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# Global technology companies and the politics of urban socio-technical imaginaries in the digital age: Processual proxies, Trojan horses and global beachheads

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**Abstract**

In this paper, we take the concept of ‘new urban spaces’ as our jumping off point to engage with the efforts of Alphabet/Google affiliate Sidewalk Labs to cultivate a new integrated digital and infrastructural urban space on the Toronto waterfront. We interrogate the process and politics of imagining this new, digital urban space as an urban socio-technical imaginary. The paper critically examines the central role of ‘big tech’ in producing the urban socio-technical imaginary not as a snapshot but, rather, as a ‘process of becoming’. This processual focus on the role of big tech allows us to develop three interrelated analytical contributions. First, we generate in-depth understanding of the proxy politics of urban socio-technical imaginaries in constituting new digital urban spaces. Second, we argue that an urban socio-technical imaginary was used as a Trojan horse to promote private experimentation with urban governance. Third, we demonstrate attempts to imagine a global beachhead via ‘the global model’ of a new digital urban space predicated on the digital control of integrated urban infrastructure systems.

**Keywords**

Imaginary, urban innovation, big tech, Sidewalk, Toronto

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## Introduction

We live in an era of planetary urbanisation where the scale and pace of urbanisation and the economic, ecological and social pressures, conditions and responses shaping that have led to a proliferation of urban forms (Brenner, 2019). From city-regions (Jonas, 2013), corridors, zones (Easterling, 2014) and other soft spaces (Haughton et al., 2013) to the extended and endless city (Burdett and Sudjic, 2007), we have seen challenges to the dominance of the city as the pre-eminent urban form. This fragmentation can be understood conceptually and theoretically through the idea of ‘new urban spaces’ (Brenner, 2019).

Fundamental to this view is that future urban spaces are imagined and envisaged by coalitions of state actors at various scales along with private interests, identifying particular sites for infrastructural experimentation within a context of wider capitalist processes of global-urbanisation. At stake is how urban space, urban life and the services that underpin it are defined. Yet, experimenting with organising urban infrastructure is not just a technocratic design exercise (Evans, 2016). It frequently involves wider considerations about the kind of economic organisation infrastructure might support, how it might address or exacerbate environmental crises and resource circulations, and how infrastructure and access to it might be used to confront or intensify urban poverty. Studying the organisation of urban infrastructure increasingly not only requires focus on conventional transport, energy, water and other infrastructure networks but also digital infrastructures (Kitchin, 2014). It needs to address how, as a response to these issues and pressures, future urban infrastructures and new urban spaces are mutually organised and governed.

Our argument is that the growth of digital urban infrastructure – initially studied as ‘smart urbanism’ (Marvin et al., 2015) and now, increasingly as ‘platform urbanism’ (Barns, 2020; Hodson et al., 2020) – is seeing global technology companies, such as Alphabet and IBM, positioning themselves as social interests that purposively imagine, design and govern new digital urban spaces via infrastructural experimentation. Although the narrow aim is clear, the process of achieving this is fluid and the implications are contested. In this paper we address the politics and process through which new urban spaces are imagined through (‘integrated’ digital and more conventional) infrastructural transformation.

To do so, we synthesise theoretical and conceptual insights from literature addressing socio-technical (Jasanoff, 2015; Sadowski and Bendor, 2019) and spatial (Watkins, 2015) imaginaries, that are assembled and experimented with in place but that may also circulate expertise and models of urban digital infrastructural development as an endeavour of global technology companies. Whilst resulting urban socio-technical imaginaries are representational they are not fixed. They also have a performative function but this is the subject of negotiation and struggle between various public and private social interests to constitute and articulate ‘exemplary’ new digital urban spaces. Addressing the imagining and constitution of digital urban spaces requires bringing together three sets of literatures on: new urban spaces (Brenner, 2019); selectively, the burgeoning literature on urban infrastructure (Rutherford, 2020); and urban experimentation (Evans, 2016). Our argument is that global tech companies, in the spirit of Schumpeterian entrepreneurialism (Schumpeter, 1942), are promoting the ‘integration’ of urban infrastructures through urban experimentation. This process often operates at the level of discursive persuasion and seeking to build legitimacy – via strategy documents, vision statements, stakeholder events and mass media output – rather than in terms of tangible, material transformation.

