents that have characterized information technology platforms.

No company is more ambitious about exploring data flows and seeking to create and dominate networks of information than Google. In October 2017, Google affiliate Sidewalk Labs embarked on its first prototype smart city in Toronto, Canada, through a collaboration with the public development authority Waterfront Toronto. Together, the project partners are planning a new kind of data-driven urban environment: "the world's first neighborhood built from the internet up."[1] The vision is for a neighborhood featuring state-of-the-art sustainable architecture, autonomous vehicles, sensor-based

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1. Emily Badger, *Google's Founders Wanted to Shape a City. Toronto Is Their Chance*, N.Y. TIMES (Oct. 18, 2017), https://www.nytimes.com/2017/10/18/upshot/taxibots-sensors-and-self-driving-shuttles-a-glimpse-at-an-internet-city-in-toronto.html [https://perma.cc/6APB-4K7M]; *see also* Daniel L. Doctoroff, *Reimagining Cities from the Internet Up*, MEDIUM (Nov. 30, 2016), https://medium.com/sidewalk-talk/reimagining-cities-from-the-internet-up-5923d6be63ba [https://perma.cc/8L6P-SFZK].

surveillance, and data-driven "responsive" services. Much of the vision draws from leading city planning ideas and foregrounds progressive ideals of inclusivity and sustainability. However, for the crucial first eighteen months of the venture, many of the most consequential features of the Sidewalk Toronto project were hidden from view and unavailable for serious scrutiny. On basic questions about the proposed set of innovations, the players defied public accountability: questions about data collection, data control, privacy, competition, and procurement. Even more basic questions about the use of public space went unanswered: privatized services, land ownership, infrastructure ownership, and, in all cases, the question of who is in control. The net result is that there can be no confidence that the Sidewalk Toronto vision is compatible with democratic processes, sustained public governance, or the public interest. This Article analyzes the Sidewalk Toronto project as it took shape in its first phase, prior to the release of the Master Innovation and Development Plan, and explores three major governance challenges posed by the imagined "city of the future": privatization, platformization, and domination. The significance of this case study applies well beyond Toronto. Google and related companies are modeling future business growth embedded in cities and using projects like Sidewalk Toronto as test beds. What happens in Toronto is designed to be replicated. We conclude with some lessons highlighting the precarity of civic stewardship and public accountability when cities are confronted with tantalizing visions of privatized urban innovation.

INTRODUCTION

On Toronto's eastern waterfront, a mile from the city center, there is a twelve-acre, L-shaped plot of land that would come to be known as Quayside. The property is largely owned by Waterfront Toronto (WT), a development corporation established in 2001 by the Government of Canada, the Province of Ontario, and the City of Toronto to assist in the renewal of Toronto's waterfront.[2] Quayside came to international attention on October 17, 2017, when Sidewalk Labs—a wholly owned subsidiary of the Google conglomerate Alphabet Inc.—became the official "innovation and funding partner" for the site.[3] As such, it was tasked with helping to "create people-centred neighbourhoods that achieve precedent-setting levels of sustainability, affordability, mobility, and economic opportunity" at Quayside and, more significantly, to potentially scale its ideas to the vastly more substantial 880-acre eastern waterfront, which encompasses the Port

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2. *About Us*, WATERFRONT TORONTO, https://waterfrontoronto.ca/nbe/portal/waterfront/ Home/waterfronthome/about-us [https://perma.cc/PWM4-GKMA] (last visited Oct. 6, 2019); *Who We Are*, WATERFRONT TORONTO, https://waterfrontoronto.ca/nbe/portal/waterfront/ Home/waterfronthome/about-us/who-we-are [https://perma.cc/63XM-DMBP] (last visited Oct. 6, 2019).

3. *New District in Toronto Will Tackle the Challenges of Urban Growth*, WATERFRONT TORONTO (Oct. 17, 2017), https://www.waterfrontoronto.ca/nbe/portal/waterfront/Home/ waterfronthome/newsroom/newsarchive/news/2017/october/new+district+in+toronto+will+t ackle+the+challenges+of+urban+growth [https://perma.cc/5PPB-UG9H].

Lands public redevelopment area adjacent to the site.[4] With Sidewalk's involvement, the small and otherwise unremarkable patch of postindustrial land at Quayside quickly became the centerpiece of a heated debate, nationally and internationally, about innovation, privatization, privacy, surveillance, control, and the future of cities and urban life.

There was a certain giddiness to the relationship between Waterfront Toronto and Sidewalk Labs, evident not only in the proliferation of brightly hued concept papers and public demonstrations imagining new infrastructure for the site[5] but also in the speed with which foundational agreements about the relationship between the parties and the bounds of the project were consummated—all outside of public view. According to Ontario's provincial auditor, the Board of Waterfront Toronto was given mere days to discuss and understand the implications of the initial "Framework Agreement" with Sidewalk, dated October 16, 2017, before being asked to approve it.[6] It did so under intense pressure, given that the prime minister, the premier, and the mayor had all been lined up to make the announcement public only days later.[7] Waterfront Toronto and Sidewalk kept this original Framework Agreement secret, apart from the release of a short summary.[8]

Even Toronto city officials were kept in the dark as concerns about ownership and governance percolated and the project attracted intense public interest and media attention.[9] It took nine-and-a-half months for the parties to release more details in another superseding agreement, the "Plan

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4. *Id.*

5. Molly Sauter, *City Planning Heaven Sent*, E-FLUX ARCHITECTURE (Feb. 1, 2019), https://www.e-flux.com/architecture/becoming-digital/248075/city-planning-heaven-sent/ [https://perma.cc/Y7P2-FWBH] ("Sidewalk Toronto is, still, a digitally-bounded project, built out of renderings with persuasive power but no planning utility. . . . [It is] fantastic, fantastical, and phantasmic.").

6. 1 OFFICE OF THE AUDITOR GEN. OF ONT., ANNUAL REPORT 2018, at 649 (2018), http://www.auditor.on.ca/en/content/annualreports/arreports/en18/v1_315en18.pdf [https:// perma.cc/H8NC-QPEA] [hereinafter AUDITOR REPORT].

7. *Id.* at 691. This was not a unanimous vote, according to former board member Julie Di Lorenzo (the chair of the Investment and Real Estate Committee). Email from Julie Di Lorenzo to Julia Powles, Professor of Law & Tech., Univ. of W. Austl. (May 12, 2019, 6:28 PM) (on file with authors). Di Lorenzo voted in dissent, two board members were absent, and one board member abstained. *Id.; see also* Telephone Interview with Julie Di Lorenzo (Apr. 2019).

8. David Rider, *Toronto's High-Tech Quayside District Takes 'Next Step' as New Deal Reached with Google Sister Company*, STAR (July 31, 2018), https://www.thestar.com/ news/city_hall/2018/07/31/sidewalk-labs-deal-unlocks-40-million-us-for-quayside-high-tech-district.html [https://perma.cc/9F2L-QTTM].

9. Brian Barth, *The Fight Against Google's Smart City*, WASH. POST (Aug. 8, 2018), https://www.washingtonpost.com/news/theworldpost/wp/2018/08/08/sidewalk-labs/ [https://perma.cc/D8WL-S77S]; *see also* Mariana Valverde & Alexandra Flynn, *Mystery on the Waterfront: How the "Smart City" Allure Led a Major Public Agency in Toronto into a Reckless Deal with Big Tech*, CTR. FOR FREE EXPRESSION (Dec. 3, 2018), https://cfe.ryerson.ca/blog/2018/12/mystery-waterfront-how-smart-city-allure-led-major-public-agency-toronto-reckless-deal [https://perma.cc/XDY5-RZ6J] (Toronto City Councilor Denzil Minnan-Wong was the only public official to see the Framework Agreement in his role as Waterfront Toronto board member. He told his fellow councilors at a meeting of the council's executive committee in January 2018, "I know enough about the agreement that I think you would like to know more about the agreement [before you approve anything].").

Development Agreement" (PDA), dated July 31, 2018.[10] Yet even then, it was unclear what this project was all about or what Sidewalk and, more broadly, Alphabet's business model was: real estate development, communications infrastructure, an Android operating system for the city? It was obvious, in the words of Ontario's auditor general, that the project would implicate "intellectual property; data collection, ownership, security and privacy; legal issues; consumer protection issues; infrastructure development; and economic development," but Waterfront Toronto was charging ahead before any level of government had appropriate public policies in place on any of these matters.[11]

Wherever the Sidewalk Toronto project lands, and however much of the original vision is ever actually implemented, this first stage process of public-private collaboration reveals how public authorities and technology firms are presently positioned in the rush to create the "smart city." It also signals what happens when the audacious promises and political leverage of one of the most powerful companies in the world clash with the efforts of a small, expert, and determined band of citizens, journalists, and civic groups.

This Article proceeds as follows. Part I is an examination of the first stage of the Sidewalk Toronto project, from the issuance of Waterfront Toronto's request for proposals concerning Quayside in March 2017 to the release of the "Master Innovation and Development Plan" in spring 2019, and focuses on secrecy; the studied ambiguity about land, data, infrastructure; and private ordering. The rollout of Sidewalk Toronto, in important ways, follows other Google experiments in other cities and domains. There is the governmental eagerness to ease Google's entry, the allure of "patient capital" to support high-cost investments with long-term payoffs, and the cunning of a company with nothing to lose. Part II examines Sidewalk's vision of a "digital layer" interpenetrating urban life in the context of the developing notion of the "city as platform" and analyzes the dangers of platform governance as envisioned by Sidewalk's proposal. This Article concludes with a summary and observations about alternative paths.

I. THE MAKING OF SIDEWALK TORONTO

Waterfront Toronto is a provincial not-for-profit corporation, with all three levels of government sharing equal, non-equity shares[12] and a limited

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10. *See Plan Development Agreement Between Toronto Waterfront Revitalization Corporation and Sidewalk Labs LLC*, WATERFRONT TORONTO 33 (July 31, 2018), https://waterfrontoronto.ca/nbe/wcm/connect/waterfront/73ac1c93-665b-4fb8-b19b-6bfa23c2a427/PDA+July+31+Fully+Executed+%2802%29.pdf?MOD=AJPERES [https://perma.cc/BN55-VVZE] [hereinafter *PDA*].

11. *See* AUDITOR REPORT, *supra* note 6, at 653 ("The Province lacks a policy framework to guide the development of a mixed-use smart city such as the one being contemplated for Quayside.").

12. CITY OF TORONTO, WATERFRONT STRATEGIC REVIEW 10 (2015), https://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-81763.pdf [https://perma.cc/26AU-8KRX] [hereinafter WATERFRONT STRATEGIC REVIEW]; *see also* CITY OF TORONTO, REVIEW OF IMAGINATION, MANUFACTURING, INNOVATION AND TECHNOLOGY PROPERTY TAX INCENTIVE PROGRAM 5 (2018), https://www.toronto.ca/legdocs/mmis/2018/ex/bgrd/

oversight capacity, which it exercises through the ability to select board members, only two of whom may be public officials.[13] WT owns most of the land on the twelve-acre Quayside site, with the hundreds of acres of adjacent waterfront lands mostly owned by the City of Toronto.[14]

Leveraging its modest real estate interest and comparatively larger redevelopment role, WT announced in the spring of 2017 an audacious vision to transform Quayside into a "globally significant demonstration project that advances a new market model for climate-positive urban developments"— "an exemplar of best practices and breakthrough solutions of global significance" that it saw as a "pilot environment" and "first step towards the longer-term vision for the broader eastern waterfront revitalization."[15] Whereas WT had previously pursued incremental mixed-use developments, it was now pivoting to an ambitious wholesale approach and seeking an "innovation" partner as a "co-master developer" to do it.[16] By this point, it was already in discussions with Alphabet-Sidewalk, whose executives were in conversation with Prime Minister Justin Trudeau.[17]

A. The Beginning: From Request for Proposals to the Framework Agreement

On March 17, 2017, WT issued its request for proposals (RFP) to identify a firm to create a "precedent-setting waterfront community" as a "testbed for emerging technologies, materials and processes" on Toronto's eastern waterfront.[18] It sought a partner to create an "overall vision" and to identify the "technologies, infrastructure, strategies, measurable outcomes and downstream partners" necessary to ensure the delivery of a "globally significant demonstration project" on the Quayside portion of the lands.[19]

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backgroundfile-111606.pdf [https://perma.cc/2LT8-UUXH] [hereinafter TAX INCENTIVE REVIEW].

13. Toronto Waterfront Revitalization Corporation Act, 2002, S.O. 2002, c. 28, s. 5(2) (Can.) (Established in 2001 as the Toronto Waterfront Revitalization Corporation, WT became known by its current name in 2007.). *Id.* s. 2(1).

14. Marco Chown Oved, *Google's Sidewalk Labs Plans Massive Expansion to Waterfront Vision*, STAR (Feb. 14, 2019), https://www.thestar.com/news/gta/2019/02/14/googles-sidewalk-labs-plans-massive-expansion-to-waterfront-vision.html [https://perma.cc/9VBK-WLEX] (78 percent of the adjacent land is owned by the city, 11 percent is owned by Ontario, and the rest is privately owned.).

15. *Request for Proposals: Innovation and Funding Partner for the Quayside Development Opportunity*, QUAYSIDE 9, 14, 20 (Mar. 17, 2017), https://quaysideto.ca/wp-content/uploads/2019/04/Waterfront-Toronto-Request-for-Proposals-March-17-2017.pdf [https://perma.cc/LV6U-2KBK] [hereinafter *RFP*].

16. *Id.* at 17, 30.

17. *See* AUDITOR REPORT, *supra* note 6, at 688–89, 706–07.

18. *RFP Released Today to Find Partner for Precedent-Setting Project*, WATERFRONT TORONTO (Mar. 17, 2017), https://waterfrontoronto.ca/nbe/portal/waterfront/Home/waterfronthome/newsroom/newsarchive/news/2017/march/waterfront-toronto-takes-first-step-in-building-quayside [https://perma.cc/EB35-UG9Y].

19. *See RFP*, *supra* note 15, at 7–9, 14.

The RFP involved no guarantees as to volume of work and expressly provided that the agreement would not be an exclusive one.[20]

Sidewalk Labs LLC describes itself as an "urban innovation firm."[21] Since the company's launch in June 2015,[22] it has focused on the research and development of pilot initiatives around digital connectivity and data-fueled community development, with the most prominent being its advertising-supported Wi-Fi kiosk gambit on the streets of New York, LinkNYC.[23]

Both Sidewalk and WT have roots in failed Olympic bids. Dan Doctoroff, founding CEO of Sidewalk, headed NYC's bid for the 2012 Olympics.[24] WT grew out of Toronto's bid for the 2008 Olympics.[25] From Doctoroff's telling, the entities were destined for each other: Sidewalk was searching the world for a place to test its synthesis of digital and physical infrastructure when Quayside—and Toronto, "probably the most diverse large city in the world"[26]—came calling.[27] For its part, WT was under some pressure to accelerate redevelopment after more than a decade of slow, but steady, progress.[28] It also needed cash; with two decades of tripartite government funding coming to an end in 2020/21, the agency's finances were precarious and its ongoing existence under threat.[29]

Part of the story in Toronto is a divergence of opinion on the track record for waterfront redevelopment and WT's responsibility therefor. Doctoroff described what he viewed as a *century* of development failure and a hubristic "we alone can fix it" attitude at Sidewalk.[30] By contrast, defenders of public

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20. *Id.* at 28 ("The agreement to be negotiated with the selected Proponent will not be an exclusive contract for the provision of the described Partner Scope and Deliverables. Waterfront Toronto may contract with others for goods and services the same as or similar to the Partner Scope and Deliverables or may obtain such goods and services internally.").

21. Steve Lohr, *Sidewalk Labs, a Start-Up Created by Google, Has Bold Aims to Improve City Living*, N.Y. Times (June 10, 2015), https://www.nytimes.com/2015/06/11/technology/sidewalk-labs-a-start-up-created-by-google-has-bold-aims-to-improve-city-living.html [https://perma.cc/5WRT-2BU4].

22. *Id.*

23. *See, e.g.*, Aaron Shapiro, *The Urban Stack: A Topology for Urban Data Infrastructures*, Technoscienza, Feb. 2017, at 61, 66–69.

