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The Push and Pull of Technology and its Impacts on Planning in Canadian Cities

Les poussées et les tractions de la technologie et ses impacts sur l’aménagement des villes canadiennes

Pamela J. Robinson

Toronto Metropolitan University

This article serves as an introduction to the 2024 Special Issue of Canadian Planning and Policy: Technology and the City. Dr. Robinson is the Guest Editor of this issue.

We would like to thank our anonymous reviews for their time.

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Introduction

Cities and technology have a long standing, interactive, and mutually reinforcing relationship. Advancements in technology accelerated the movement of people from the countryside to the city for work and enabled us to build taller, and are now fundamentally blurring the physical boundaries between work and home. Cities, in return, are heralded as sites of innovation and are home to clusters of technology firms (Clark, 2020; Lorinc, 2022; O’Kane, 2022). As planners, we contend with similar push-pull dynamics. We use technology and the data it gathers in our practice, but the innovations arising from that technology demand critical thinking about their present and future impact on our practice and the communities with whom we work (Green, 2020; Mattern, 2021; Schweitzer & Afzalan, 2017; Robinson, 2022; Robinson, 2023).

As a profession, there are some natural points of alignment between planning practice and how technologies function. What is a zoning bylaw if not an effort to code the city (Ben-Joseph, 2005)? As an evidence-informed practice, the rise of big data, gathered through significant technological advancements, provides new inputs into our work as planners. And these innovations also present real challenges to our work to ensure that the data used is appropriate for the communities with whom we work (Kitchin, 2023; Lauriault, 2022). In municipalities across Canada, we see planners experimenting with new technologies. The City of Toronto’s Concept 2 Keys effort to streamline development approvals includes the use of a technology platform. The City of London (Ontario) is experimenting with AI to help predict when their shelters for people experiencing homelessness might anticipate more demand. Individually, planners are engaging with new generative AI technologies to explore their use in public and private practice. Planners are engaged in
exploring how digital twins might help cities be more efficient and sustainable.

Meanwhile, others argue that planners have been too slow to embrace technology in our work. The civic technology movement emerged in part because technologists perceived governments to be too inert, slow, and resistant to change (Harrell, 2020), with civic tech advocates in 2013 claiming, “Technology is poised to seriously disrupt some of the last remaining domains: government, city hall, and your neighborhood (Bloomberg, 2013)”. Urban technology entrepreneurs have built tools including Ratio.City and MapYourProperty that knit together the tools of our practice, including official plans and zoning bylaws, along with other large urban data sets to create fee-based tools to help developers. These tools point to a desire by private sector planners for planning tools that local governments are not providing.

Ultimately, our job as planners is to work within the confines of our Code of Practice and Statement of Values. While neither offers specific guidance on how our profession should work with emerging technology, our skills and training are useful and necessary to help bridge the technology-urbanism divide. As a profession trained to work across scales and uphold the public interest, planners need to concern themselves not only with new technology and data but more broadly with the processes by which these tools are created and the data sets are gathered, as well as the contexts in which technology and data sets are implemented. Research continues to demonstrate how the impacts of new technologies and data land differently among community members, with the potential for bias being most significant in equity-deserving communities (Brossard, 2018; D'Ignazio & Klein, 2020; Eubanks, 2018; McIlwain, 2020). Planners need to recognize these differences to both mitigate against these negative impacts and proactively seek to ensure the positive outcomes are universally accessible. Most importantly, as planners, when their refuges for people without shelter might anticipate an increase in demand.

Individuellement, les urbanistes se sont engagés dans les nouvelles technologies d'IA générative pour explorer leur utilisation dans la pratique publique et privée. Les urbanistes étudient la manière dont les jumeaux numériques pourraient aider les villes à devenir plus efficaces et plus durables.

Pendant ce temps, d’autres soutiennent que les urbanistes ont été trop lents à intégrer la technologie dans leur travail. Le mouvement des technologies civiques est apparu en partie parce que les technologues percevaient les gouvernements comme trop inertes, lents et résistants au changement (Harrell, 2020), les défenseurs des technologies civiques affirmant en 2013 : « Technology is poised to seriously disrupt some of the last remaining domains: government, city hall, and your neighborhood (Bloomberg, 2013) ». Les entrepreneurs en technologie urbaine ont créé des outils, notamment Ratio.City et MapYourProperty, qui rassemblent les outils de notre pratique, y compris les plans officiels et les règlements de zonage, ainsi que d'autres grands ensembles de données urbaines pour créer des outils payants pour aider les développeurs. Ces outils témoignent du désir des urbanistes du secteur privé de disposer d'outils d'aménagement que les gouvernements locaux ne fournissent pas.