To address how urban socio-technical imaginaries can help us to better understand the process and politics of new digital urban spaces and the role of global technology companies

in this we focus on the extreme case (Flyvbjerg, 2006) of attempts to develop a digital urban neighbourhood, the Quayside, on the Toronto waterfront (Flynn and Valverde, 2019; Leszczynski, 2020; Morgan and Webb, 2020). This is presented as one of North America's largest smart city initiatives<sup>1</sup> and brings together imaginaries of tech company Alphabet with the priorities of the tri-partite public authority, Waterfront Toronto. We explore how imaginaries are best understood as both representations and performative processes, as proxies of struggle over which social interests shape and benefit from the future organisation of urban space and infrastructures.

From this focus on the role of global technology companies in the politics of constituting urban socio-technical imaginaries, the paper makes three interrelated contributions. First, we develop in-depth understanding of the proxy politics of urban socio-technical imaginaries in the de-politicisation and politicisation of constituting new digital urban spaces. Second, we argue that an urban socio-technical imaginary was used as a Trojan horse to promote and pursue private experimentation with urban governance. Third, we demonstrate how the politics and processes of producing a new urban digital space, resulted in ambiguity and contestation about questions of its scale and purpose, but also the primacy of circulating globally '*the model*' of a new digital urban space predicated on the digital control of integrated urban infrastructure systems.

The paper has five further sections. First, we locate the central role of global technology companies in re-imagining urban infrastructure and urban space. We argue that efforts to constitute new digital urban spaces, mobilising infrastructure, rely on the processes of development of urban socio-technical imaginaries. Second, we introduce and contextualise the extreme case of efforts to cultivate a new integrated digital and infrastructural urban space on the Toronto waterfront. Third, we move on to analyse Sidewalk Labs' imaginary of a new digital urban space on the Toronto waterfront and critically assesses the struggle for legitimacy, mediated through the imaginary. Fourth, three key analytical implications are drawn from the extreme case to make wider contributions to debates about technologically embedded urban transformation. We show how SL strategically mobilised a sociotechnical imaginary as a *proxy* for depoliticisation to create a *Trojan horse* for new modes of private urban governance, which if instantiated in place would establish a *beachhead* for global circulation. But, the imaginary-as-proxy failed in its attempt at depoliticisation, adversarial politics against the imaginary flared up, meaning the mask of the Trojan horse was at least partially lifted and the beachhead in Toronto was not established. Finally, we conclude the article with a summary of how analysis of the extreme case of the Quayside in Toronto contributes to ongoing debates concerning digital control of urban spaces, infrastructures and services.

## Digital urban infrastructure and emergent forms of territorial design

Recent widespread academic and policy interest in urban infrastructure (Steel and Legacy, 2017) can be understood via numerous explanations: rapid urbanisation and associated demand for urban services; new configurations of urban infrastructure as a 'spatial fix' and a focus through which capitalism and its contradictions are played out; urban infrastructure as a 'desirable destination for surplus capital that cannot find productive investment'; and rents arising from the large-scale, spatially bounded and monopoly character of urban infrastructure (Dodson, 2017: 89–90; see also O'Brien and Pike, 2019). In short, 'the problem of creating large-scale, long-term, and relatively fixed infrastructures for capital

accumulation appears to be the hegemonic political agenda animating contemporary projects of neoliberal territorial design' (Brenner, 2019: 375). What is clear is that infrastructure is bound up with dynamic processes of the constitution of urban space and it is also central to a variety of spatial formations and territorial designs.

Notoriously a concept of some interpretative flexibility (Bijker et al., 1987), urban infrastructures can take multiple forms; as social infrastructure (Moulaert et al., 2013); it can be grey, green, blue, and digital/smart/informational; it can be understood as a material thing, as a noun, or a verb, a process of infrastructuring (Star, 1999). Historically in western contexts, national and local state interests have worked with planners, utilities, engineers and architects to organise urban infrastructure. Increasingly, 'new' social interests are entering this field, particularly global technology companies (Wiig, 2015), but also automobile companies and others. Over the last couple of decades, the growth of policy and academic interest in smart urbanism (Marvin et al., 2015) has coincided with the involvement of these new social interests in urban infrastructure design.