24. Shannon Mattern, *Instrumental City: The View from Hudson Yards, Circa 2019*, Places J. (Apr. 2016), https://placesjournal.org/article/instrumental-city-new-york-hudson-yards [https://perma.cc/4F34-MY28] ("Of course, data-driven urban planning has a long history.").

25. Valverde & Flynn, *supra* note 9.

26. Stephen J. Dubner, *How to Build a Smart City*, Freakonomics (June 6, 2018, 11:00 AM), http://freakonomics.com/podcast/dan-doctoroff/ [https://perma.cc/C8LU-S5EW].

27. Daniel L. Doctoroff, *Sidewalk's Role as an "Essential Catalyst,"* Medium (Oct. 17, 2018), https://medium.com/sidewalk-talk/sidewalks-role-as-an-essential-catalyst-f2c672481872 [https://perma.cc/P67C-Z4SC] ("We had spent significant time searching for a place to bring ideas . . . to life, when Waterfront Toronto issued an RFP.").

28. *See* Valverde & Flynn, *supra* note 9.

29. Waterfront Strategic Review, *supra* note 12, at 11–13 (showing that government contributions diminished from C$1.38 billion between 2001 and 2015 to C$123.9 million between 2015 and 2025).

30. Media Events, *Canadian Club—Dan Doctoroff, CEO, Sidewalk Labs*, YouTube (Apr. 16, 2019), https://www.youtube.com/watch?v=nzPYivcQP4M [https://perma.cc/2FRC-Z5F5] ("For 107 years, [the waterfront] has stubbornly resisted development."); *see also*

redevelopment identified significant strides (particularly in the commitment of substantial public funds to flood protection and environmental remediation) that would have been even greater absent austerity measures that had starved urban investment over the past several decades.[31]

It was in this context that WT received six submissions during the unusually short six-week period allotted for RFP responses.[32] Acting without input from city staff, WT invited three firms to continue on to the second stage, at which point Sidewalk was selected.[33] In its response, Sidewalk proposed projects involving autonomous transit, high-rise laminated timber buildings, and underground utility channels,[34] and Sidewalk also promised to relocate Google's Canadian headquarters to the waterfront.[35] A year later, Ontario's auditor general found that WT chose Sidewalk precipitously without adequately consulting the appropriate governmental entities.[36] WT had first contacted Sidewalk about using Quayside as a pilot on June 27, 2016, ten months prior to issuing the RFP.[37] In itself, this might not be concerning as WT seems to have approached a number of parties prior to the call. What distinguishes the Sidewalk contact is that it might have originated higher up. Indeed, Prime Minister Trudeau himself hinted at such a possibility, referring at the launch of Sidewalk Toronto to the former chairman of Google, stating, "Eric [Schmidt] and I have been talking about collaborating on this for a few years now, and seeing it all come together is extraordinarily exciting."[38]

WT and Sidewalk entered into a Framework Agreement on October 16, 2017,[39] which seemed to create a limited partnership called Sidewalk

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Sidewalk Labs' Dan Doctoroff: Quayside and the Future of Cities, RBC DISRUPTERS (Jan. 17, 2018), https://soundcloud.com/rbcdisruptors/sidewalk-labs-dan-doctoroff-on-the-quayside-project [https://perma.cc/76Z8-KM6T] (Sidewalk's approach to Toronto was informed by a two-year research project: "Over the past 50 years . . . 150 or so attempts to create smart cities or urban innovation districts . . . . At some level, every single one of them has . . . failed, or never got off the ground.").

31. *See* Valverde & Flynn, *supra* note 9.

32. *See* AUDITOR REPORT, *supra* note 6, at 690.

33. *See* TAX INCENTIVE REVIEW, *supra* note 12, at 8.

34. *See id.*; *see also* Peter Carr, *Interview with Pamela Robinson on the Sidewalk Toronto Waterfront Development and Smart Cities*, YOUTUBE (Feb. 12, 2018), https://youtu.be/EKLEbAbOPuU [https://perma.cc/TF8N-EYBX] (describing the document as capturing "the greatest hits of urban planning").

35. *See* Carr, *supra* note 34.

36. *See* AUDITOR REPORT, *supra* note 6, at 652 ("The scope of the project, from self-driving vehicles to data collection, falls under multiple provincial and federal ministries and City departments, but Waterfront Toronto did not adequately consult with any of them prior to signing an initial agreement on October 16, 2017, and beyond.").

37. *See id.* at 689, 706.

38. Sidewalk Labs, *Announcing Sidewalk Toronto: Press Conference Live Stream*, YOUTUBE (Oct. 17, 2017), https://youtu.be/A_yg_BsJy_o?t=783 [https://perma.cc/WZF2-2E45]. It is clear from freedom of information requests that these comments were unscripted. At the same event, Eric Schmidt said: "This is not some random activity from our perspective. This is the culmination of, on our side, almost ten years of thinking about how technology could improve the quality of people's lives." *Id.* at 43:33.

39. *Framework Agreement*, WATERFRONT TORONTO 1 (Oct. 16, 2017), https://www.waterfrontoronto.ca/nbe/wcm/connect/waterfront/035e8ad1-6ba2-46f6-8915-

Toronto.[40]   WT released a four-page summary of this agreement on November 1, 2017,[41] but the parties contracted to keep the full twenty-nine-page agreement confidential, sharing it with government staff only in a limited fashion.[42] It is worth noting that both the Framework Agreement and Plan Development Agreement refer to several other agreements that have not been made public.[43]

The secrecy surrounding the Framework Agreement caused significant public pushback, as well as criticism from public officials. A quirk of WT's constitution means that it is not subject to freedom of information requests and it can make public only what it wants under a voluntary policy.[44] This meant that even a freedom of information request on the confidentiality provision concerning the Framework Agreement was itself denied.[45] So, the Framework Agreement was left a riddle wrapped in an enigma. Such secrecy might be unusual for a public authority, but it is not unusual for big tech and is a particularly favored strategy of Google. As of this writing, Google is trying to build a new city described as a Google "village" in San Jose, California, and has entered into a nondisclosure agreement with the city as it negotiates the land deal.[46]   Activists seeking details sued for more

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707176baa40f/Framework+Agreement_Executed_SUPERSEDED.pdf?MOD=AJPERES [https://perma.cc/M2QK-BTKB].

40. Sidewalk Toronto Limited Partnership is registered in British Columbia. The "general" partner is Sidewalk WT Master Developer GP, Ltd. and its mailing address is that of Google LLC. *See* Valverde & Flynn, *supra* note 9. There is no record of WT being a limited partner with Sidewalk and there is reason to believe that it could not legally be one. Email from Mariana Valverde, Professor, Univ. of Toronto, to Ellen P. Goodman (May 12, 2019, 10:04 PM) (on file with authors).

41. *Innovation and Funding Partner Framework Agreement Summary of Key Terms for Public Disclosure*, QUAYSIDE (Nov. 1, 2017), https://quaysideto.ca/wp-content/uploads/2019/04/Summary-of-Framework-Agreement-November-1-2017.pdf [https://perma.cc/5W2H-XN8J] [hereinafter *Summary of Framework Agreement*]. On the same day, and while due diligence was still underway, the WT and Sidewalk CEOs coauthored an opinion piece. *See* Daniel L. Doctoroff & Will Fleissig, Opinion, '*The Neighbourhood of the Future Starts with Your Ideas,*' STAR (Nov. 1, 2017), https://www.thestar.com/opinion/commentary/2017/11/01/the-neighbourhood-of-the-future-starts-with-your-ideas.html [https://perma.cc/K7PB-9RJT].

42. *Executive Committee Consideration on January 24, 2018*, CITY TORONTO, http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.EX30.9 [https://perma.cc/2ZYR-Z48A] (last visited Oct. 6, 2019).

43. *See Framework Agreement*, *supra* note 39, § 15 (referring to the "Initial Definitive Documents," including the "Development Plan Budget" and the "Land Methodology"). There are also various references to "Implementation Agreements," as well as to "Business and Implementation Plans." *See id.*

44. *See Accountability Policies*, WATERFRONT TORONTO, http://www.waterfrontoronto.ca/nbe/portal/waterfront/Home/waterfronthome/about-us/accountability/policies [https://perma.cc/9KFF-XJ2Q] (last visited Oct. 6, 2019).

45. Bernard Rudny, *Civic Tech: We Tried to Get a Copy of the Sidewalk Toronto Agreement*, TORONTOIST (Apr. 12, 2018), https://torontoist.com/2018/04/civic-tech-tried-get-copy-sidewalk-toronto-agreement-heres-happened/ [https://perma.cc/PP6J-TPMT].

46. Jennifer Wadsworth, *Lawsuit Targets Secrecy Agreements Linked to Google's Planned San Jose Campus*, SAN JOSE INSIDE (Nov. 13, 2018), http://www.sanjoseinside.com/2018/11/13/lawsuit-targets-secrecy-agreements-linked-to-googles-planned-san-jose-campus/ [https://perma.cc/78YG-HR2R].

transparency.[47] As in Toronto, the details of how development will happen and what the costs and benefits will be are unknown. The San Jose City Council went ahead and approved the sale.[48]

The Quayside Framework Agreement was an agreement to agree on a detailed overall master plan—the much referenced, but minimally elaborated, "Master Innovation and Development Plan" (MIDP).[49] Ultimately, MIDP implementation would require necessary approvals and actions from the City of Toronto, including "planning, building and environmental approvals, right-of-way permits, road closings, real-estate transactions, and affordable housing requirements."[50] Sidewalk agreed to provide funding of up to C$10 million for plan development and pilot projects prior to the achievement of certain "initial plan milestones" and another C$40 million after.[51] The Framework Agreement makes clear that Sidewalk wears four hats: land developer, urban planner, technology specialist, and services vendor.[52] This paper does not address the land development portion, except to note that the Framework Agreement neither assured Sidewalk of any land development rights nor precluded them in the future.[53] There was, however, a clear connection between the land and Sidewalk: the company's continued involvement depended on a public contribution of C$1.25 billion in order for WT to complete a major flood protection project across the Port Lands, which would make the land viable for redevelopment.[54] Full flood protection was accomplished in May 2018.[55] It was not clearly apparent that Sidewalk's plan was a "real-estate play" until many months after the release of the Framework Agreement,[56] when Sidewalk's internal discussions were leaked to the press.[57]

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47. *Id.*

48. Roland Li, *San Jose Approves Google Land Deal: Police Remove Protesters as Council Closes Chambers*, S.F. CHRON. (Dec. 5, 2018), https://www.sfchronicle.com/business/article/Google-s-San-Jose-land-deal-vote-Police-remove-13443835.php [https://perma.cc/F62Q-7HWH].

49. *See generally Framework Agreement*, *supra* note 39 (referencing MIDP throughout the document).

50. *See* TAX INCENTIVE REVIEW, *supra* note 12, at 2.

51. *Id.* at 19.

52. *See Framework Agreement*, *supra* note 39, §§ 11–15 (outlining the objectives, roles, and responsibilities).

53. *See id.* § 25 ("For the avoidance of doubt, [WT] shall not be obligated to transfer any land to the Master Developer prior to the approval of the MIDP.").

54. *See* AUDITOR REPORT, *supra* note 6, at 649.

55. *Id.* at 651.

56. Though the company retreated from this position, Dan Doctoroff was quoted in the deal's first coverage as saying that it "primarily is a real-estate play." Alex Bozikovic, *Google's Sidewalk Labs Signs Deal for 'Smart City' Makeover of Toronto's Waterfront*, GLOBE & MAIL (Oct. 17, 2017), https://www.theglobeandmail.com/news/toronto/google-sidewalk-toronto-waterfront/article36612387/ [https://perma.cc/8S8A-QWH8].

57. *See infra* Part I.C.

B. *Public Outrage: Between the Framework Agreement and the Plan Development Agreement*

In the nine-and-a-half-month period following the announcement of the Sidewalk Toronto project, members of the public and public officials expressed concerns about data, secrecy, scope, the corporate role in planning, and the absence of public accountability. No one could figure out what Sidewalk's business plan was, how it would make money, how it would pay for the ambitious innovations it proposed, and what long-term commitments it was prepared to make to the city. Even the question of Sidewalk's ownership or role in managing real estate was ambiguous.

Sidewalk executed a remarkably effective public relations campaign, heralding its hope to "bend the curve on quality of life," particularly around affordability and sustainability.[58] A major source of public concern was that a steward of public lands was creating public policy with, and via, a private vendor.[59] Sidewalk ran "public roundtables" as citizen engagement events with the flavor, but not the actual accountability, of public hearings.[60] Citing this and other aspects of Sidewalk's public relations work, which accounted for a sizeable portion of the C$50 million the company contributed to the project,[61] the Canadian Civil Liberties Association called the whole process one of "governance by mercenary."[62]

At every stage, ambiguity, secrecy, and slipperiness have dogged the Sidewalk Toronto project. Because Sidewalk is a Google-affiliated company, data issues were always going to be front and center. Experts immediately worried about surveillance.[63] At first, Sidewalk handled issues of data collection, data control, and privacy by offering up general and vague

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58. *See, e.g.*, Dubner, *supra* note 26.

59. Bianca Wylie, *Google Is Still Planning a 'Smart City' in Toronto Despite Major Privacy Concerns*, VICE (Aug. 1, 2018), https://www.vice.com/en_us/article/xwkv9z/google-planning-smart-city-toronto-despite-privacy-concerns   [https://perma.cc/M2AU-7HPJ] ("Waterfront Toronto is . . . a public corporation making policy with a vendor.").

60. *Id.*; *see also* AUDITOR REPORT, *supra* note 6, at 707–08.

61. Bianca Wylie, *Debrief on Sidewalk Toronto Public Meeting #3—A Master Class in Gaslighting and Arrogance*, MEDIUM (Aug. 19, 2018), https://medium.com/@biancawylie/debrief-on-sidewalk-toronto-public-meeting-3-a-master-class-in-gaslighting-and-arrogance-c1c5dd918c16 [https://perma.cc/V4B5-C6V8] (The PDA budgets "more than $11 million USD" for "communications, external affairs and engagement . . . . This program will 'seek to ensure support for the master innovation and development plan among key constituents in Toronto.' . . . The residents' reference panel is being paid for and run by a corporation. That's called a focus group." (quoting *PDA*, *supra* note 10, at 34)).

62. *Governing by Mercenary*, CANADIAN C.L. ASS'N (Jan. 29, 2019), https://ccla.org/governing-by-mercenary/ [https://perma.cc/CY9K-5TC9].

63. *See, e.g.*, Jim Balsillie, *Sidewalk Toronto Has Only One Beneficiary, and It Is Not Toronto*, GLOBE & MAIL (Nov. 29, 2018), https://www.theglobeandmail.com/opinion/article-sidewalk-toronto-is-not-a-smart-city/ [https://perma.cc/2T24-TFH2]*;* Andrew Clement, *Sidewalk Labs' Toronto Waterfront Tech Hub Must Respect Privacy, Democracy*, STAR (Jan. 12, 2018), https://www.thestar.com/opinion/contributors/2018/01/12/sidewalk-labs-toronto-waterfront-tech-hub-must-respect-privacy-democracy.html [https://perma.cc/T3RU-2ZGD].

principles (e.g., privacy by design, accountability, community benefit).[64] It also made a particularly savvy hire, the former Information and Privacy Commissioner of Ontario Ann Cavoukian, whom it had retained along with other prominent privacy professionals to help it develop privacy and data use policies. The summary of the Framework Agreement said that the parties "plan to continue to develop a thoughtful 'Privacy by Design' policy"—a reference to the design framework for which Cavoukian is best known, but there were no details.[65] Nothing about privacy or data appeared in the Framework Agreement itself. It took seven months, or until May 2018, before a high-level statement of guiding principles for data use emerged. Somewhat ironically, given the controversy over the project's secrecy, principles of transparency, proactive engagement, and community trust were chief among them.[66]

Lead critics swiftly connected concerns over data to concerns over governance and to a fundamental challenge to autonomy and freedom in urban space. Bianca Wylie, cofounder of the technology advocacy group Tech Reset Canada, quickly became an authority, reporting comprehensively and expertly on the spawning project.[67] Testifying before the Toronto City Council in January 2018, she argued that "the biggest issue is not privacy, it's governance."[68] Wylie argued that we need to think about the "data infrastructure the way we think about critical physical infrastructure. It cannot be proprietary."[69] Following this meeting, the executive committee of the council referred a request to the director of the Waterfront Secretariat, requesting that WT "[i]nvestigate the feasibility of establishing a democratically representative residents' advisory group with a fiduciary responsibility to look after residents' digital interests" and to have the goal that "[a]ll data collection should be anonymous by default"[70]—two elements that, at least before the release of the MIDP, did not further materialize. There was a growing recognition that the initial framing of the project had sidelined the question of first principles: should people be tracked in the

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64. *Our Approach to Data Privacy*, SIDEWALK LABS, https://storage.googleapis.com /sidewalk-toronto-ca/wp-content/uploads/2019/06/13214336/Sidewalk-Labs-Approach-to-Privacy.pdf [https://perma.cc/LS78-62N8] (last visited Oct. 6, 2019).