En fin de compte, notre travail en tant qu’urbanistes consiste à travailler dans les limites de notre code de bonnes pratiques et de notre déclaration de valeurs. Même si aucun des deux ne propose de conseils spécifiques sur la manière dont notre profession devrait travailler avec les technologies émergentes, nos compétences et nos formations sont utiles et nécessaires afin de contribuer à combler le fossé technologie-urbanisme. En tant que profession formée pour travailler à plusieurs échelles et défendre l’intérêt public, les urbanistes doivent se préoccuper non seulement des nouvelles technologies et des nouvelles données, mais
our profession guides us to the question: what are the consequences of the use of that technology or data in a real place with real people? In the abstract, innovative uses of technology and data hold great promise, but the reality is that a consideration of the full impact of their use needs to be grounded in the social, ecological, and economic realities of the communities with whom we work (Mattern, 2021). Here, planners have an important and not yet fully realized role to play.

Contributions to this Special Issue
We are fortunate in Canada to have emerging and established planning researchers whose work, individually and collectively, considers and confronts the opportunities and challenges Canadian planners face when using new technologies and data. This special issue of Canadian Planning and Policy considers how technology platforms, data gathered from ubiquitous technology including mobile phones, apps and sensors, and large-scale urban technology developments are pushing planning practice in new and challenging directions.

The articles in this issue examine the challenges and opportunities that emerging technology and data present to urban planning practice in Canadian cities. From large smart city precinct projects to technology platforms that have changed the ways we live, engage in local democracy, and move in cities to the ways technologies impact resident-planner relationships to dashboards that inform our decisions, new technologies represent the promise of an improved urban realm but also signal the need for scrutiny from an engaged planning profession in Canada.

Research on the roles emerging technologies play in Canadian cities is important and distinct from other urban technology research. The practice of Canadian planning needs more access to the strong research emerging from researchers with a Canadian focus. While there is a rich and developing critical
scholarship of urban technologies, much of its critique sits above the realities of practice. The critique is important for Canadian practicing planners to understand, but it sometimes fails to provide clear direction for how to apply the theory and research outcomes to actual practice. The articles here seek to bridge this gap. Each of the papers in this special issue include reflections on the implications of the research for Canadian planners, asking: “so what does this research mean for Canadian planners?”

Dr. Kate Nelischer, Assistant Professor at SUNY Buffalo’s School of Architecture and Planning, shares her research examining whether smart city projects live up to their “citizen-centric” promises. The idea of the smart city is familiar to Canadian municipalities. Toronto’s engagement with Alphabet’s Sidewalk Labs Project during the 12-acre Quayside development process garnered international attention, and it is this project that Kate’s research evaluates. Kate’s research findings are important for planners because they speak to the need to align the planning process with the resulting plan if planners truly want to engage their residents. This case study serves as a cautionary tale that the promise of technology will not necessarily be fulfilled, and a reminder that planners have an important role to play in public-private partnerships that seek to deploy new technologies in communities.

As Canadian communities wrestled with the COVID-19 pandemic, the public health orders to work and study from home gave rise, by necessity, to a period of rapid creation, experimentation, and adoption of new technologies. Queen’s University faculty Dr. Betsy Donald, Associate Vice-Principal Research, and Dr. Carolyn DeLoyde, Adjunct Assistant Professor in the Department of Geography and Planning, share their research examining one such example of COVID-inspired innovation: the Kingstoninfocus.ca dashboard. In this paper, the authors trace the origin of this dashboard, which was created to help evaluate the impacts of the pandemic pratique de l'aménagement dans de nouvelles directions stimulantes.

Les articles de ce numéro examinent les défis et les occasions que les technologies et les données émergentes présentent pour la pratique de l'urbanisme dans les villes canadiennes. Des grands projets de quartiers de villes intelligentes aux plateformes numériques qui ont changé notre façon de vivre, de nous engager dans la démocratie locale et de nous déplacer dans les villes, en passant par la façon dont les technologies impactent les relations résidents-urbanistes jusqu'aux tableaux de bord qui éclairent nos décisions, les nouvelles technologies représentent la promesse d'une amélioration du domaine urbain, mais signalent également la nécessité d'un examen minutieux de la part de la profession d'aménagement au Canada.