Though there is a voluminous literature about smart urbanism, broadly writings capture two approaches (Kitchin, 2014): one view resonates with debates around the central role of urban contexts in the 'knowledge economy', the importance of agglomeration thinking and the ways in which urban economies are increasingly reliant on smart people, innovation and entrepreneurship to promote urban economic development; a second view emphasises the monitoring, control and improvement of flows and movements into, out of and around urban contexts in 'real time' via data produced and analysed via widespread computing, instrumenting and sensor infrastructures embedded in urban material infrastructures (e.g. lampposts, traffic lights, roads).

This latter view speaks to developing novel modes of urban governing and control. Mobilising ideas of smart urbanism, IBM (Wiig, 2015), Hitachi, Cisco and other tech companies are developing software and hardware packages ('operating systems') that have the stated aim of contributing to more efficient and sustainable urban services. Public, municipal authorities are also experimenting with the ways in which digital platforms can transform urban services. Digital operating systems seek to integrate with existing infrastructural provision resulting in 'urban operating systems', where through IT rationalities the city is reconfigured as computational space (Marvin and Luque-Ayala, 2017: 84–85).

This said, despite a small number of global technology companies dominating such debates there are a variety of different ways of conceptualising digital platforms in delivering services, and attempts to realise these through experimentation in urban areas (Stehlin et al., 2020). They can also be focused at particular spatial scales of organisation, where they may complement existing forms of urban infrastructure provision, compete with them or co-exist with them (Hodson et al., 2017).

This matters because '[l]arge governmental and private sector effort is now dedicated to fulminating support, initiating, designing, procuring, constructing, financing and operating urban infrastructure' (Dodson, 2017: 88). In contexts of austerity and financialisation, this has put under further pressure the logic of infrastructure as a public good and promoted the view of infrastructure as an asset within the international investment landscape (O'Brien and Pike, 2019). Yet, this meets wider societal tensions and requirements for urban infrastructure to address sustainability concerns (e.g. carbon emissions reduction; air quality) and to provide more sophisticated, integrated services. This asks questions of how global technology companies and public authorities are working to (re-)imagine digital urban infrastructural futures and urban space.

### *Imagining urban futures as an urban politics and process of becoming*

A 'key question for social science' according to John Urry (2016: 11) 'is who or what owns the future – this capacity to own futures being central in how power works'. In this vein, efforts to imagine new digital urban spaces can be understood as a struggle for symbolic legitimacy. It is a struggle that can be understood as socio-technical, in the sense that it involves the mobilisation of urban infrastructure and its social organisation but that is also spatial in that it links issues of imagining urban futures and infrastructure to questions of emergent forms of territorial design. In this section, we synthesise literatures on socio-technical and spatial imaginaries as a way of imagining new digital urban spaces as urban socio-technical imaginaries, particularly through the mobilisation of urban infrastructure in emerging forms of territorial and spatial design.

In particular we focus on socio-technical imaginaries produced by tech companies (Sadowski and Bendor, 2019) and how these are re-constructed in relation to place-based contexts as spatial imaginaries (Watkins, 2015). We start from Sheila Jasanoff's definition of socio-technical imaginaries as 'collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology' (Jasanoff, 2015: 6). This brings together the future orientation of the imagination with an understanding of the role of material technologies in achieving that future. Jasanoff details how sociotechnical imaginaries hold together the past and future 'in a complex dialectic' and prefigure difference and divergence of sociotechnical outcomes across political contexts; where there are also possibilities for imaginations of space to pre-exist but where imaginaries also serve to 'help to reconfigure actors' sense of the possible spaces of action, but also their sense of the rightness of action, at scales' (Jasanoff, 2015: 30–34). This is important as it suggests that collectively held socio-technical imaginaries not only imagine space and scales of action but also help to shape them.