65. *See Summary of Framework Agreement*, *supra* note 41, at 2.

66. *Responsible Data Use Policy Framework*, SIDEWALK LABS (May 1, 2018), https:// storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/13221601/ Sidewalk-Toronto-Responsible_Data_Use_Framework_V0.2.pdf [https://perma.cc/GGV8-EL2G].

67. *See, e.g.*, Bianca Wylie, *Smart Cities Need Smart Governance*, GLOBE & MAIL (Dec. 5, 2017), https://www.theglobeandmail.com/opinion/smart-communities-need-smart-governance/article37218398/ [https://perma.cc/6CCJ-JC5S]; *see also* Laura Bliss, *Meet the Jane Jacobs of the Smart Cities Age*, CITYLAB (Dec. 21, 2018), https://www.citylab.com/ life/2018/12/bianca-wylie-interview-toronto-quayside-protest-criticism/574477/ [https://perma.cc/BAH6-4J9W].

68. Bianca Wylie, *My Deputation to Toronto's Executive Committee on Sidewalk Toronto*, MEDIUM (Jan. 25, 2018), https://medium.com/@biancawylie/my-deputation-to-torontos-executive-committee-on-sidewalk-toronto-jan-24-2018-ee25785bc44e [https://perma.cc/6ZZN-HQXE].

69. *Id.*

70. *See Executive Committee Consideration on January 24, 2018*, *supra* note 42.

public realm in the first place, and who should benefit? As Wylie put it, "[w]hen did we as a society say that however we move around in public space—that this is something we want to share and commodify?"[71]

A second aspect of studied ambiguity in the rollout of Sidewalk Toronto was the most basic issue of scope: the categorical difference between the twelve-acre Quayside plot and the 880-acre eastern waterfront, encompassing the Port Lands and surrounding area. In its RFP, WT scoped the project to the Quayside site but also framed the project as a pilot for revitalization of the broader eastern waterfront.[72] The summary of the Framework Agreement stated that both Quayside and the eastern waterfront would be included in planning for the MIDP.[73] A report prepared for the city council, by contrast, stated confidently that the MIDP "will address the 12-acre Quayside site" and that "[i]t is premature for City Council to be making decisions about implementation related to the redevelopment of the Port Lands."[74] The apparent tension between the summary document and the city's position created confusion; well into the project, "senior city officials were still expressing concerns" that WT was working with Sidewalk on the Port Lands when the officials thought the scope should be more limited.[75] The ambiguity about land fed an anxiety that public assets were being sold short on the promises of a gleaming new city of the future.[76] Sidewalk's investment of US$50 million began to look a little less generous once the public had invested C$1.25 billion to ready the Port Lands for development.[77] WT's own limited financing at the time of the RFP award and its need to secure ongoing funds made Sidewalk's contribution seem larger than it was in comparison to what the public was contributing.

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71. Chris Rattan, *Torontonians Should Take Control of Their Data*, NOW TORONTO (May 23, 2018, 5:29 PM), https://nowtoronto.com/news/owns-data-toronto-smart-city/ [https://perma.cc/L7A7-JE39].

72. *See RFP*, *supra* note 15, at 6 ("[I]t may be beneficial to advance the solutions, processes and partnerships proven successful through the Project to subsequent developments on the eastern waterfront."); *see also Summary of Framework Agreement*, *supra* note 41, at 4 (including visualizations).

73. *See Summary of Framework Agreement*, *supra* note 41, at 1.

74. *See* TAX INCENTIVE REVIEW, *supra* note 12, at 2.

75. Jeff Gray & Josh O'Kane, *Waterfront Toronto, Sidewalk Labs Walk Back Plans in New Deal*, GLOBE & MAIL (July 31, 2018), https://www.theglobeandmail.com/canada/toronto/article-new-deal-between-waterfront-toronto-and-sidewalk-labs-walks-back-some/ [https://perma.cc/Y88L-ZGM9] (describing a letter from interim City Manager Giuliana Carbone to Waterfront Toronto calling for "more clarity around the city's role in approving any use of its land" and seeking an explicit statement that the project was for Quayside only).

76. Jamie Powell, *Sidewalk Toronto: Delays and NDAs*, FIN. TIMES: ALPHAVILLE (July 2, 2018), https://ftalphaville.ft.com/2018/07/02/1530507600000/Sidewalk-Toronto--delays-and-NDAs/ [https://perma.cc/37PJ-FYDF] ("[T]he opportunity cost of leaving the waterfront site undeveloped until Google-fication is rolled out en masse theoretically totals billions of Canadian dollars.").

77. Memorandum from Serge Dupont to the Prime Minister of Can. (Feb. 21, 2017) (on file with authors) ("WT has indicated that it will be difficult to get a technology partner with deep pockets to commit to their smart city vision without a commitment by governments to fund the [Port Lands Flood Protection Project], which would provide a valuable location for the partner to scale up.").

Sidewalk's messaging about the economic value of Quayside suggested that the unimproved land was not worth all that much. While its book value for WT was only about C$40 million, the actual value was more than ten times this amount because the land had already been rezoned for the more desirable mixed-use development.[78] This discrepancy only added to the sense that the project was moving too fast and returning to the public much less than full value.

Over the summer of 2018, the Sidewalk Toronto project was not proceeding smoothly. WT's CEO Will Fleissig resigned,[79] forced out under pressure from the board.[80] Several weeks later, and for entirely different reasons, one of WT's most prominent and experienced board members—real estate developer Julie Di Lorenzo—resigned, claiming that contractual provisions with Sidewalk (effectively requiring consensus positioning between WT and Sidewalk) prevented her from exercising her fiduciary duties over a project that had disappointed her from its commencement.[81] She expressed dismay that Sidewalk had become WT's "filter . . . gatekeeper and . . . agent," that it was being permitted to operate outside of the agency's procurement protocol, and that numerous questions about digital governance and privacy remained unanswered.[82] The Plan Development Agreement was signed immediately after Di Lorenzo's resignation.[83] In addition, there were resignations from the new Digital Strategy Advisory Panel that WT had set up to advise on data issues, citing concerns about the lack of transparency, integrity, and trust in the process and parties involved.[84]

C. Emerging Scope: Between the Plan Development Agreement and the Master Innovation and Development Plan

On July 31, 2018, the Plan Development Agreement[85] between WT and Sidewalk replaced the Framework Agreement, which was finally made

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78. Mariana Valverde, *Public Lands, Private Control, and Housing Needs in the 'Smart City' Quayside Development*, CTR. FOR FREE EXPRESSION (Dec. 4, 2018), https://cfe.ryerson.ca/blog/2018/12/public-lands-private-control-and-housing-needs-smart-city-quayside-development [https://perma.cc/P4LH-PE2Q] (noting that Quayside "as it is already zoned" is estimated to be worth "$500 to $600 million").

79. Inori Roy, *Waterfront Toronto CEO Will Fleissig to Step Down*, STAR (July 4, 2018), https://www.thestar.com/news/gta/2018/07/04/waterfront-toronto-ceo-will-fleissig-to-step-down.html [https://perma.cc/V54G-5Q7W].

80. Amanda Roth, *Fleissig, CEO of Waterfront Toronto, Pressured Out by Board*, LOGIC (July 6, 2018), https://thelogic.co/news/exclusive/fleissig-ceo-of-waterfront-toronto-pressured-out-by-board/ [https://perma.cc/D9T4-6WHP].

81. David Rider, *Waterfront Toronto Deal with Google Sister Company Is 'Shortchanging' City, Says Board Member Who Quit*, STAR (Aug. 2, 2018), https://www.thestar.com/news/city_hall/2018/08/02/waterfront-toronto-deal-with-google-sister-company-is-shortchanging-city-says-board-member-who-quit.html [https://perma.cc/8SU6-T97L].

82. *Id.*

83. *Id.*

84. Milan Gokhale, *Towards a More Equitable Sidewalk Toronto*, CTR. FOR FREE EXPRESSION (Oct. 27, 2018), https://cfe.ryerson.ca/key-resources/commentary/towards-more-equitable-sidewalk-toronto [https://perma.cc/DF6W-F6K8].

85. *See generally PDA, supra* note 10.

public on the same day it became defunct. The published texts—of both the new and old agreements—offered for the first time some clarity on scope. In terms of land, the full text of the Framework Agreement revealed that the parties wanted the "solutions, processes and partnerships" developed at Quayside to be applied "to subsequent developments on the Eastern Waterfront, as those lands become available."[86] Further, an express part of the work plan included "a process for the transfer and valuation of land for purposes of implementation of the MIDP."[87] The PDA continued this theme, stating that the MIDP "will include both plans for the Quayside Parcel and plans at scale, including for the [eastern waterfront]," and acknowledging that this could extend to "lands not owned or controlled by the Parties."[88]

The clearest expression of scope appears in the exclusivity provisions of each agreement. Both the Framework Agreement and the PDA prohibited WT from investigating *any* other development of the entire eastern waterfront during the term of each respective agreement, i.e., until the MIDP was approved or the parties terminated the agreement.[89] This period was envisaged in the PDA to extend to December 31, 2019, and potentially further,[90] i.e., well over two years after Sidewalk won the RFP. This was— despite the unambiguous provision in the RFP stating that WT would *not* be entering into an exclusivity arrangement with its innovation and funding partner[91]—a total change in position that accounts, perhaps, for some of the parties' confounding secrecy surrounding the agreements.

Three schedules of the PDA are of particular note: procurement, intellectual property (IP), and digital governance. One of the Framework Agreement's milestones for continued collaboration between Sidewalk and WT had been agreement on "fair and arms'-length procurement standards" on the site.[92] The procurement schedule established that Sidewalk would control procurement before implementation of the MIDP at its option using competitive procedures or sole sourcing.[93] After implementation, procurement standards would "seek to balance—in the public interest—the use of market-based sourcing, on the one hand, and the direct facilitation of Purposeful Solutions [technological innovations with no suitable market alternatives] for innovation."[94] In other words, the PDA envisaged that

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86. *See Framework Agreement*, *supra* note 39, § 8.

87. *Id.* § 15.

88. *See PDA*, *supra* note 10, at 32.

89. *See Framework Agreement*, *supra* note 39, § 45; *see also PDA*, *supra* note 10, at 15.

90. *See PDA*, *supra* note 10, at 14. A July 2019 amendment to the PDA replaced the date "December 31, 2019," with "December 31, 2020." *See Amending Agreement*, WATERFRONT TORONTO (July 31, 2019), https://waterfrontoronto.ca/nbe/wcm/connect/waterfront/73ac1c93-665b-4fb8-b19b-6bfa23c2a427/PDA+July+31+Fully+Executed+%28002%29.pdf?MOD=AJPERES [https://perma.cc/BN55-VVZE].

91. *RFP*, *supra* note 15, at 28.

92. *See PDA*, *supra* note 10, at 36.

93. *Id.* (stating that Sidewalk "may provide for competitive procurement (including an invitational process soliciting bids from a set of qualified bidders) in appropriate circumstances and may provide for sole sourcing in appropriate circumstances").

94. *Id.*

development of the site would be a mix of competitive procurement and sole sourcing. What this means in practice is that Sidewalk, as the technology partner, would be in a position to create technology procurement needs for which it or another Alphabet-Google company would be a "Purposeful Solution" or a sole-source provider. Again, this is anomalous for WT, given the authority's statement that, "[s]ince inception, our funding agreements with our government partners have prohibited us from sole sourcing any contract more than $75,000."[95]

Moving to intellectual property, the intellectual property schedule addresses how the benefits of innovation connected to the project will be distributed between the parties. Here too, Sidewalk seems to be walking away with a sweet deal. The PDA is ambiguous about just who will own the data and insights generated by the Sidewalk Toronto project. The definition clause identifies that various types of intellectual property will be part of the project, including copyright material, IP in various products and services, potential patentable inventions, and brands. It also states that "[o]ther types of Intellectual Property may arise in the course of the MIDP, including data."[96] This is followed by a clause substantially similar to what Google affiliates have used before with public partners.[97] In setting out what is described as the "IP-related value drivers" brought by each partner to the project, the PDA notes that Sidewalk brings "its experiences and learnings accumulated in other markets" (limited, of course, given its youth).[98] WT brings something rather more tangible: first, "a meaningful test bed and product/service trial venue at the MIDP Site" and second, "responsible *access to datasets* necessary or useful to the design or prototyping of Products and Services."[99] Strikingly, only the test bed is recognized as a compensable contribution, with the goal being to ensure that the public is "reasonably compensated" for the opportunities provided by the test bed.[100] By contrast, there is a notable silence about any compensation for access to datasets. This detail is a key plank of Sidewalk's data strategy and an important foundation for future developments. The short shrift given to WT-furnished data contrasts with the express recognition that Sidewalk will have exclusive ownership of any IP that is generated on the site and not specified or required by the deal—what is termed in the agreement "Non-MIDP Site IP."[101]

The data questions become more interesting in connection with the schedule on digital governance, which sets out seven guiding digital design

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95. *Awarded Contracts*, WATERFRONT TORONTO, https://waterfrontoronto.ca/nbe/wcm/connect/waterfront/waterfront_content_library/waterfront+home/procurement/awarded+contracts/awarded+contracts [https://perma.cc/JF9Y-9NL4] (last visited Oct. 6, 2019).

96. *See PDA*, *supra* note 10, at 41.

97. Julia Powles & Hal Hodson, *Google DeepMind and Healthcare in an Age of Algorithms*, 7 HEALTH & TECH. 351, 354 (2017).

98. *See PDA*, *supra* note 10, at 41.

99. *Id.* (emphasis added).

100. *Id.* at 42.

101. *Id.*

principles—high-level aspirations for the collection and use of data in the project, which incorporate many best practices. The language is ambitious and borders on hyperbole. For example, one of the principles is to "create the most privacy protected/citizen-centered set of policies and governance structures in the world."[102] Another, picking up a trend from Europe, is to "[e]xplore novel forms of data governance, such as . . . an independent data trust with representation by both data subjects and citizens more generally."[103] The principles also envisage

> [n]ovel ownership structures for non-personal data, and associated open protocols and rules, to ensure public policy objectives are met, including access by and potential ownership of data by Waterfront Toronto, the City of Toronto, Province of Ontario or Government of Canada or other such third parties as deemed appropriate by the Parties.[104]

It is not clear how this schedule interacts overall with the provisions just outlined in the intellectual property schedule, but the PDA does provide that "[d]ata ownership will be addressed in greater detail through the MIDP.[105]

Some months after the release of the PDA, and one full year after the RFP was awarded, Sidewalk elaborated on its data governance vision with what it called a "Civic Data Trust" for the Sidewalk Toronto project.[106] Under the proposal, all data collected for the first time (or, we might say, "natively") in the physical space of the MIDP site would be classed as "Urban Data," and all access to, and use of, this data would be mediated by the Civic Data Trust, which would treat all applications—from Sidewalk or anyone else—on the same terms.[107] In passing, the proposal distinguishes data collected through websites or mobile phones but does not expressly exclude or limit those sources if they are designed by Sidewalk or otherwise collecting native or original data.[108]

Using the mechanism of a trust, what Sidewalk really seemed to be proposing was to unilaterally redefine all data collected within the MIDP site as Urban Data—from public spaces and from private ones, including apartments, homes, and offices "not controlled by those who occupy them"

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102. *Id.* at 47–48.

103. *See id.* at 47 ("The trust could carry a fiduciary responsibility to serve and balance data subject and public interest within a framework that treats privacy from both a public as well as a private good perspective.").