La recherche sur les rôles que jouent les technologies émergentes dans les villes canadiennes est importante et distincte des autres recherches sur les technologies urbaines. La pratique de l'aménagement canadien a besoin d'un plus grand accès aux recherches solides de chercheurs axés sur le Canada. Bien qu’il existe une recherche critique riche et en développement sur les technologies urbaines, une grande partie de sa critique se situe au-dessus des réalités de la pratique. Il est important que la critique soit comprise par les urbanistes canadiens, mais elle ne parvient parfois pas à fournir une orientation claire sur la manière d’appliquer la théorie et les résultats de la recherche à la pratique réelle. Les articles ici cherchent à combler cette lacune. Chacun des articles de ce numéro spécial comprend des réflexions sur les implications de la recherche pour les urbanistes canadiens, en posant la question suivante : « qu'est-ce que cette recherche signifie pour les planificateurs canadiens ? »

Dr. Kate Nelischer, professeure adjointe à l'école d'architecture et de planification de SUNY Buffalo, partage ses recherches visant à déterminer si les
One of the promises from smart city advocates is that these new technologies will make the process of city-building, including planning and design, more open, inclusive, transparent, and accountable (Green, 2020; Johnson et al., 2020a, 2020b; Robinson & Johnson, 2023). As a profession with a duty-bound obligation to consult and engage our residents in the planning process, planners have an increasingly wide range of digital platforms to draw upon in these public-facing processes. Morgan Boyco is a doctoral student at the University of Waterloo and an RPP planner with almost 15 years of consultation and engagement experience in rural and urban communities in Canada. His paper examines how our public consultation and engagement efforts have taken a “digital turn” toward using Dedicated Digital Engagement Platforms (DDEPs). Readers might be surprised to learn about the market share dominance that one of these DDEPs has here in Canada. Here, Boyco shares the findings of his Canada-wide study of the uses of these platforms, taking a critical perspective on their use. Boyco concludes by raising important questions for planners to consider when using these technologies in their public consultation and engagement efforts.

Of all the technology tools examined in this special issue, Airbnb is the tool most readers are likely to have used in their personal lives. As planners, the significant impacts of short-term rentals, enabled by technology platforms like Airbnb, are well recognized in terms of the fabric of our communities. Dr. David Wachsmuth is an Associate Professor at McGill’s School of Urban Planning, a Canada Research Chair in Urban Governance at McGill University, and internationally a
leading researcher on short-term housing rentals. Together with planning researcher Bridget Buglioni they examine how, due to the pandemic, the short-term rental market crashed and then trace the subsequent rise of what they call “medium-term rentals” as a new housing type. Through their examination of housing market data, land-use and housing regulations, and Ontario Landlord and Tenant Board cases, they propose a new approach for planners responding to this emerging type of housing.

The fifth, and final, paper examines how fitness data gathered through the Strava app might serve as an input into active transportation planning. Planning practice is full of data that is interesting but that might not be appropriate to use. With Dr. Peter Johnson, Associate Professor of Geography (Waterloo), and Madie Vernooy, a practicing planner, we interviewed municipal staff in six Southern Ontario municipalities to gain a better understanding of why and how the Strava Metro data set is used. While other researchers have evaluated the Strava Metro data itself, there is little research that tackles the question of how municipal decision-makers, including planners, actually use this data and how they consider and overcome the data’s limitations. This paper seeks to fill this gap.

Collectively, these papers provide a variety of insights into how technology is pushing us as planners in our practice. The public-private partnership in the Quayside project blurred the boundaries around who does what, including a process that explored new roles for resident engagement. The Kingston COVID-19 impact dashboard development process helped build new relationships between Queen’s and the City of Kingston despite the university being there since 1841. The growing options for Dedicated Digital Engagement Platforms present planners with a public consultation fork in the road, asking us to make important decisions about the kinds of planner-resident conversations we need to have. Urban
technology platforms, whether for housing or active transportation, have pushed the boundaries of planning as we currently understand them. The challenges presented by short-term rental platforms are well known, and now these platforms have given rise to medium-term rentals that lack the appropriate regulations given the current housing challenges we face in Canada. And, finally, the rise of third-party data providers pushes us to consider answers to the questions: what data do we need? And is the data being offered any good? At a time when we as planners are encountering the rise of artificial intelligence tools which require significant data training sets to learn, the lessons garnered from the research shared here are timely and important.

Notes on the Special Issue Editor

Pamela Robinson, MCIP RPP, is a Professor in the School of Urban and Regional Planning at Toronto Metropolitan University. Her research and practice centres on the emerging challenges and opportunities faced by Canadian municipalities.

References

En fin de compte, notre objectif en nous réunissant en tant que groupe de chercheurs et de praticiens canadiens en urbanisme est de partager des recherches spécifiques à la pratique de l'urbanisme au Canada, dans l'espoir qu'elles suscitent de bonnes conversations entre les urbanistes et aident à éclairer les décisions que les urbanistes professionnels prennent au quotidien. Je sais que tous nos auteurs sont impatients de dialoguer avec les personnes qui trouvent cette recherche intéressante ou qui ont des questions. Le cadeau du libre accès à cette revue est que vous êtes libre de partager largement ce travail.