In their work on IBM and Cisco, Jathan Sadowski and Roy Bendor (2019) argue that the smart city can be usefully understood as a socio-technical imaginary. By cultivating a narrative around multiple urban crises – particularly in relation to overpopulation and the pressure this creates on the organisation and operation of existing infrastructure systems – the technological fixes of the smart city are peddled as the inevitable solution by which new combinations of tech companies and city leaders can achieve control over these crises at city scale. This fix to crises is mass infrastructural re-design, where: 'If cities are going to survive and thrive in spite of this pressure, then the entire urban "system of systems"—transportation, buildings, water, power, public safety, emergency responses, and more—must eventually be redesigned and made smart(er) so it can sustain growth' (Sadowski and Bendor, 2019: 548).

The smart city as socio-technical imaginary bundles together in an 'integrated' way multiple infrastructures and technology, both conventional and digital. It represents and circulates this as inevitable and, in doing so, closes off potential alternative visions. As well as being driven by combinations of tech companies and city leaders, it also aims to 'transform the city into a "platform" for the integrated ICTs and governance models provided by the tech corporations' (Sadowski and Bendor, 2019: 552). The city, thus, becomes an experimental site and the city-as-platform becomes a circulating imaginary.

'Integration' between material and digital infrastructures is not solely the issue. How institutional logics and governing relations are mediated and organised and at what scale of organisation is important as much integration thinking 'often forestall[s] more politically informed discussions and downplay[s] potential risks and institutional restrictions'

(Monstadt and Coutard, 2019: 2191). Yet, socio-technical imaginaries of the smart city are not fixed; they are ‘always in the process of becoming’ (Sadowski and Bendor, 2019: 542), constituted by an uneven field of political struggle, where corporate interests are dominant but where their political visions are not inevitable. It is, therefore, important to understand the contexts in which socio-technical imaginaries are to be realised and how these contexts may re-shape them.

To address this issue we engage with the concept of spatial imaginaries, understood as ‘stories and ways of talking about places and spaces that transcend language as embodied performances by people in the material world’ (Watkins, 2015: 508–509). Josh Watkins (2015: 512–513) identifies three different types of spatial imaginaries: place imaginaries, idealised spaces and spatial transformation. Place imaginaries ‘communicate ideas about a broad variety of phenomenon supposedly characteristic of that place, ‘othering’ competing interpretations’. Idealised spaces are ‘descriptions of kinds of places, disseminating general stories about their universal characteristics’. Spatial transformation refers to ‘how places have, should, or deterministically will evolve through generalized processes of spatial transformation’. Yet, while representational accounts of spatial imaginaries have dominated, they can also be understood performatively as ‘embodied by people directly in what they do’ (Watkins, 2015: 517).

This suggests that the ways in which global technology companies are seeking to re-imagine urban futures via urban infrastructure and urban space can be understood through the lens of synthesised socio-technical and spatial imaginaries. It is important to understand such urban socio-technical imaginaries both as representations of desired urban futures of global technology companies and also through the political struggle around urban socio-technical imaginaries in the process of becoming.

## **Contextualising the case of sidewalk and Toronto**

Following from this analysis, we focus on the extreme case (Flyvbjerg, 2006) of Sidewalk Labs’ (SL) – a subsidiary of Alphabet and Google – efforts to develop a digital urban neighbourhood, the Quayside (and beyond), on the Toronto waterfront (Flynn and Valverde, 2019; Leszczynski, 2020; Morgan and Webb, 2020). SL offers a showcase attempt to build a smart city from scratch (Sadowski and Bendor, 2019). We do this in the context of Toronto where urban governance reform over the past three decades can be understood in various ways, including through the ways in which projects and initiatives have facilitated processes of state rescaling and mobilisation of scalar shifts in governing authority (Horak, 2013). Underpinned by calls to favourably position Toronto vis-à-vis other cities in the ‘race’ for global competitiveness, efforts to constitute Toronto as a competitive city have been predicated on shifting socio-political alliances and ideologies. This involved combinations of new modes of finance-oriented urban governance to encourage urban development that prioritised property development (Rosen and Walks, 2014), infrastructural transformation, including incorporating the economic benefits of (rhetorically at least) addressing the environment (Keil and Desfor, 2010), and cultural and mega-events (Lehrer and Laidley, 2008). In the move from a post-war metropolitan planning regime to neoliberal restructuring and rescaling of the local state in the 1990s (Kipfer and Keil, 2002), it has been argued that positioning Toronto as a competitive city, via state rescaling, has ‘actually diminished the local qualities cities depend upon to sustain such advantage’ (Hanna and Walton-Roberts, 2004: 37).