104. *Id.* at 48.

105. *Id.*

106. *See generally* Sidewalk Labs, *Digital Governance Proposals for DSAP Consultation*, WATERFRONT TORONTO (Oct. 15, 2018), https://waterfrontoronto.ca/nbe/wcm/connect/waterfront/41979265-8044-442a-9351-e28ef6c76d70/18.10.15_SWT_Draft+Proposals+Regarding+Data+Use+and+Governance.pdf?MOD=AJPERES [https://perma.cc/QB2U-B85Y].

107. *Id.* at 8, 37; *see also* Alyssa Harvey Dawson, *An Update on Data Governance for Sidewalk Toronto*, MEDIUM (Oct. 16, 2018), https://medium.com/sidewalk-talk/an-update-on-data-governance-for-sidewalk-toronto-d810245f10f7 [https://perma.cc/RQ2M-FM5R].

108. *See* Sidewalk Labs, *supra* note 106, at 14 ("Urban Data is anchored to geography, unlike data collected through websites and mobile phones, and lends itself to local governance.").

(i.e., including any leased space or anywhere offered "as a service").[109] This sleight of hand, creating a term unrecognized in law, would effectively negate any default privacy setting: everything done within the bounds of the Sidewalk Toronto project would be potentially up for grabs.[110] Sean McDonald warned, "proposing that Toronto should base ownership determinations on the urbanity of a data set is a departure from Canadian data ownership law and a precedent that, if approved, could extend far beyond this project."[111] Sidewalk recommended that Urban Data should be "de-identified" by default, presumably by those collecting the data.[112] It also offered platitudes that the trust mechanism "would be on top of—not in place of—existing law, regulation, and government enforcement."[113] For all that, it is notable that the trust mechanism envisaged *no* limits on data collection or use, nor did it ensure that there would be surveillance-free zones.[114] De-identification is a flea on the back of the elephant of data collection. Further, and radically, the proposal takes the position that all de-identified data (notwithstanding the problems associated with that concept) should be "open, free, and available" by default—under a self-certification scheme that involves no substantive review.[115] This is the flea goading the elephant on a rampage.

Experts question whether the trust has any basis in Canadian law,[116] and though it was proposed to ameliorate Sidewalk's monopolization of data, the

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109. *Id.* Sidewalk explains that "Urban Data is data collected in a physical space in the city." *Id.* This includes: "[p]ublic spaces, such as streets, squares, plazas, parks, and open spaces"; "[p]rivate spaces accessible to the public, such as building lobbies, courtyards, ground-floor markets, and retail stores"; and "[p]rivate spaces not controlled by those who occupy them (e.g. apartment tenants)." *Id.* Sidewalk describes three types of Urban Data: (1) data "[c]ollected in the public realm (e.g. pedestrian counters, street-facing cameras)," (2) data "[c]ollected in privately-owned but publicly accessible spaces . . . e.g. cameras," and (3) data "[c]ollected in fully private spaces, generally homes or offices (e.g. thermostats, home security cameras, sensors for building code compliance)." *Id.* at 16.

110. Sean McDonald, *Toronto, Civic Data, and Trust*, MEDIUM (Oct. 17, 2018), https://medium.com/@McDapper/toronto-civic-data-and-trust-ee7ab928fb68 [https://perma.cc/ST49-G645] ("The proposal advocates for Toronto to specially consider 'urban' data as a unique category, which is then treated differently—here, 'urban' data would be declared a 'public asset,' and then published. . . . Proposing quasi-nationalization of data is a big deal . . . .").

111. *Id.*

112. *See* Sidewalk Labs, *supra* note 106, at 9.

113. *Id.* at 13.

114. *See* danah boyd & Kate Crawford, *Critical Questions for Big Data*, 15 INFO. COMM. & SOC'Y 662, 662–79 (2012).

115. *See* Sidewalk Labs, *supra* note 106, at 13, 15, 16.

116. Trusts under Canadian law are ways to manage assets that are owned for the benefit of specific beneficiaries. Who owns the data that is contributed to the data trust? Since trust owners designate beneficiaries, who would Sidewalk and other platform companies designate? *See* Mariana Valverde, *What Is a Data Trust and Why Are We Even Talking About It?: Sidewalk Labs' Magic Tricks*, CTR. FOR FREE EXPRESSION (Jan. 14, 2019), https://cfe.ryerson.ca/blog/2019/01/what-data-trust-and-why-are-we-even-talking-about-it-sidewalk-labs'-magic-tricks [https://perma.cc/9QJJ-59A5] ("[D]e-identifying data doesn't make it public, it just steers commercialization into certain channels; and making privately owned data sets available doesn't make them publicly owned."); *see also* TORONTO REGION BD. OF TRADE, BIBLIOTECH: BEYOND QUAYSIDE; A CITY-BUILDING PROPOSAL FOR THE

proposal provided no defense against the company effectively enclosing the benefits of a data commons using a dominant position in data collection and analytics.[117] One of the characteristics of vendor-made policy is that it need not tie in with other governmental efforts. So here, it is unclear how a data trust into which all public data is deposited fits in with Toronto's existing Open Data Master Plan,[118] for example, or the work that Ontario and Canada are undertaking on comprehensive data laws.

Even more fundamentally, the trust proposal distracts from the first-order questions. Of these, the very first is: why is a vendor making policy? Next, asked an observer, "why are we collecting any data at all?"[119] And finally, what happened to privacy by design? Within four days of the announcement of the Civic Data Trust, Sidewalk's most prominent privacy defender, Ann Cavoukian, resigned because she said Sidewalk had reneged on its promise that all data would be de-identified at the source.[120] Her departure over such a basic feature of data flows, fully one year into the project, showed just how undeveloped or at least undisclosed the data policies were.[121]

The capstone to the interregnum between the PDA and MIDP releases was the accidental revelation, finally, of Sidewalk's business plan. Investigative news reports broke on February 14, 2019, six months after release of the PDA, that Sidewalk had been meeting regularly with government officials to preview its real estate play in the Port Lands.[122] It proposed to finance rail infrastructure on the eastern waterfront in return for a cut of property taxes,[123] arguing that it is "entitled to . . . a share in the uptick in land value on the entire geography . . . [and] a share of developer charges and incremental tax revenue on all land."[124] Sidewalk's ambition for scale had been apparent,

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TORONTO PUBLIC LIBRARY TO ESTABLISH A CIVIC DATA HUB (2019), https://www.bot.com/ Portals/0/Bibliotech%20-%20Final%20-%20Jan%208.pdf   [https://perma.cc/DT28-3KW9] (proposing that governance of Quayside data be moved to the public library).

117. *See generally* JOSE VAN DIJCK, THOMAS POELL & MARTIJN DE WAAL, THE PLATFORM SOCIETY: PUBLIC VALUES IN A CONNECTIVE WORLD 154–55 (2018); ROB KITCHIN, THE DATA REVOLUTION: BIG DATA, OPEN DATA, DATA INFRASTRUCTURES AND THEIR CONSEQUENCES (2014).

118. *Open Data Master Plan*, CITY TORONTO, https://www.toronto.ca/city-government/ data-research-maps/open-data/open-data-master-plan/ [https://perma.cc/2YDZ-WSDL] (last visited Oct. 6, 2019).

119. Gokhale, *supra* note 84.

120. Sean O'Shea, *Ann Cavoukian, Former Ontario Privacy Commissioner, Resigns from Sidewalk Labs*, GLOBAL NEWS (Oct. 22, 2018), https://globalnews.ca/news/4579265/ann-cavoukian-resigns-sidewalk-labs/ [https://perma.cc/RYN7-4GJB].

121. Laura Bliss, *How Smart Should a City Be?: Toronto Is Finding Out*, CITYLAB (Sept. 7, 2018), https://www.citylab.com/design/2018/09/how-smart-should-a-city-be-toronto-is-finding-out/569116/ [https://perma.cc/487S-TDCM] ("Sidewalk Labs has provided little information during the public engagement process about how data gathered at Quayside would be owned and used.").

122. Oved, *supra* note 14.

123. *Id.*; *see also Framework Agreement*, *supra* note 39, § 34 (In anticipation this strategy, "[t]he parties will explore financing mechanisms that monetize the future economic impacts (including through adjustments in tax assessments and other public fees) to sponsor infrastructure.").

124. Oved, *supra* note 14.

but oblique.[125] Within the space of a year and with no public engagement, Sidewalk had seemingly abandoned its reassurances that the scope of the project was modest and "additive,"[126] that it would proceed slowly from proven testing, piloting, and stakeholder engagement at Quayside, and that "geography can be a discussion after the plan is finished."[127] The news that February morning revealed something far more audacious: Sidewalk CEO Dan Doctoroff's assertion that "if there is no light rail through the project, then the project is not interesting to us"[128] and the plan for the never-previously discussed Villiers Island to house a thirty-four-to-forty-six-acre Google development.[129] Meanwhile, on Toronto's information page on "Current Projects" for the Waterfront Secretariat, the Sidewalk Toronto project continued to be referred to as restricted to Quayside, to twelve-acres, and to a carefully bound scope,[130] with no mention of the entire site.

To recap what we learned during the first eighteen months of the Sidewalk Toronto project:

(1) A public authority partnered with a big tech company to scope out a new urban district. The initial terms of the collaboration were kept secret from the public and public officials for nine-and-a-half months. The terms of the evolving MIDP, which will ultimately govern the project, were secret for at least eighteen months.

(2) The process for public engagement was staged and managed by the company, with the public as well as relevant public officials kept out of key consultations.

(3) During the working out of plan details, the public invested C$1.25 billion on real property improvements, while at the same time the public

125. *See* Media Events, *supra* note 27; *see also* Dan Doctoroff, *Sidewalk Toronto Project Update*, MEDIUM (Feb. 14, 2019), https://medium.com/sidewalk-toronto/sidewalk-toronto-project-update-d44738cdb239 [https://perma.cc/V8AW-3EAB] ("[M]uch of what's possible is only viable when different aspects of the project—particularly related to infrastructure—incorporate portions of the Eastern Waterfront.").

126. Sidewalk Toronto, *Neighbourhood Meeting with the West Don Lands Committee*, QUAYSIDE 2 (Feb. 26, 2018), https://quaysideto.ca/wp-content/uploads/2019/04/West-Don-Lands-Committee-Summary-Notes-February-26-2018.pdf [https://perma.cc/C2HM-9P8F] ("Quayside is a start of ideas . . . . We're here to be additive.").

127. Sidewalk Toronto, *Neighbourhood Meeting with the Corktown Residents and Business Association*, QUAYSIDE (June 5, 2018), https://quaysideto.ca/wp-content/uploads/2019/04/Corktown-Residents-and-Business-Association-Meeting-Summary-Notes-June-5-2018.pdf [https://perma.cc/36MV-7CDZ] ("We don't pre-suppose how interested the City is in all this. . . . If the testing or piloting works on Quayside, then the Port Lands could be another opportunity to advance towards. But it's important not to pre-suppose and say would could happen. . . . Nothing is committed at this time.").

128. Tara Deschamps, *Sidewalk Labs May Lose Interest in Quayside Project If Transit Isn't Built, CEO Says*, FIN. POST (Mar. 7, 2019), https://business.financialpost.com/pmn/business-pmn/sidewalk-labs-could-pull-out-of-quayside-project-if-transit-isnt-built-ceo-says [https://perma.cc/Q544-X6GQ].

129. *See* Doctoroff, *supra* note 125; *Project Update*, SIDEWALK TORONTO 10 (Feb. 14, 2019), https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/13210348/FEB14-SWTO-Business-Case-Overview.pdf [https://perma.cc/VZ4K-D3FZ].

130. *Quayside*, CITY TORONTO, https://www.toronto.ca/city-government/planning-development/waterfront/initiatives/current-projects/quayside/ [https://perma.cc/SND7-6H44] (last visited Oct. 6, 2019).

authority was contractually precluded from considering other developers, despite it having solicited proposals on the express condition that the agreement was nonexclusive.

(4) Within the geographic bounds of the project, which pivoted from a mere twelve-acres to a sprawling 880-acres, the tech company unilaterally redefined all data collected natively from the site as "Urban Data," subject to rule by a poorly defined Civic Data Trust.

(5) Numerous resignations of high-profile advisors to the project and public opposition did not slow down the process or cause a rethinking of the whole approach, which moved on despite there being inadequate policies in place to deal with data governance, procurement, intellectual property, and many other fundamental aspects of the project.

II. SIDEWALK'S PLATFORM GOVERNANCE PROBLEMS

We now turn from the troubled launch of the Sidewalk Toronto project to the main dangers of such a venture, if realized, to democratic governance. To some degree, this substantive critique stands on its own, independent of the secrecy and slipperiness of the launch process. But in other respects, the initial process deficiencies represent and intensify concerns related to the imagined city. After describing Sidewalk's vision for Toronto's smart city platform, based principally on a close reading of the vision section of Sidewalk's submitted response to the RFP,[131] as elaborated in public statements over the first eighteen months of the project, we identify three major pitfalls for the public: privatization, platformization, and domination.

A. The City as Platform: Sidewalk's Vision

One of the central rhetorical pivots of Sidewalk's imaginings for the Toronto waterfront is what it terms the "digital layer." The digital layer is an animating idea for the project, rather than a material reality.[132] The digital layer runs through, under, and around the "physical layer" of the built environment. It consists of data and the things data touches, like sensors and cameras, data analytics and storage, wireless and wired infrastructure, and portals and devices. The digital layer is in essence Sidewalk's version of the "platform concept," which creates "the baseline conditions for urban innovation."[133] With the use of this language, Sidewalk explicitly adopts the metaphor of the "city as platform"[134] and invites the city itself to emulate the

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131. *Request for Proposals No. 2017-13 Response: Project Vision*, SIDEWALK LABS (Oct. 17, 2017), https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2017/10/13210553/Sidewalk-Labs-Vision-Sections-of-RFP-Submission.pdf [https://perma.cc/6ZTM-Q6J9] [hereinafter *Vision*]. Only a portion of Sidewalk's response to the RFP has been made public.

132. Sidewalk Toronto, *Meet Sidewalk Toronto: Kristina and Craig Talk Open Urban Data*, YOUTUBE (Mar. 29, 2018), https://youtu.be/LKN_EHkjCcs [https://perma.cc/MUY3-QTHH].

133. *Vision*, *supra* note 131, at 17.

134. This formulation has been used elsewhere as an analytical frame for digitally networked urban governance. *See generally, e.g.*, DAVID BOLLIER, ASPEN INST., THE CITY AS

platform technology companies like Amazon and Google that cities hope to attract.[135]   Sidewalk sells the digital layer as the engine for the edge innovation, the startups, and the tech businesses of the silicon idyll.

Figure 1: The City as Platform[136]
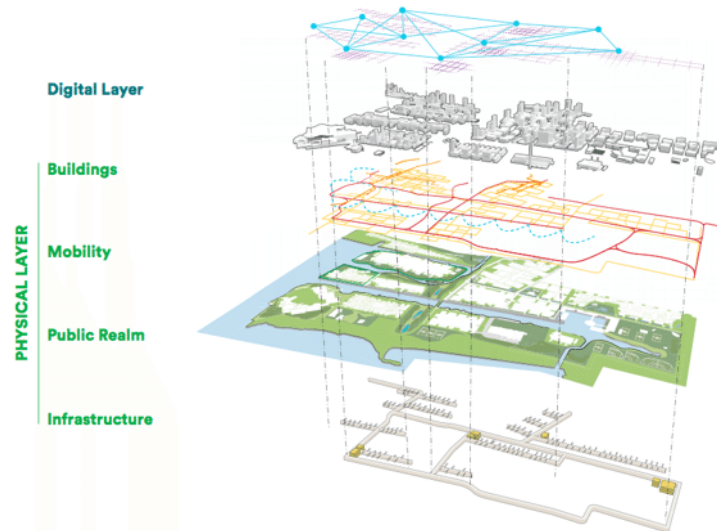
In the idealized city as platform, ubiquitous sensors will feed data into automated street design, turning streets as needed into conduits for bikes or pedestrians or priority vehicles. Data will enable flexible use of streets, buildings, and public space as changing demands are sensed and datafied. Responsive applications built on top of the platform can efficiently deliver services (from food to sanitation to work space) "just-in-time" for public consumption.   The platform design explicitly recapitulates the internet's network architecture:

> Just as computer and smartphone operating systems keep the device running smoothly but also allow innovators to create new apps, the digital layer is designed to keep the city running smoothly but also encourage residents, staff, startups, and larger companies to bring their most creative ideas to bear on improving life in the city.[137]

PLATFORM: HOW DIGITAL NETWORKS ARE CHANGING URBAN LIFE AND GOVERNANCE (2016), http://csreports.aspeninstitute.org/documents/CityAsPlatform.pdf   [https://perma.cc/JLL7-RA55]; STEPHEN GOLDSMITH & NEIL KLEIMAN, A NEW CITY O/S: THE POWER OF OPEN, COLLABORATIVE, AND DISTRIBUTED GOVERNANCE (2017); Tim O'Reilly, *Government as a Platform*, INNOVATIONS, Jan. 2011, at 13.