Focus on the Quayside site, a small area of the Toronto waterfront, can tell us much tangibly about shifts in the political economy of the wider Toronto, within which it sits. The Quayside development provided an at-scale experiment of efforts to constitute an urban neighbourhood and infrastructure system that innovates with grey, green and blue

infrastructure and that seeks to integrate these within a digital platform infrastructure. The Eastern Waterfront is an old industrial and shipping site that, over the last half century or more and in a context of not knowing how to make a post-industrial city, has been the focus of numerous, often fruitless, ‘regeneration’ projects since the 1950s. The consequence is that the site is a mix of overflow parking, an abandoned grain elevator and docks for numerous, small cruise boats.<sup>2</sup> The majority of the waterfront site is owned by Waterfront Toronto (WT), an urban development corporation that is public funded by the Canadian government, the provincial government of Ontario and the city of Toronto to redevelop 2000 acres of brownfield land in the old docks area<sup>3</sup> and where a planned and ‘participatory’ approach to the development of the waterfront began to develop from the late 1980s that involved processes of (largely middle class) stakeholder participation (Flynn and Valverde, 2019) and environmental sensitivities.

Though it is publically funded WT’s board is appointed and consists of numerous wealthy individuals, many of whom are focused on real estate development.<sup>4</sup> It was formally established in 2001 and has ‘very limited powers’ (Flynn and Valverde, 2019). Its approach since the early 2000s has been to ‘prepare’ the site through investing around Ca\$1.5bn in remediation, expanding public transport links and other public projects for the site. This, broadly speaking, was WT’s approach under its first CEO, John Campbell, who in many ways embodied its long-term, ‘participatory’ approach.

In 2015, Campbell was replaced as CEO by Will Fleissig, who arrived from a San Francisco-based development company. This coincided with a shift in approach to development on the Eastern Waterfront where the aim became to use the site as a ‘test-bed’, to rethink post-industrial regeneration beyond ‘conventional’ property-led regeneration and to test new technologies, new innovations and new governance partnerships.<sup>5</sup> According to a Toronto-based journalist: ‘Campbell retires and the board somehow finds Fleissig, and it’s like a magnet was waved over their brain and they forgot everything, they forgot all of the back story’. It is in that context that in March 2017, WT put out a Request for Proposals (RfP) to develop an area of the waterfront into a ‘highly sustainable mixed-use, mixed-income neighborhood’, creating jobs and affordable housing.<sup>6</sup>

In the remainder of the paper, we research the constitution of the dominant urban socio-technical imaginary of the Toronto waterfront as an ‘exemplary’ model, digital sustainable urban neighbourhood. In researching the Quayside development we undertook analysis – of policy documents, vision documents, developer documents and newspaper articles - to reflexively scope out the narrative in Toronto. We also undertook a programme of 12 semi-structured interviews with public officials, private interests and community interests. We developed the arguments in the paper via constant iteration between emerging themes from the literature, set out in the section above, themes from the material on Quayside and from the interviews (Lofland et al., 2005). On this basis, in the following analysis we (1) interrogate, over time, SL’s urban socio-technical imaginary and the way in which (2) it selectively prioritises infrastructure integration in producing a new digital urban space. We weave this together with an (3) understanding of the process and politics of the new fusions and forms of urban politics and governance that are both shaping of the shifting urban socio-technical imaginary and that are seen as required to realise it. (4) We speculate as to what the implications are of the new spatial-infrastructure configuration(s) that this imaginary aims to produce.

## **Imagining and negotiating a new digital urban (infrastructural) space**

The preceding account of wider political-economic shifts in Toronto and the waterfront is important context to understand the October 2017 announcement of the successful bid to

the RfP by SL of the development of a 12-acre stretch of Toronto's waterfront, the Quayside development. These plans, if realised, were claimed to represent 'one of the largest examples of a smart city project in North America'.<sup>7</sup>

SL was launched, by Alphabet, in 2015 and headed by Dan Doctoroff, a former New York City deputy mayor, under the Bloomberg administration, and former chief executive of Bloomberg. He claims that in the first two years following its launch, SL looked at 52 potential sites for development.<sup>8</sup> This search can be understood further in remarks attributed to Eric Schmidt, the then executive chairman of Alphabet, in the *New York Times* in 2017. Schmidt was reflecting on past internal organisational conversations. In these reflections, he said 'wouldn't it be nice if you could take technical things that we know and apply them to cities?' Furthermore, 'our founders got really excited about this. We started talking about all of these things that we could do if someone would just give us a city and put us in charge'. In the course of his 2017 comments, Schmidt also acknowledged that 'it doesn't work that way'.<sup>9</sup>

The October 2017 deal between WT and SL was unclear on many details. That said, the deal, at this point, involved only the 12-acre Quayside site. SL suggested it would spend (US)\$50m on developing its plan and public consultations. Through the Quayside development, SL aimed to develop the 'world's first neighborhood built from the internet up'.<sup>10</sup>

### *The yellow book as urban socio-technical imaginary*

Doctoroff's search of 52 sites and Schmidt's comments about 'just give us a city...' can be better understood via the development of Alphabet's urban socio-technical imaginary. In 2016 SL produced its Yellow Book, as a blueprint for 'no limits' digital design of cities. There is much mystique around the Yellow Book. A WT insider, working closely with SL, said: 'I've never seen it'. An academic told us that 'they [SL] brought out the Yellow Book and they shared it...at one of our briefing sessions... And one of their staff came over and put it in my lap and I opened the cover and the first page on the bottom page says "confidential, may not be shared in any way". And I was like, "oh I really want to read this but", and I shut the book and I gave it back to the fellow beside me'. The mystique should be no surprise given that, prior to its leaking and reporting in October 2019, the Yellow Book had seemingly been seen by very few people. Consequently, given its non-public status, our understanding of the Yellow Book is pieced together from media reports and from interview insights.

The Yellow Book is represented, claims the business channel CNBC, as being a 'coffee-table book' with the aim of helping 'employees and recruits get up to speed with the company's vision to redesign a city from the ground up'. It is said that the ideas in the Book draw on interviews with 'dozens of forward-thinking academics on every aspect of urban planning, from self-driving cars to garbage delivery'.<sup>11</sup> The book is 437 pages and, according to the Toronto newspaper *The Globe and Mail*, 'documents how much private control of city services and city life Google parent company Alphabet Inc.'s leadership envisioned when it created the company'.<sup>12</sup> The Yellow Book allegedly calls for 'the creation of privately owned and regulated roads, charter schools in place of publicly administered schools, the power to levy and spend property taxes without democratic oversight, a corporate criminal justice system where the cops and judges work for Sidewalk Labs, and totalizing, top-to-bottom, continuous surveillance'.<sup>13</sup> Access to many public services would be dependent on 'sharing' information with SL and a form of social credit system is proposed.<sup>14</sup> Unsurprisingly, according to *The Globe and Mail*, large urban areas with large areas of unused land are seen to provide 'enormous potential for value generation in



multiple ways', which includes: 'As a global showcase, as an adaptable testbed for innovation, as a generator of new products, and as perhaps the most ambitious real-estate development project in the world'.<sup>15</sup> This privately produced and envisaged urban socio-technical imaginary operated to articulate thinking within the confines of SL but also, at the level of mystique, beyond SL.

### *From the yellow book to a vision of integrated infrastructure in existing urban context*

The general approach sketched in the Yellow Book left unclear the issue of what would happen to this imaginary when it encountered an actually existing urban context.

According to a WT insider:

That [the Yellow Book] was kind of their roadmap of, if you had no boundaries and if you were creating a city from scratch, kind of thing... But nothing was real for them, to test out the theories that they were thinking through. In many ways, when they would talk to us, I think what excited them was that they would actually have some boundaries, to sort of [test] whether or not there was anything to what they were set up to try and accomplish from Alphabet. But until they had an actual piece of land to plan around and jurisdiction to operate in, they didn't know the constraints necessarily that would really present themselves.