135. *See generally* Jathan Sadowski & Roy Bendor, *Selling Smartness: Corporate Narratives and the Smart City as a Sociotechnical Imaginary*, 440 SCI. TECH. & HUM. VALUES 540 (2018).

136. *Vision*, *supra* note 131, app. at 19.

137. *Id.* at 66.

Indeed, in 2016, Sidewalk analogized the city to the network stack of a computer operating system, in which citizen services and even city administration itself become just user-facing applications, driven through the digital layer.[138] This is "public administration as app," with policy and accountability pushed to the edge of a network run on infrastructure owned and operated by someone else.

Figure 2: The City as a Network Stack[139]
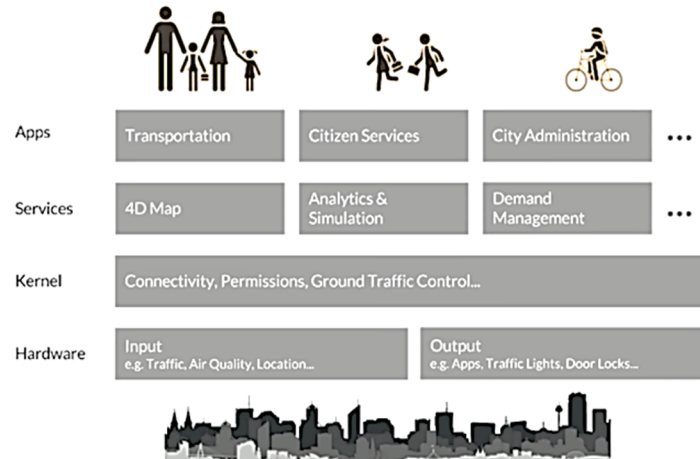
Sidewalk's vision for Toronto's eastern waterfront is a network of neighborhoods "networked . . . to operate at a system scale, like the internet, generating advantages that increase with each new node."[140] The internet, as a network of networks, confers obvious connectivity advantages. But what is the advantage of networked neighborhoods when one of the meanings of neighborhood is to be distinct and set apart? In Sidewalk's vision, it is to attract businesses to supply goods and services through the platform. "Whereas a neighbourhood of a few thousand people will produce a modest market opportunity to attract third parties to the platform, a district of networked neighbourhoods will be powerful enough to draw companies and entrepreneurs from all over to take part in Toronto's new ecosystem."[141]

In all aspects of Sidewalk's envisioned city design, data is infrastructural. It is the foundation for all downstream production of goods and services.[142]

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138. Sidewalk Labs, *Reimagining the City as a Digital Platform*, YOUTUBE (Feb. 22, 2016), https://youtu.be/bPu8HvD7d9U [https://perma.cc/HT6C-8UJY] ("What if you could innovate across the whole stack, all at once . . . in a city?").

139. *Id.*

140*. See Vision*, *supra* note 131, at 21.

141*. Id.*; *see also id.* at 51–54 (describing the eastern waterfront as a "[n]eighbourhood of neighbourhoods").

142*. See generally* BRETT M. FRISCHMANN, INFRASTRUCTURE: THE SOCIAL VALUE OF SHARED RESOURCES 61–114 (2012); Jean-Christophe Plantin et al., *Infrastructure Studies Meet Platform Studies in the Age of Google and Facebook*, 20 NEW MEDIA & SOC'Y 293 (2018).

Private functions like commerce, public ones like building inspections, and hybrid ones like housing or transportation are all mediated by data flows, predictive analytics, and automated decisions. Urban governance is reconceptualized as facilitating the collection and transmission of data to applications and services that run on top of the platform.[143] In effect, the city morphs from polis to bazaar, from a place of thick ties to thin transactions where digital bids connect people to services and applications.

B. Privatization

The marketplace model for the city highlights the business orientation of a project that from the start failed the first test of public administration: engaging the governed.[144] Even with formal institutional approval at the outset, there is a danger that a project like Sidewalk Toronto achieves private gain at the expense of the public—incrementally but comprehensively, from planning to implementation. Above, we discussed IP ownership and data control, through which the privatization of public assets can be achieved alongside old-fashioned land deals. Here, we turn to governance.

Hidden in Sidewalk's fine renderings of mass timber construction, adaptable roads, and configurable parks lies the most significant feature of the deal: the substantial delegation of public governance to a private platform. Whoever controls the "digital layer" of the city exerts control over the activities transacted through it. Sidewalk designed the digital layer and Sidewalk affiliates may operate it, intermediating access to traditional public spaces and services, like the curb, sidewalks, parks, and transport, as well as to private ones, like housing, health, and thermostats. As more and more of life is transacted through the digital layer, regulation and its reach are encoded in that layer, as discussed below.[145]

WT signaled out of the gate that it was willing to cede governance. Its RFP sought a partner to "create the required governance constructs to stimulate the growth of an urban innovation cluster, including legal frameworks (e.g., intellectual property, privacy, data sharing)."[146] From the start, a public entity tasked a vendor, doing service also as developer and planner, with making public policy. Among the most important levers of urban governance are planning, regulation, and enforcement.[147] Sidewalk,

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143. Another layer—the "standards layer"—provides an interface between the digital layer and the "residents, administrators, and developers using and building atop the platform." *Vision*, *supra* note 131, at 18.

144. The public fora that Sidewalk Toronto hosted did not meet the mark. They skated over data collection, procurement, IP, and other issues, while focusing public attention on much less contested questions about building materials and amenities.

145. If code is law, then the digital layer, embodying code, is law. *See* LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE 6 (1999).

146. *See RFP*, *supra* note 15, at 17.

147. JONATHAN F. P. ROSE, THE WELL-TEMPERED CITY: WHAT MODERN SCIENCE, ANCIENT CIVILIZATIONS, AND HUMAN NATURE TEACH US ABOUT THE FUTURE OF URBAN LIFE 138 (2016) (identifying several levers of city control: "*vision* of the city; a *master plan* for how to implement the vision, with specific indicators of its components; *data collection* so that the city has intelligence about its circumstances and can create feedback mechanisms to [achieve

like any company in this position, may be able to exert significant control over how all are conducted, with no credible social license for doing so.

1. Planning

Simply by wielding the "pen" in designing the master plan for Toronto's new neighborhood, Sidewalk has exercised a significant public planning function. Many cities have "digital master plans"[148] or "smart city" plans that are city-led.[149] The city and its residents identify the problems and define the solution space. With Sidewalk Toronto, by contrast, Sidewalk defines the problems and the solutions that Alphabet companies, it seems, will be uniquely positioned to supply. Sidewalk may design the arena for its own advantage and then play in it as a real property "vertical developer,"[150] as a digital layer (perhaps sole-source) vendor, and as an infrastructure owner.[151]

Though Sidewalk boasted that it undertook unprecedented public engagement in the lead-up to the MIDP—consulting "literally 20,000 people"[152]—the detailed chronology set out in Part I above shows that the public and responsible authorities were blocked from the real action. The Framework Agreement, which governed the first nine-and-a-half months of the deal, was pushed through the WT board without enabling time for deliberation, consensus, or amendment. City councilors and citizens were not shown the agreement until it was obsolete, replaced by a new agreement, the PDA. Again, that agreement was formed in private, ushering in facts on the ground without public deliberation or engagement. It is difficult to know where to anchor serious scrutiny. On one day, Sidewalk dumped into the public realm two privately formed final agreements, problematic and unanticipated terms for ongoing procurement and intellectual property management, data governance nostrums, as well as sweeping design fantasies.[153] And then there was the mystification of scope. For at least fifteen months, the project partners framed the scope of the project as being principally about Quayside, a relatively modest twelve-acre waterfront site.

its vision]; *regulations*, such as zoning and building codes; *incentives*, including tax credits and loan guarantees; and *investments* in infrastructure such as transportation, water, and sewer systems").

148. Anthony Townsend & Stephen Lorimer, *Digital Master Planning: An Emerging Strategic Practice in Global Cities* (N.Y.U. Marron Inst. of Urban Mgmt., Working Paper No. 25, 2015), https://marroninstitute.nyu.edu/uploads/content/Working_Paper_25_Digital_Master_Planning.pdf [https://perma.cc/W5BR-A2R6] (describing the digital master plans of Chicago, London, San Francisco, Dublin, Singapore, and Hong Kong, as well as New York City's "Roadmap" and Barcelona's "Smart City Strategy," both written in 2011).

149. *See, e.g.*, CITY OF CHI., THE CITY OF CHICAGO TECHNOLOGY PLAN (2013), https://techplan.cityofchicago.org/wp-content/uploads/2013/09/cityofchicago-techplan.pdf [https://perma.cc/VFQ5-VZ7J]; CITY OF PHILA., SMARTCITYPHL (2018), https://www.phila.gov/media/20190204121858/SmartCityPHL-Roadmap.pdf [https://perma.cc/NR6Y-CV47].

150. *See PDA*, *supra* note 10, at 6.

151. *See* Oved, *supra* note 14.

152. *See* Media Events, *supra* note 30.

153. *See supra* Part I.C.

In February 2019, however, it became apparent that the project really concerned the entire 880-acre waterfront stretch, which confirmed critics' and cynics' worst suspicions.[154]

Meanwhile, the city and its citizens would have to wait for at least another eighteen months for the release of the MIDP, a document that would ultimately run over 1500 pages[155] and was negotiated in secret along the lines of the earlier agreements. While concerns about data governance and privacy were constantly volleyed between critics and defenders of the deal, these merely served to embed a sense of inevitability about the problematic aspects being examined here involving privatization, platformization, and domination. At no point was there any capacity, either at the government level or within the processes of the project partners themselves, to surface and protect against any of these areas of concern.

The privatization of planning proceeds apace as the imagined city develops. In Sidewalk's vision, the networked neighborhood is continuously planned even after the arena is built and the game is underway. Digital layer data will enable ongoing modeling of urban infrastructure needs. Indeed, Sidewalk envisions a "[m]odel component . . . [that] can simulate 'what if' scenarios for city operations to inform long-term planning decisions."[156] Given the amount of data that Sidewalk is likely to have, its planning tools will have significant advantages over competitors and almost certainly boost Sidewalk's prospects as a planner. It seems likely that the model will be implemented by the Sidewalk affiliate Replica. This tool creates data facsimiles of real populations by scrambling the personal data of real people into synthetic copies of "virtual" individuals.[157] Replica has already proven to the satisfaction of one jurisdiction that its technology is without peer, having won a sole-source contract with the state of Illinois to provide mobility data.[158]

154*. See supra* Part I.B.

155*. See Sidewalk Lab's Proposal: Master Innovation and Development Plan*, QUAYSIDE, https://quaysideto.ca/sidewalk-labs-proposal-master-innovation-and-development-plan/ [https://perma.cc/Y7XM-7Y4S] (last visited Oct. 6, 2019); *see also supra* Part I.B.

156. NICOLAS DOUAY, URBAN PLANNING IN THE DIGITAL AGE 30 (2018). Douay describes a generic big data algorithmic planning process as one that selects "the best choice according to the intentions, scripts or scenarios from which it was designed. . . . [It embodies] visions of the world, the city as well as planning processes, even if these projections may be unconscious or at least not very explicit." *Id.*

157. Sidewalk Labs, *Replica: A Next-Generation Urban Planning Tool*, YOUTUBE (Aug. 24, 2018), https://youtu.be/YKIrSUCeOtU [https://perma.cc/2QDX-RXZC] (explaining that Replica is "a tool to explore how, where, when, and why people move around a region" based on millions of people's full details of daily life); *see also* Ava Kofman, *Google's Sidewalk Labs Plans to Package and Sell Location Data on Millions of Cellphones*, INTERCEPT (Jan. 28, 2019), https://theintercept.com/2019/01/28/google-alphabet-sidewalk-labs-replica-cellphone-data/[https://perma.cc/ZU5T-YUKG].

158. *Sidewalk Labs Replica Tool and Data Notice,* ILL. DEP'T TRANSP., https://webapps.dot.illinois.gov/WCTB/ConstructionSupportNotice/BulletinItem/0ff7ba88-81f7-4cd8-b24b-bc153d493725?page=1 [https://perma.cc/DW6G-HV4C] (last visited Oct. 6, 2019) (Replica "uses a number of sources, including mobile carrier data, location data from third-party aggregators and Google location data, to generate travel data for a region. . . . [T]he data sample is not limited to only Android devices. Additionally, these data are

2. Regulation and Enforcement

As discussed in Part I above, Sidewalk's development of a data governance regime for Quayside provoked criticism that policymaking was being privatized without the normal process of hearings, open records, and accountability.[159] This private lawmaking could become harder to see, but no less pronounced, after ground is broken and control moves to the "cloud" of data flows. Control of data and data analytics confers regulatory power: permissions *to* and prohibitions *against*. The digital layer, if realized according to Sidewalk's vision, effectuates permissions and prohibitions, including those governing curbside parking and driving speeds, in all cases dynamic and demand-based.[160] Such agility will require highly responsive and mutable law that leaves the details of "saying what the law is" and, perhaps even of enforcement, to the platform. Land use and trash regulation provide two examples.

When it comes to land, traditional Euclidean zoning deploys bureaucratic codes to specify distinct land uses, geographically separated, in order to limit negative externalities imposed on neighbors.[161] Sidewalk envisions something different on the future waterfront: an "outcome-based code to govern the built environment."[162] The code would consist of "a new set of simplified, highly responsive rules that focus more on monitoring outputs than broadly regulating inputs."[163] Land would not be zoned for residential or manufacturing purposes but instead opened up to flexible use, provided that the use does not exceed some measure of impact (e.g., noise, smoke, traffic) outside the "envelope" of exclusivity. This vision of patrolling dynamically for negative externalities, rather than zoning for compatible uses, requires performance targets and "embedded sensing for real-time monitoring." Sidewalk nominates itself to develop this system of "automated regulation." Sidewalk's procurement and development proposals put it *in limina* between the regulated and regulator and its automated zoning is ruled

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collected from individuals for months at a time, allowing for a complete picture of individual travel patterns.") According to the notice, the estimated award for providing this data over thirty-six months is US$3.6 million. *Id.*

159. *See Governing by Mercenary*, *supra* note 62 ("Instead of debating, say a data and privacy policy in Cabinet or municipal government, then pitching it through the media, debating it in the legislature, voting on it, recording that vote for the next election, then entrenching it in statute and regulations; instead of all that (*aka* democracy) . . . . The mercenary just gets the job done, and gets paid. There is no vote, no debate, no statute, no regulation, no accountability.").

160. This is a general aspiration of smart city development. *See* Rose, *supra* note 147, at 151 (noting that the smart city "may tune its zoning code, infrastructure investments, and incentives in real time for public benefit").

161. *See generally* Village of Euclid v. Ambler Realty Co., 272 U.S. 365 (1926). Another way to view traditional zoning is as a tool to preserve positive externalities, or the commons. *See* Sheila R. Foster & Christian Iaione, *The City as a Commons*, 34 Yale L. & Pol'y Rev. 281, 311–12 (2016) ("Through its system of separation and exclusion, zoning protects the commons, at various scales, by helping to create and then preserve the 'character' of the city, neighborhood, or block.").

162. *See Vision*, *supra* note 131, at 120.

163. *Id.*

by public law.164 At the same time, it may enjoy "substantial forbearances from existing laws and regulations."165

The distance between regulation and enforcement can be short in an automated system. Sidewalk claims that the outcome-based code "will reward positive behaviors and penalize negative ones."166 What sort of process will there be around penalties? Will outcomes simply be chosen by majority rule, dependent on constant connectivity and prompts?167 Will the government have the opportunity to set enforcement priorities? Dystopic visions abound of a new cannon of "personalized law,"168 adjoined to constant surveillance or what Rob Kitchin calls "control creep" and "anticipatory governance."169 Landlords in some cities are already taking advantage of smart apartments to remotely lock out tenants over alleged contractual violations.170 Might these private dispute resolutions, which complement or replace public ordering, be outsourced to the digital layer? And if they are, who will control the lawmaking resident in the code? Sidewalk's command of the early stage of development suggests an answer.

Another example, this time in trash disposal regulation, shows that even if the government sets regulatory standards and enforces them, control over data can serve a de facto private lawmaking function. Sidewalk expects to "deploy a digitally enabled smart chute system that will help pay-as-you-throw waste regimes succeed in multifamily buildings by making it possible to differentiate between recyclables and trash."171 In other words, the data

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164. *Id.*

165. *Id.*

166. *Id.*

167. Sidewalk's head of engineering, Craig Nevill-Manning, uses an example of what is possible through such code and governance: "Imagine I want to have a block party . . . . We can quickly survey everybody who lives around and get them to say, sort of, thumbs up, thumbs down; if we get enough thumbs up, kind of, the permit is automatically issued." Sidewalk Toronto, *supra* note 132.

168. The *University of Chicago Law Review* recently held a symposium on the topic of "personalized law." *See Symposium on Personalized Law*, U. CHI. L. REV., http://lawreview.uchicago.edu/symposium-personalized-law [https://perma.cc/BB7P-TXY4] (last visited Oct. 6, 2019).

169. *See* KITCHIN, *supra* note 117, at 178–79; *see also* Torin Monahan, *Surveillance as Governance: Social Inequality and the Pursuit of Democratic Surveillance*, *in* SURVEILLANCE AND DEMOCRACY 91, 98 (K. D. Haggerty & M. Samatas eds., 2010); Jathan Sadowski & Frank Pasquale, *A Spectrum of Control: A Social Theory of the Smart City*, FIRST MONDAY (July 6, 2015), https://firstmonday.org/article/view/5903/4660 [https://perma.cc/DL8K-F2YF] (discussing Lawrence Solum's thought experiment about the thoroughly instrumented city simply lifting traffic offenders from the streets with strategically placed cranes).

170. Alfred Ng, *Tenants Worry Smart-Home Tech Could Be Abused by Landlords*, CNET (Apr. 4, 2019), https://www.cnet.com/news/tenants-worry-smart-home-tech-could-be-abused-by-landlords/ [https://perma.cc/99SY-DNV8].

171. *See Vision*, *supra* note 131, at 22. Elsewhere, Sidewalk Labs says that the only sensors it "expects to deploy include (1) air quality sensors (carbon monoxide, particulate matter, sulfur dioxide); (2) noise level sensors (noise generated by vehicles, construction, human activity); (3) radar, laser rangefinding, and computer vision (flow of vehicles, cyclists, pedestrians, state of the urban environment); and (4) hyperlocal weather (temperature, wind speed, humidity)." *Id.* at 72. The development of Replica, however, shows that intensive location tracking is also within view.

about disposal patterns—some of it invariably sensitive and revealing[172]—will be used to meter disposal fees. This data may be combined with other personal data to "nudge" individual consumption and disposal habits and might become what Karen Yeung has called a "hypernudge."[173] Sidewalk will apparently control this sensor-based chute data. City officials will access this data through an app, like any other user. The city, in this vision, is reduced to a client. It stands in the shoes of the third-party app developer, with no greater access or authority than any other player.[174]

C. Platformization

Sidewalk's vision raises another consequential concern for urban governance that is harder to define: these are the issues inherent in a city-as-platform model that radically unbundles systems, spaces, and services into sets of transactions optimized according to market logic. The model has been theorized as a way of using public data to catalyze economic activity and improve city services.[175] In broad strokes, there are two distinct versions of platform values. In one version, the city intermediates between the public's data and service providers, prioritizing public benefit. In the other, commercial platforms like Facebook and Uber intermediate, prioritizing profit or market share. Sidewalk obscures just which version of platform its digital layer will be and what it will be optimized for.

The primary function of Sidewalk's digital layer is to "collect[] data on the urban environment via sensors."[176] Who is doing the collecting is left vague. In some iterations, the disembodied platform is itself the agent. *It* "detects pedestrian congestion," for example, and then *it* "can experiment with ways to create better pedestrian flow."[177] This suggests that maybe the platform will be public in some sense, like basic infrastructure, and commercial entities will access it from the edge. Elsewhere, Sidewalk itself claims agency. It is *Sidewalk* that will "experiment . . . with various weather mitigation strategies . . . [and] get real-time feedback . . . from a high-density mesh of sensors . . . [to] enable the real-time evaluation of different interventions."[178] In this case, it seems that the platform will be commercial. Commercial entities, or at least Sidewalk, will provide the utility.

172. *Ann Cavoukian Talks About Civil Liberties Group and Sidewalk Labs*, JOHN OAKLEY SHOW (Apr. 18, 2019), https://omny.fm/shows/the-john-oakley-show/ann-cavoukian-talks-about-civil-liberties-group-an [https://perma.cc/WQC4-7Q9U].

173. *See generally* Karen Yeung, *'Hypernudge': Big Data as a Mode of Regulation by Design*, 20 INFO. COMM. & SOC'Y 118 (2017).

174. *See Digital Strategy Advisory Panel Technology Update*, SIDEWALK TORONTO (Dec. 13, 2018), https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/13210444/12.13.18_SWL_DSAP.pdf [https://perma.cc/HL6M-UDBN].

175. *See supra* note 134 and accompanying text.

176. *See Vision*, *supra* note 131, at 33.

177. *Id.* at 79.

178. *Id.* When a company is allowed to deploy sensors in exchange for feeding the data to the city, the city's access to that data depends on the continuation of the deal. LinkNYC kiosks allow Sidewalk to gather environmental data the city needs "to meet public health regulations and figure out the 'livability' of streets" in exchange for giving the company "a playground

Crucially, ambiguity about the platform depoliticizes questions of planning, frustrates accountability, and removes points of entry for citizen contestation. Because the digital layer is conspicuously designed with the internet as a model, it seems only appropriate to extrapolate platform values from existing digital platforms. Chief among them are efficiency and datafication, both of which are problematic as foundational values for cities and urban life.

1. Efficiency

The presentation of the digital layer in Sidewalk's vision demonstrates something of the nonchalant "no worries" assurances of neutrality that accompanied the rollout of information platforms in the early 2000s. Tarleton Gillespie points out that the metaphor of the platform as a "raised level surface" abets the claim of neutrality.[179] But platforms are not neutral.[180] Online platforms "intervene in and reshape value regimes and economies."[181] They advance a substantive vision of the good—whether that is "engagement" on social media or cheap rides through Uber—and enforce that vision through data flows.[182] Similarly, smart city technologies might be "portrayed and positioned as technical, pragmatic, common-sensical, and non-ideological," but in reality, they "are inherently politically and ideologically loaded in vision and application, reshaping in particular ways how cities are managed and regulated."[183]

To be sure, Sidewalk's vision aims to hit ambitious targets for affordable housing, sustainability, inclusion, and other public goods.[184] These are

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for building new services." Mark Harris, *Inside Alphabet's Money-Spinning, Terrorist-Foiling, Gigabit Wi-Fi Kiosks*, RECODE (July 1, 2016, 7:00 AM), https://www.recode.net/2016/7/1/12072122/alphabet-sidewalk-labs-city-wifi-sidewalk-kiosks [https://perma.cc/KZZ9-Q97G] (quoting Alexei Pozdnoukhov, director of the Smart Cities Research Center).

179. Tarleton Gillespie, *The Politics of 'Platforms,'* 12 NEW MEDIA & SOC'Y 347, 350–52 (2010) (elaborating on the meanings of "platform" and the canny use of the term to suggest "a progressive and egalitarian arrangement, promising to support those who stand upon it," while eliding the exclusionary and directive possibilities of particular platform arrangements).

180. Anupam Chander & Vivek Krishnamurthy, *The Myth of Platform Neutrality*, 2 GEO. L. TECH. REV. 400 (2018).

181. *See* VAN DIJCK, POELL & DE WAAL, *supra* note 117, at 24, 25 ("The questions whose interests a platform's activity serves, which values are at stake and who benefits are central in disputes concerning the creation of public value in the platform society.").

182. Ellen P. Goodman & Julia Powles, *Facebook and Google: Most Powerful and Secretive Empires We've Ever Known*, GUARDIAN (Sept. 28, 2016, 3:00 AM), https://www.theguardian.com/technology/2016/sep/28/google-facebook-powerful-secretive-empire-transparency [https://perma.cc/T959-FV2W].

183. Rob Kitchin et al., *Smart Cities and the Politics of Urban Data*, *in* SMART URBANISM: UTOPIAN VISION OR FALSE DAWN? 16, 17–18 (Simon Marvin, Andrés Luque-Ayala & Colin McFarlane eds., 2015).

184. *Draft Quayside Site Plan*, SIDEWALK TORONTO 20, 24–25 (Nov. 29, 2018), https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/13210448/18.11.29_Quayside_Draft_Site-Plan.pdf [https://perma.cc/FAN3-SFZZ] (claiming that the Quayside development will result in a 75–85 percent reduction in greenhouse gas emissions and that 40 percent of the site will be dedicated to below-market housing); *see also* Jesse Shapins, *Quayside: A New Vision for Toronto's Waterfront*, MEDIUM (Nov. 29, 2018),

values imposed from outside the platform, congruent with Sidewalk's ambitions to build in Toronto an idealized prototype, uninhibited by revenue demands and supported by patient capital. But the values structurally embedded in the platform are not these. The city as platform privileges efficiency.[185] In Sidewalk's vision, living, working, and moving—and, as discussed in the previous section, governing—are all modules on a platform connecting users to services through data. Here is where Sidewalk's definition of "urban data" (i.e., data collected in a physical space in the city) comes into its own and has its most pernicious effects. Essentially, apart from completely personally owned spaces and devices—an increasing rarity in the envisioned waterfront—all places become exposed and marketized. Formerly static assets—whether that is park space, curb space, marketspace, office space, or housing space—are provided "as a service," just-in-time, according to usage needs.[186] Planning is a continuous process that happens in real time in response to flows of urban data, so that urban resources are allocated to entertainment, quiet reflection, food trucks, cycling, or housing based on constantly refreshing data inputs about demand, possibly filtered through the profit motive of platform players.

As Adam Greenfield has observed, platform technics reduce friction between impulse and consumption.[187] The ease of platform-mediated consumption can "short-circuit the process of reflection that stands between one's recognition of a desire and its fulfillment via the market."[188] It is possible that the demand the platform registers should not be gratified upon considered reflection or upon considering the collective good. If we imagine that in any given moment, there is more demand to play soccer in a field than to reseed it, the platform will deliver soccer. If there is more demand (measured by those placing the most orders) for instant drone delivery than for a walk to the corner shop, retail will succumb. This is the continuous planning process that currently favors cheap ride-shares over public transportation. A brutally efficient demand-driven city-as-platform model might perhaps be able to accommodate public interests by accounting for negative and positive externalities in the model (e.g., congestion pricing). For this to happen, regulators and coders would have to collaborate. The studied ambiguity of Sidewalk Toronto about agency in the digital layer,

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https://medium.com/sidewalk-toronto/quayside-a-new-vision-for-torontos-waterfront-60d969d16c5f [https://perma.cc/A4W3-2YU5].

185. *See* KITCHIN, *supra* note 117, at 113–27.

186. *See Vision*, *supra* note 131, at 18 (describing "mobility as a service"); *see also id.* at 19 ("Sidewalk also will pilot a public realm management system, enabled by sensor arrays, that monitors air quality, asset conditions, and usage, helping managers respond quickly to emerging needs, from broken benches to overflowing waste bins. This system will enable tests of reservable outdoor spaces for short-term uses, such as pop-up shops. Using flexible building structures, Sidewalk is exploring a next-gen bazaar, a tech-enabled makerspace with activity stalls that can be refreshed quickly").

187. ADAM GREENFIELD, RADICAL TECHNOLOGIES: THE DESIGN OF EVERYDAY LIFE 36 (2017).

188. *Id.* (discussing "the colonization of the domestic environment by . . . networked products and services").

coupled with the embrace of privatized regulation, undermines confidence that such a collaboration would work in the public interest.

Platform discourse tends to avoid the tensions between the public interest, on one side, and efficiency or market value on the other. It fuses them. José van Dijck observes that, "[i]n the platform society, the creation of public value toward the common good is often confused with the creation of economic value serving a nondescript amalgam of private and public interests."[189] Sidewalk incorporates public value concepts, leaning on Jane Jacobs's vision of "placemaking" along with new urbanism and sustainability. Sidewalk says it wants to pursue "[s]ocial cohesion and civic engagement."[190] These are the public values exogenous to the platform. But the method offered to attain these values is always and only digital connectivity—the platform. Again, if the digital layer is controlled by the public or their representatives, according to public standards, checks, and balances, it could conceivably be optimized for the public interest. But if controlled by Sidewalk or other commercial vendors, it will most likely be optimized for efficiency and the efficient production of material value.

2. Datafication

Platforms designed for efficiency break down the material and social world into data flows. All activities—work, leisure in public, leisure in private, transport—are part of the flow. The built environment will facilitate the data flow and be constructed by it. If allowed to, platforms will try to parse every bit of existence into data. This kind of datafication has prosocial and antisocial implications.

On the "pro" side, structures "optimized for optionality"[191] create flexibility in urban shelter. Sidewalk depicts lofts that are designed to park cars until such time as autonomous vehicles reduce the demand for parking; thereafter they can be repurposed, floor-by-floor, pod-by-pod, for residential or other use. Such "radical mixed-use"[192] can in theory create more affordable housing and "incremental real estate value."[193] In addition, the "radical sharing of durable goods,"[194] like cars, home appliances, and tools, can, again in theory, improve efficiency and reduce resource use.

On the "anti" side, the atomization of space into modules for work and sleep enacts a new scheme of value extraction in space that can effectuate "the extension of economic rationality into every corner of human life."[195]

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189. *See* VAN DIJCK, POELL & DE WAAL, *supra* note 117, at 23; *see also* Paul Langley & Andrew Leyshon, *Platform Capitalism: The Intermediation and Capitalisation of Digital Economic Circulation*, 3 FIN. & SOC'Y 11, 25–26 (2017). *See generally* NICK SRNICEK, PLATFORM CAPITALISM (2016).

190. *See Vision*, *supra* note 131, at 18.

191. *Id.* at 114.

192. *Id.* at 52–53.

193. *Id.* at 119.

194. *Id.* at 124.

195. Matthew Claudel, *Tomorrow Belongs to Everybody!*, SITE MAG. (Nov. 26, 2018), http://www.thesitemagazine.com/read/tomorrow-belongs-to-everybody   [https://perma.cc/

Whatever can be counted can be turned into data to facilitate exchanges and to justify total oversight of the expenditure of time. Sidewalk imagines Toronto's future waterfront as a place that has eliminated "the divide between home, work, and play."[196] As sensors fill the home and cover the body, market logic may penetrate into the crevices and core of private life. It is one thing to pay a trash disposal fee. But the conversion of all relationships (even if just to things) to an infinite set of use-based, chargeable events means that every interaction is monitored, measured, and marketized.[197] When nothing is owned but only leased on a fractional, per-use basis,[198] gone is the freedom and tolerance to gift or to over- and underuse,[199] to avoid near-perfect price discrimination,[200] or to have a reasonably exercisable "freedom to be off"— to be "free from systemic, environmentally architected human engineering."[201]

This kind of "just-in-time" resource allocation will have a particular cast. It will be very responsive to inputs that are easily measured, to demands easily expressed in real time, and to desires that can be monetized. However, some data that should be used as an input will not be counted in part because the people or places are not instrumented. Shannon Mattern asks in connection with another smart city project, "[w]hat about all those potential behaviors that are never enacted, and thus never measured, because the physical space or its regulation prohibits them—or because one's subjectivity proscribes a repertoire of possible behaviors?"[202] The existence of data divides[203]—people whose data are not counted—will inflect datafication with inequality.