In the 'vision' that SL developed and published in October 2017 as part of its RfP proposal, whilst the initial focus was on a 12-acre site, its wider ambition and vision covered approximately 800 acres of Toronto's waterfront potentially available for development. The vision promoted SL's technology from carbon-negative energy to affordable housing and autonomous vehicles<sup>16</sup> and suggested that SL would be a first-mover in producing an integrated urban development where movement around it is by using shared and self-driving vehicles, where buildings have no static use, and where streets are never dug up (SL, 2017). Envisioned were delivery robots, advanced energy grids, automated waste sorting, and self-driving cars. In this vision, new configurations of built environment, energy and mobility systems are required to address sustainability concerns and 'to tackle the thorniest problems in environmental performance' (SL, 2017: 22).

How this would all happen is not altogether clear. Which is the point: 'You can never truly plan a neighbourhood with every solution laid out from the start. Instead, you can give people the tools to create and experiment' (SL, 2017: 17). To elaborate, SL drew on thinking in the Yellow Book to inform its vision for the Quayside development and where it proposed combining these innovations in a way that has never been done before. It sought to be 'first' in integrating these kinds of innovations, material and digital, in ways that pervade all areas of everyday urban life.

This can be understood as follows. SL was working to develop a 'digital layer' that combined a distributed network of urban sensors, mapping via location-based information about the infrastructure, buildings and shared resources in the public realm, personalised portals to access public and private services, and a Model component that was intended to simulate 'what if' scenarios for long-term city planning decisions. This digital layer was intended to be connected to the city's existing core infrastructure (SL, 2017: 16–17). A standards layer was to set out rules for those living in the Quayside, developing it or governing it.

In this sense, arguably the vision for Quayside was for SL to provide a default platform, to which other interests, services and platforms must align with. The aim was that the development is built on clear data standards and well-supported application programming

interfaces (APIs) (SL, 2017: 33). This opens up the issue of whether the platform would be open to others and, if so, on what terms?<sup>17</sup> In doing this, SL was not only promoting a development but aimed to challenge regulatory frameworks and planning assumptions (SL, 2017: 27).

### *From vision to the MIDP*

Following the publication of its 170+ page vision in October 2017, there was substantial resistance, disagreements and complicity from various Toronto-based social interests in terms of the content and realisation of the vision. To address issues of realisation, from 2018, a scheduled 12 month process was intended to produce a Master Innovation and Development Plan (MIDP) for the site. Movement from the vision to the production of the MIDP was a complex, labyrinthine process that involved the production of strategic documents, the undertaking of engagement processes and the development of forums that brought into contrast public and private concerns, forms of expertise and various citizen interests, both within the locality and stretching globally. This variety of processes and forums included public talks, town hall meetings and Roundtables as well as the opening of a new Toronto HQ, 'prototyping space' and visitor centre (Sidewalk Labs 307), tech competitions, and civic labs. It also included the development of a Digital Strategy Advisory Panel (DSAP) in June 2018, to address the contentious issue of digital governance of the Quayside.

In this soup of participatory processes and actors arguably the key relationship was that between WT and SL. At the time of the vision and in the following months this was characterised as one of 'partnership' between the two. This caused some consternation amongst various groups. According to a Toronto academic the partnership between SL and WT produced an 'arranged marriage' and a hybrid organisation, Sidewalk Toronto, which lacked transparency but 'that was the public face of the project [that] started hosting all these events and it's been from the beginning very unclear to the public'. The Toronto publication *Spacing* claimed that: 'Torontonians watched as a civil servant and his staff repeatedly referred to Sidewalk Labs as a "partner" and the plan for Quayside as a "joint venture," as if public and board approval of whatever Sidewalk Labs conjured up were merely procedural formalities'.<sup>18</sup> The point here is that, for numerous and varied social interests, the SL tail was wagging the WT dog.

By July 2018 this appeared to be shifting with the 'gangplank resignation' of Will Fleissig from WT and his replacement with acting CEO, Michael Nobrega.<sup>19</sup> This appeared to signify a re-set in relations between SL and WT. At the end of July 2018 the relationship between WT and SL was reframed from the 'Framework Agreement' (FA) of October 2017 to a 'Plan Development Agreement' (PDA). This resulted in several shifts in the relationship; notably, from an assumption that implementation would happen to saying that agreements about implementation would need to be reached if the MIDP was approved. The PDA also removed Sidewalk Toronto from the parties to the agreement. It also stated that except for Quayside, no other lands are automatically included in the MIDP. In terms of roles: the PDA 'makes it clear that WT is the steward of the public interest'.<sup>20</sup>