X3NM-NVZS]. *See generally* Adam Arvidsson, *Facebook and Finance: On the Social Logic of the Derivative*, 33 THEORY CULTURE & SOC'Y 3 (2016); Jathan Sadowski, *When Data Is Capital: Datafication, Accumulation, and Extraction*, BIG DATA & SOC'Y, Jan.–June 2019, at 1.

196. *See Vision*, *supra* note 131, at 54.

197. *See generally* SHOSHANA ZUBOFF, THE AGE OF SURVEILLANCE CAPITALISM: THE FIGHT FOR A HUMAN FUTURE AT THE NEW FRONTIER OF POWER (2019); Jennifer Cobbe & John Morison, Understanding the Smart City: Framing the Challenges for Law and Good Governance (June 2018) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3326489 [https://perma.cc/28RL-3UGC].

198. Sidewalk Labs, *Sidewalk Talk: Idea Tour—Eric Baczuk*, YOUTUBE (Dec. 22, 2016), https://youtu.be/ZtbSMiKf4WM [https://perma.cc/XC3Q-YNMT]. After referring to the quote that "housing is where jobs go to sleep at night" as a "nice way of thinking of it," Baczuk describes Google research aimed at making "living in a tiny place extraordinary and desirable. . . . We're really thinking of the home as a device as opposed to as a structure." *Id.* Baczuk presents slides that demonstrate home features including facial recognition, smart toilets, floor-integrated scales, sleep scenes, and wireless vitals. *Id.*

199. *See generally* AARON PERZANOWSKI & JASON SCHULTZ, THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL ECONOMY (2016).

200. ARIEL EZRACHI & MAURICE E. STUCKE, VIRTUAL COMPETITION: THE PROMISE AND PERILS OF THE ALGORITHM-DRIVEN ECONOMY 101–16 (2016).

201. BRETT FRISCHMANN & EVAN SELINGER, RE-ENGINEERING HUMANITY 124 (2018).

202. *See* Mattern, *supra* note 24.

203. *See* Jonas Lerman, *Big Data and Its Exclusions*, 66 STAN. L. REV. ONLINE 55, 58–60 (2013); Kate Crawford, *Think Again: Big Data; Why the Rise of Machines Isn't All It's Cracked Up To Be*, FOREIGN POL'Y (May 10, 2013, 12:40 AM), http://foreignpolicy.com/2013/05/10/think-again-big-data/ [https://perma.cc/3FPN-BFNA];

The efficiency gains to be extracted from "radical" mixed-use may be radically offset in other ways. First, the reliance on real-time and constant data flows, data management, and computationally intensive infrastructure is clearly not costless in terms of energy.[204] Reliability and maintenance impose other costs.[205] And the impact is not only material—in a state of total digital dependence, internet connectivity as well as hardware and software maintenance becomes more than an annoyance and a forbearance; it becomes critical to life quality and sustenance. Second, there are the practical implications of mixed-use and sharing, which reflect in many ways the realities that motivate private ownership and responsibility arrangements. Whole new systems and structures, likely onerous in surveillance and enforcement capacity, are required to manage, clean, maintain, and secure the spaces and things that are subject to radical sharing practices,[206] which create attendant and novel challenges.[207]

D. Domination

Ben Green writes that the "architecture of the smart city is a fundamentally undemocratic one" because the technologies "create massive information and power asymmetries that favor governments and companies over those they track and analyze, breeding impotence and subjugation."[208] The privatization and platformization risks we discuss above can be sources of subjugation for the individual and the collective. Here, we address how an ambitious smart city project like Sidewalk Toronto can neuter the city's sovereign powers, using the examples of domination through rights-of-way and tech interfaces.

The risks of domination are much higher when the smart city architect is as dominant in data as Alphabet and its principal moneymaker, Google.[209]

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see also Daniel Castro, *The Rise of Data Poverty in America*, CTR. ON DATA INNOVATION (Sept. 10, 2014), http://www2.datainnovation.org/2014-data-poverty.pdf [https://perma.cc/LDE3-BT4A].

204. *See* Anders S. G. Andrae & Tomas Edler, *On Global Electricity Usage of Communication Technology: Trends to 2030*, 6 CHALLENGES 117, 118–19 (2015).

205. *See* Shapiro, *supra* note 23, at 72.

206. *See, e.g.*, Patrick M. Bösch et al., *Cost-Based Analysis of Autonomous Mobility Services*, 64 TRANSPORT POL'Y 76, 85–86 (2018) ("[E]ven with low cleaning frequencies and costs, cleaning is the single largest contribution to the operating cost of autonomous (individual) taxi schemes. . . . [D]eveloping viable business models for shared AV fleets will entail solutions to require that customers behave appropriately while on board (e.g. video observation of passengers, or a confirmation check by the next user on the condition of the car to identify irresponsible passengers).").

207. Division responses to shared space that currently are evenly shared (e.g., between roommates on household bills) become difficult to maintain in scenarios of hypervisible and individualized data collection.

208. BEN GREEN, THE SMART ENOUGH CITY: PUTTING TECHNOLOGY IN ITS PLACE TO RECLAIM OUR URBAN FUTURE 92 (2019).

209. Joe Shaw & Mark Graham, *An Informational Right to the City?: Code, Content, Control, and the Urbanization of Information*, 49 ANTIPODE 907, 912 (2017) ("[I]t is Google that now occupies a type of informational right to the city, and it will be Google that can increasingly control a city's surplus production or best further their own vision and ideology

Its ability to sink patient capital into infrastructure and other loss leaders allows it to wait out potential competitors, leverage the network effects of affiliated services, and close off opportunities for citizens or cities to opt out of emerging technology systems. Sidewalk Toronto generates "techlash," the remonstrance against the power of big tech, primarily because it is an Alphabet-Google project.[210] Indeed, Sidewalk Toronto is a perfect storm for techlash, involving as it does issues of data governance, surveillance, efficiency optimization, information asymmetries, privatization, and hidden agendas. The project feeds anxiety over domination by large, unaccountable big data systems and the asymmetric knowledge they produce.

1. Rights-of-Way

The right-of-way is a precious "natural" urban resource. We do not here rely on the fine points of Canadian law regarding cities' proprietary interests in these rights-of-way but rather on the general legal principle derived from Roman law that cities manage public ways (owning them in fee or as easements) for the benefit of the community.[211] It is a principle recognized by Canadian courts[212] alongside American ones.[213] Smart city developers require access to public streets, sidewalks, underground and overhead conduits, and pole installations to support platform services and underlying connectivity. If a developer can dominate the city's right-of-way and franchising or licensing process, it can in effect plunder this resource and subvert the public trust.

Sidewalk imagines the digital layer as a great public infrastructure project in the tradition of the aqueducts of Rome, the London Underground, and the street grid of Manhattan.[214] The city's role and the public's stake in this infrastructure is not clear, as discussed above. The passive voice

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of how it might develop."). *See generally* SIVA VAIDHYANATHAN, THE GOOGLIZATION OF EVERYTHING (AND WHY WE SHOULD WORRY) (2011).

210. The word was coined in 2013 by the *Economist* and shortlisted by Oxford Dictionaries in 2018 as a "word of the year." *Word of the Year 2018: Shortlist*, OXFORD DICTIONARIES, https://en.oxforddictionaries.com/word-of-the-year/shortlist-2018 [https://perma.cc/GD5Q-GSFX] (last visited Oct. 6, 2019) (defining "techlash" as "[a] strong and widespread negative reaction to the growing power and influence of large technology companies, particularly those based in Silicon Valley").

211. *See* 3 EUGENE MCQUILLIN, TREATISE ON THE LAW OF MUNICIPAL CORPORATIONS § 1310 (1912). According to a well-established principle, said to be derived from Roman law, "[t]he title to streets and public ways whether in the people or a municipality, or in fee or in easement, is held in trust for the public use." *Id.* § 1307; Frederick E. Ellrod III & Nicholas P. Miller, *Property Rights, Federalism, and the Public Rights-of-Way*, 26 SEATTLE U. L. REV. 475, 483 (2003).

212. *See, e.g.*, City of Vancouver v. Burchill, [1932] S.C.R. 620, 625 (Can.) ("[M]unicipalities are in a sense owners of the streets" and hold them "as trustee for the public.").

213. *See, e.g.*, Hague v. Comm. for Indus. Org., 307 U.S. 496, 515 (1939) (The Court held that streets "have immemorially been held in trust for the use of the public and, time out of mind, have been used for purposes of assembly, communicating thoughts between citizens, and discussing public questions. Such use of the streets and public places has, from ancient times, been a part of the privileges, immunities, rights, and liberties of citizens.").

214. *See Vision*, *supra* note 131, at 17.

predominates. There will be a "key investment . . . to create a system of utility channels to accommodate all networked utilities . . . [to] provide space for electric wires, telecom conduits, and water and district heating pipes, as well as space for small-scale robots to travel between building basements and under walkable streets."[215] Questions abound about whose investment this will be (Sidewalk likes to speak of "*catalyzing the financing*" of such a project, with an expectation of a "*reasonable*" return),[216] the role of Google-affiliated companies, and control of the utility channel. Then there is the question of how those "utility" companies will interact with urban rights-of-way.

   Some cautions emerge from another experimental Google project in North America. Google Fiber, now under the umbrella of Alphabet's Access division, is, like Sidewalk, one of the Google-Alphabet empire's "big bets." This means it is a company with the patient capital to test and scale a technology without having to be financially successful. In 2010, Google Fiber announced, with its signature primary color cheer, a competition that sent American cities scrambling.[217] It would lay gigabit fiber in some number of lucky cities. Like Sidewalk, Google Fiber offered cities the prospect of innovative services and plaudits. There were similar appeals to the prosocial advantages of the technology rollout. City managers were invited to "imagine sitting in a rural health clinic, streaming three-dimensional medical imaging over the web . . . [o]r collaborating with classmates around the world while watching live 3-D video of a university lecture."[218] There were also promises to advance what was the progressive tech policy agenda du jour: net neutrality. Google Fiber promised it would build an "'open access' network . . . [operated] in an open, non-discriminatory and transparent way."[219] As with Sidewalk Toronto, there was no clear revenue model.[220] As some *fear* will happen with Sidewalk Toronto, Google Fiber's public-minded language about building a utility faded into the reality of a consumer product offered to the rich.[221]

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   215. *Id.* at 23.

   216. *See* Media Events, *supra* note 30 (emphasis added); *see also* Daniel Doctoroff, Opinion, *Sidewalk Labs: 'We Shouldn't Be the Developer of the Eastern Waterfront,'* STAR (Feb. 19, 2019), https://www.thestar.com/opinion/contributors/2019/02/19/sidewalk-labs-we-werent-trying-to-do-anything-in-secret.html [https://perma.cc/WP2P-8TRY] (Seeking to appease the public after a leak of plans, this "reasonable" return became a "negotiated return.").

   217. *Think Big with a Gig: Our Experimental Fiber Network*, GOOGLE: OFFICIAL BLOG (Feb. 10, 2010), https://googleblog.blogspot.com/2010/02/think-big-with-gig-our-experimental.html [https://perma.cc/SWK4-K2P9].

   218. *Id.*

   219. *Id.*

   220. Susan Crawford, *Google Fiber Was Doomed from the Start*, WIRED (Mar. 14, 2017, 12:00 AM), https://www.wired.com/2017/03/google-fiber-was-doomed-from-the-start/ [https://perma.cc/ZC84-ZT78] (stating that Google "wanted an unrealistic rate of return on basic infrastructure" and lost patience, moving from characterizing its project as "an 'experiment' (2010), then a 'business' (2012), and finally a 'bet' or 'moonshot' (2015)").

   221. *Id.* ("The company inadvertently made plain the problem of treating internet access like any other demand-prompted product, when its Kansas City installations failed to cross

Cities jumped to attract Google Fiber to their streets. They would clear impediments to their rights-of-way[222] in return for better broadband and open networks. More than 1000 cities made their offers, preening like hopeful suitors.[223] Topeka even renamed itself "Google, Kansas"[224] but was outdone by neighboring Kansas City, Missouri.[225] Google entered into a development agreement with Kansas City in 2011.[226] The city let Google choose where to deploy, so long as the company made the service available to "economically distressed" communities. In return, the city supplied "assets and infrastructure" at no charge.[227] It also promised to allow Google employees to set up shop in city offices and to deploy dedicated municipal personnel to work with Google.[228] While the agreement did not commit Google to offer an open platform, the company had represented that it would, in keeping with its public positions in favor of net neutrality.[229]

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into historically redlined parts of the city. A utility serving everyone fairly doesn't ask for payment and interest up front.").

222. *Google Fiber City Checklist*, GOOGLE 5 (Feb. 2014), https://fiber.storage. googleapis.com/legal/googlefibercitychecklist2-24-14.pdf [https://perma.cc/CG4V-HJ5U].

223. Henry Blodget, *Google: 1,100 Cities Want Us to Build Them Huge Fiber Networks*, BUS. INSIDER (Mar. 28, 2010, 9:14 AM), https://www.businessinsider.com/henry-blodget-google-1100-cities-want-us-to-build-them-huge-fiber-networks-2010-3 [https://perma.cc/PE7F-RUQQ].

224. John D. Sutter, *Topeka 'Renames' Itself 'Google, Kansas,'* CNN (Mar. 2, 2010, 4:14 PM), http://www.cnn.com/2010/TECH/03/02/google.kansas.topeka/index.html [https://perma.cc/6UYR-69F3].

225. *Ultra High-Speed Broadband Is Coming to Kansas City, Kansas*, GOOGLE: OFFICIAL BLOG (Mar. 30, 2011), https://googleblog.blogspot.com/2011/03/ultra-high-speed-broadband-is-coming-to.html [https://perma.cc/GU93-32GM] (announcing that Google Fiber was coming to Kansas City, Kansas and quoting a Google executive: "[i]n selecting a city, our goal was to find a location where we could build efficiently, make an impact on the community and develop relationships with local government and community organizations"); *see also Everything's Up to Date in Kansas City*, GOOGLE FIBER (May 17, 2011), https://fiber.google.com/blog/2011/everythings-up-to-date-in-kansas-city/ [https://perma.cc/2UJB-69UD] (announcing that Google Fiber was coming to Kansas City, Missouri).

226. *Development Agreement*, NETCOMPETITON (May 10, 2011), http://www.netcompetition.org/wp-content/uploads/Google-Kansas-Agreement1.pdf [https://perma.cc/N936-25LY] (a development agreement between the Kansas City, Missouri and Google Fiber Missouri, Inc.).

227. *Id.* at 4 ("City will provide Google with access to assets and infrastructure of City, to the extent such assets or infrastructure are available and are needed for Google's deployment of the fiber network. . . . City will not impose any charges for access to or use of any City facilities provided under this Agreement, nor will it impose any permit and inspection fees.").

228. *Id.* at 5 (City will create a "team dedicated to the Project and allow Google to place Project employees in City office locations, working side-by-side with the dedicated City team.").

229. *See, e.g.*, Google Inc., Comments Regarding the FCC's National Broadband Plan (June 8, 2009), https://ecfsapi.fcc.gov/file/6520219958.pdf [https://perma.cc/7WFX-6BMG]. *But see* Sarah Nathan, *1934–2010: The Road to the Google-Verizon Proclamation*, ATLANTIC (Aug. 10, 2010), https://www.theatlantic.com/technology/archive/2010/08/1934-2010-the-road-to-the-google-verizon-proclamation/61244/ [https://perma.cc/S92B-E7VB] (discussing the 2010 "Verizon-Google Legislative Framework Proposal" that was presented as a compromise on net neutrality and was widely seen as Google's walk-back from its prior position).

Google executives "employed the construction of the railroads in the 1800s as a metaphor for the growth, innovation and transformation that Google Fiber would provide" to residents.[230] These benefits, they promised, would extend to low-income communities. As it turned out, a demand-based model meant that only the wealthier neighborhoods signed up in sufficient numbers for the service. While nominally making the service available to underserved communities, Google in fact did not deploy the service where consumer "demand" lagged.[231] Nor did it retain its commitment to the most robust expression of net neutrality principles.[232] The analogy to railroad rights-of-way may have been more apt than Google realized. To be sure, railroads spurred economic dynamism. They also used these gains to seize territorial and financial concessions from government.[233] In the end, Kansas City did get better broadband but not all that was promised. Its local paper editorialized ruefully: "Google Fiber hasn't changed the world, or even this part of it. That will be worth remembering the next time an amazing technology emerges from Silicon Valley."[234]

Another Google Fiber city, Louisville, Kentucky, traveled a different trajectory.   There, Google started experimenting in 2017 with a "nanotrenching" technology to see if it could cut the capital expenses of building out expensive fiber infrastructure.[235] Louisville allowed the company to dig shallow trenches that barely buried the fiber. The city was so committed to the success of this new entry that it even litigated on Google's behalf against incumbent broadband providers to gain access for

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230. Germaine Halegoua, *Calling All 'Fiberhoods': Google Fiber and the Politics of Visibility*, 18 INT'L J. CULTURAL STUD. 311, 313 (2015).

231. *Id.* at 313–14.

232. Ryan Singel, *Now That It's in the Broadband Game, Google Flip-Flops on Network Neutrality*, WIRED (July 30, 2013, 1:55 PM), https://www.wired.com/2013/07/google-neutrality/ [https://perma.cc/CD2B-S7HR] (describing the company's response to an FCC complaint concerning Google Fiber's prohibition of customers' attaching "servers" to their gigabit service as violating net neutrality's right-to-attach principles).

233. *See, e.g.*, Ingrid Burrington, *How Railroad History Shaped Internet History*, ATLANTIC (Nov. 24, 2015), https://www.theatlantic.com/technology/archive/2015/11/how-railroad-history-shaped-internet-history/417414/ [https://perma.cc/3DJE-K4KK] ("The history of American networks has always been the history of spooks, graft, questionable labor and supply chains, and territorial conquest . . . [subsidized by government out of] a zealous, romantic vision of the both liberatory and unifying potential of being able to traverse or defy the limits of greater and greater distances.").

234. Editorial, *Google Fiber Has Changed Kansas City but Hasn't Transformed It*, KAN. CITY STAR (Sept. 24, 2017, 8:30 PM), https://www.kansascity.com/opinion/editorials/article174936081.html [https://perma.cc/N3NV-569Q].   *See generally* Burcu Baykurt, The City as Data Machine: Local Governance in the Age of Big Data (May 17, 2019) (unpublished Ph.D. dissertation, Columbia University) (on file with authors) (using Google Fiber in Kansas City as a case study of how a city convinces itself that digital technologies can help it can achieve economic growth and progress).

235. Conner Forrest, *Google Fiber Is Using a Secret Weapon to Outpace AT&T and Other Gigabit Competitors*, TECHREPUBLIC (Oct. 20, 2017, 5:57 AM), https://www.techrepublic.com/article/google-fiber-is-using-a-secret-weapon-to-outpace-at-t-and-other-gigabit-competitors/ [https://perma.cc/G3MW-BC94].

Google to their utility poles.[236] Google's experiment ended in 2019 when it decided to leave the city—and left cracked streets and exposed conduits in its wake.[237] After public outcry, it agreed to pay the city to repair the streets.[238]

What the Google Fiber experience shows is not that patient capital invested in fiber left the cities worse off than they were before (although in Louisville, it might have). It is that the investment lured the cities into precarity by giving up rights-of-way without the means to control the franchisee. Should Google Fiber have become dominant and leveraged that infrastructure to control data, wireless connectivity, and other elements of the digital layer, the cities could have not leaned on their rights-of-way to counter the dominance.

2. Application Interface

While land is the most tangible public resource in the Toronto smart city deployment, there is also virtual infrastructure to consider. Data is infrastructural and control over data is of central concern, as discussed above. In other cities, the application programming interface (API) is another piece of the digital infrastructure, control over which becomes an important piece of sovereignty.[239] Sidewalk imagines for the Toronto waterfront an API that *it* would furnish to manage data access rights in the digital layer. The API would provide for "regulated access to city data and the ability to interact with the city infrastructure in ways that are safe and consistent with other uses."[240] Sidewalk asserts that the API would be governed "by open standards" and support use by "third-party developers."[241] In other words, the API is Android for the city.[242]

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236. *See generally* BellSouth Telecomms., LLC v. Louisville/Jefferson Cty. Metro Gov't, 275 F. Supp. 3d 833 (W.D. Ky. 2017) (holding that Louisville has the authority to regulate pole attachments).

237. Paige Leskin, *Google Fiber Is Shutting Down Its Super-High Speed Internet Service in Louisville After Residents Complained That It Left Exposed Cables in the Streets*, BUS. INSIDER (Feb. 8, 2019, 8:22 AM), https://www.businessinsider.com.au/google-fiber-louisville-shutdown-2019-2 [https://perma.cc/PBV2-NC3R].

238. *City, Google Fiber Reach Agreement Providing for Restoration of Infrastructure Affected by Google Fiber Construction*, LOUISVILLEKY.GOV (Apr. 15, 2019), https://louisvilleky.gov/news/city-google-fiber-reach-agreement-providing-restoration-infrastructure-affected-google-fiber [https://perma.cc/7XY8-527G] ("Google Fiber will pay $3.84 million to Louisville Metro Government (LMG) to restore roads and other public rights-of-way affected by its departing service in Louisville.").

239. Los Angeles, for example, has created its own open API for mobility applications through which ride-sharing and other mobility services must share data with the city. *Mobility Data Specification*, LADOT (Oct. 31, 2018), https://ladot.io/wp-content/uploads/2018/12/What-is-MDS-Cities.pdf [https://perma.cc/A6WR-FU8C].

240. *See Vision*, *supra* note 131, at 70.

241. There is ambiguity as to how open the standards will be. *Id.* at 33 ("Platform components and applications will be published under open-source licenses where doing so results in significant additional value to the ecosystem as a whole.").

242. *Id.* at 70 ("In much the same way that software platforms like Apple's App Store, the Google Play Store, and Amazon Web Services have stimulated creativity on the web and in

The two things to note about this technological arrangement are that "open" does not mean egalitarian and that "third parties" include city managers. An API owner has the final say over API use. It can withdraw access to applications that seek to connect or it can boost its own applications over those of its competitors, as Google has done.[243] The digital layer, Android-esque ecosystem will *seem* "open." But the initial and ongoing design choices will be Sidewalk's or whoever designs it.[244] As Ariel Ezrachi and Maurice Stucke write in relation to the experience with Android, Google is a "super-platform" that "can degrade the functionality of independent apps and online platforms . . . by reducing their performance and making them run slower . . . foreclose[ing] . . . timely access to critical data; [or] . . . preventing [them] from achieving the minimum efficient scale," as well as by making it "harder for consumers to find" independent apps or giving "preferential treatment to its own or other competitive services."[245] Using the metaphor of the savanna, they describe the dominant mode of cooperation between super-platforms, platforms, and apps in capturing user data: "They all benefit from the combined effort. But they do not share equally the spoils; the dominant lion gets the best cut, which further enhances its power."[246]

Similarly, on the waterfront, Sidewalk presumably could withdraw access from or condition access to the digital layer's API. Applied to the city, API terms would influence regulatory authority. Applied to third parties, they would influence competition. For example, Sidewalk proposes to make curbside usage for parking, stopping, dining, building, or recreation available through the API. One might have thought that collecting and providing access to this data would be a quintessentially public function. But Sidewalk proposes its own "Coord" platform for this purpose.[247] The data run through

personal devices, the digital layer provides a set of APIs, with documentation and developer support that will inspire the same creativity in the city.").

243. *See, e.g.*, Press Release, European Comm'n, Antitrust: Commission Fines Google €1.49 Billion for Abusive Practices in Online Advertising (Mar. 20, 2019), https://europa.eu/rapid/press-release_IP-19-1770_en.htm [https://perma.cc/T5KK-JA8X]; Press Release, European Comm'n, Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine (July 18, 2018), http://europa.eu/rapid/press-release_IP-18-4581_en.htm [https://perma.cc/4B9X-2SQA]; *see also* Konstantinos Stylianou, *Exclusion in Digital Markets*, 24 MICH. TELECOMM. & TECH. L. REV. 181, 246 (2018) ("Rivals have complained that the tying of Android with Google's applications, and the bundling of Google's applications together, creates an unfair competitive advantage for Google, which in turn makes competition on the merits harder or impossible for them.").

244. Christoph Raetzsch et al., *Weaving Seams with Data: Conceptualizing City APIs as Elements of Infrastructures*, BIG DATA & SOC'Y, Jan.–June 2019, at 1, 4 ("Because such APIs provide indispensable data for serving the visible layer of the user interface, they begin to assume infrastructural functions for navigating urban spaces although their governance and design is not subject to public scrutiny or even awareness.").

245. *See* EZRACHI & STUCKE, *supra* note 200, at 156–57; *see also id.* at 178–90 (explaining in detail the unilateral removal of a privacy-preserving app, Disconnect, from the Google Play Store).

246. *Id.* at 170.

247. Stephen Smyth, *Announcing Coord: The Integration Platform for Mobility Providers, Navigation Tools, and Urban Infrastructure*, SIDEWALK LABS (Feb. 1, 2018),

this platform and API would likely include personal information like license plates (to automatically regulate and enforce traffic laws), as well as de-identified data for usage or vehicle type.[248] In order to get at this data, and therefore enforce parking laws or grant special usage permits, the city would have to go through the API. The city, in other words, stands in the shoes of any other third party, subject to the choices of the API's owner.

Through the API deployed in Toronto's waterfront, not only will the government access the necessary data to serve citizens but citizens will access government services.[249] The digital dependency discussed above comes to be a dependency on the very same tech interface that the city too requires. Citizen and city are bound together, not directly, but through mutual dependency on the same interfaces. This is the case, for example, when cities use Facebook as the principal communications forum with their residents.[250] The application provider's terms of service, interconnection with other services, and technical affordances then constitute a form of urban control the city cannot easily resist.

Techniques to avoid domination by API need to be developed and built into systems of urban governance, whether these are contractual obligations, regulations, or simply alternatives.

CONCLUSION

In its first eighteen months of existence, the Sidewalk Toronto project did not stray from Sidewalk's original vision, notwithstanding pointed and well-publicized public critique and revelations by a handful of admirably aggressive local journalists. The vision has only consolidated, along with the collaboration between Sidewalk and WT, which presented a totally unified approach. Most significantly for our purposes, despite the volume of interest and intensity of concern regarding the venture, no aspect of Sidewalk's proposed vision for governance—and, in particular, no substantive aspect of data extraction, privatization, platformization, or monopolization—was aired for substantial challenge, refinement, or rescindment. Instead, there was an elaborate, performative, and painfully drip-fed process of public

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https://www.sidewalklabs.com/blog/announcing-coord-the-integration-platform-for-mobility-providers-navigation-tools-and-urban-infrastructure/ [https://perma.cc/JXJ2-DL9F].

248. *See Digital Strategy Advisory Panel Technology Update*, *supra* note 174, at 13–29; *Welcome—Roundtable4: Plenary Session*, WATERFRONT TORONTO (Dec. 8, 2018), https://storage.googleapis.com/sidewalk-toronto-ca/wp-content/uploads/2019/06/13210436/online_RT4_PLENARY-Session.pdf [https://perma.cc/B47L-NVQQ].

249. *See Vision*, *supra* note 131, at 18 (explaining that each resident will be given "a highly secure, personalized portal through which residents can access public and private services").

250. City dependency on commercial social media platforms is part of what renders them basic utilities. *See* K. Sabeel Rahman, *The New Utilities: Private Power, Social Infrastructure, and the Revival of the Public Utility Concept*, 39 CARDOZO L. REV. 1621, 1670 (2018) ("Google and Facebook are increasingly part of our informational infrastructure, shaping the distribution of and access to news, ideas, and information upon which our economy, culture, and increasingly politics depend on.").

engagement,[251] involving delayed information releases and staged consultations on already or nearly consummated agreements.

The net effect is that while Sidewalk's first-rate campaign to romance the city did not entirely succeed in its first stages, the project acquired global renown and a sense of inevitability, aided by a combination of lavishly funded publicity and coquettish mystery. The release of the MIDP at the end of the period studied was another flashy and well-orchestrated set piece, and Sidewalk has continued as of this writing to wear any critique as "incredibly robust dialogue" that helps the firm to improve.[252] The success of this strategy going forward is far from given, as Sidewalk's tactics have hardened and tutored resistance to the project, leading to a growing grassroots #BlockSidewalk campaign, threats of legal action, and at least some indicators of more rigorous oversight from public officials.[253]

As demonstrated in Part I, the process failures in the rollout of Sidewalk Toronto have been ample. When combined with the substantive concerns set forth in Part II, they propose to dramatically change the structure of urban life and threaten public governance. To recap the threats to governance demonstrated by Sidewalk's original vision and evidenced through the first eighteen months of the project:

(1) City planning and data management were referred to a private company that kept the public and public officials always one step or more behind the action.

(2) Notwithstanding stated deference to public bodies, the project's foundational provisions on intellectual property, data, and procurement, along with the basic blueprint, fundamentally disempower the public and serve the interests of the private company.

(3) In the city as platform model, public administration is a mere app at the edge of centralized infrastructure owned and operated by a private company.

(4) Regulation, lawmaking, and enforcement may be substantially taken over by the private company, which envisages a system of data-driven, outcome-based code that is highly personalized and dependent on a constant process of data extraction.

(5) Through platformization and the accompanying logic of efficiency and datafication, previously fixed and static assets are reconceived as "just-in-time updatable devices," subject to data-enabled, single-use transactions.

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251. *See* Rob Kitchin, *The Ethics of Smart Cities*, RTÉ (Apr. 27, 2019), https://www.rte.ie/brainstorm/2019/0425/1045602-the-ethics-of-smart-cities/ [https://perma.cc/J8YE-U6TD]; *see also* Shannon Mattern, *Sidewalk Labs's Material Co-Design*, WORDS SPACE (Apr. 28, 2019), http://wordsinspace.net/shannon/2019/04/28/sidewalk-labss-material-co-design/ [https://perma.cc/GQF3-GHEP].

252. *See generally* Media Events, *supra* note 30.

253. Amanda Coletta, *Quayside, Toronto's Google-Linked Smart City, Draws Opposition over Privacy, Costs*, WASH. POST (May 7, 2019), https://www.washingtonpost.com/world/the_americas/quayside-torontos-google-linked-smart-city-draws-opposition-over-privacy-costs/2019/05/05/e0785500-6d12-11e9-bbe7-1c798fb80536_story.html [https://perma.cc/TG63-3344].

This logic encourages frictionless satiation of impulse, magnifies existing inequalities, and undervalues human freedom and social cohesion.

(6) Google experiments in other cities and domains teach that cities that readily hand over physical rights-of-way leave themselves servile to deep-pocketed prospectors and that API control of data exchanges can augment unchecked platform power and deepen irreversible datafication.

What emerges from these points and the prior analysis is not a grievance with technology nor with urban innovation per se. It is with privatization, platformization, and domination. It is with the centrality and hugely asymmetric power of a private corporate group—Alphabet-Google, through its affiliate Sidewalk—and the control it is able to exercise over nearly every aspect of the future district.

Before the project reached this point, there might have been reasonable steps that Toronto, in conjunction with WT, could have taken to mitigate these concerns. These might have included a requirement of impact assessments on every proposed service in the project; of independent review for each service; that Sidewalk pilot innovations at Quayside or Google facilities before broader deployment; that the city itself administer any data trust functionality and approve data collection in a cautionary, stepwise manner based on evidence and necessity; that the relevant governmental process conclude its own data governance rulemaking; that any intellectual property provision properly assess the value the public is bringing and ensure a reasonable return; and that ordinary procurement procedures apply at all stages of the redevelopment.

After so much secrecy and legerdemain, these policy interventions may be too late if they leave the project's essential blueprint in place. Course corrections that are too timid and implicitly endorse and embed deep structural compromises into the heart of urban governance will drain the city of power. The alternative, for Toronto and others, is to pursue urban innovation with private partners but only in a way that rejects a central role for any one company—and certainly any role of "co-master developer." What Sidewalk has provided is a vision where its own upper hand in platform control, data governance, intellectual property, procurement, and access has at each turn an obvious and legitimate alternative: the hand of the city itself.