By October 2018, the DSAP had seen two high profile resignations of Ann Cavoukian, the former Information and Privacy Commissioner for Ontario and the tech entrepreneur, Saadia Muzaffar on the basis of data privacy/surveillance and public trust issues not being effectively addressed.<sup>21</sup> Changes were made to the constitution of the WT Board in December 2018.<sup>22</sup> Perhaps paradoxically, over time, SL's attempts to position the Quayside development as having a largely technical rationality, and its constructed denial

of politics, had the effect of stimulating political contestation. Of importance, alongside this issue, was the way in which the relationship between SL and WT was initially presented as a 'partnership'. The close relationship between SL and WT was established as WT's 'participatory' approach to engaging with community interests, but was - according to community groups - weakened under Will Fleissig's leadership of WT. Additionally, the soup of 'participatory' processes that were organised around the Quayside development were often viewed as being, according to a Toronto-based academic, inadequate as 'we don't have a governance process to catch the complexity of this and this project has been this really big mirror back on what do you need to do if you're a city to be ready to play in a game like this'. In this context, a wide variety of groups and individuals provided critical voices, of varying volume. Some of these groups were constituted as a direct response to the Quayside development. This included Block Sidewalk, 'a group of Toronto residents' wanting to develop the Toronto waterfront for the benefit of Toronto residents rather than corporate shareholders.<sup>23</sup> Individual Block Sidewalk members also engaged vigorously with SL's proposals. These included Bianca Wylie, a Toronto-based activist, who was a persistent critic of the development and concerned particularly at SL's threat to democracy. The tech entrepreneur, Saadia Muzaffar, who resigned from the DSAP said in her resignation letter that '[t]here is nothing innovative about city-building that disenfranchises its residents in insidious ways and robs valuable earnings out of public budgets, or commits scarce public funds to the ongoing maintenance of technology that city leadership has not even declared a need for'.<sup>24</sup> The locally-based global tech entrepreneur, Jim Balsillie, laid responsibility for the development's problems at the door of WT, saying that 'Waterfront Toronto continues to weaponize ambiguity while making irreversible decisions that will have major negative effects on all Canadians'.<sup>25</sup> Other groups pre-date the Quayside development and have long been part of wider debates and struggles over the use and appropriation of space in Toronto. So, for example, both the West Don Lands Committee and the philanthropic Atkinson Foundation, to varying degrees, voiced criticisms of the development. This contributed to a rich political dynamic where SL's efforts to coral social and community interests via a glossy imaginary, a close relationship with public decision-makers, and multiple 'participatory' processes arguably contributed to an invigorated political dynamic via mechanisms and processes that were difficult for SL and WT to control.

In this context of re-invigorated politicisation, in May 2019 the draft MIDP was published (SL, 2019a). It was a substantial piece of work at 1524 pages long, in three volumes, and weighing eight kilograms (Toronto Life, September 2019, p.53). As an urban socio-technical imaginary, it maintained many of the principles articulated in the Yellow Book; including widespread urban innovation and the integration of urban infrastructures; and new modes of public-private urban governance. Discursively and performatively, the concepts of urban innovation and infrastructural integration were fused to the idea of socially mixed communities and the development of a low greenhouse gas emissions neighbourhood, where: 'All together, more than five dozen innovations would be *combined in a single place for the first time*, creating a global model for combining cutting-edge technology and great urban design to dramatically improve quality of life'. This would operate across 'nearly every dimension of urban life' (Sidewalk Labs, 2019a: 36, emphasis added). This also involved the MIDP articulating that 40 per cent of residential housing would be offered at 'below market' value.

Additionally, the draft MIDP claimed that the development would produce 89% lower greenhouse gas emissions than the rest of the city, that an independent government-sanctioned 'urban data trust' would be established to deal with data privacy issues, that a timber manufacturing plant would be established for the timber housing envisaged, and a

new Canadian headquarters for Google would be located in the development. Furthermore, in the draft MIDP, SL (with its partners) promised to spend up to \$1.3 billion on the neighbourhood, creating 44,000 direct jobs, \$4.3 billion in annual tax revenue and \$14.2 billion in annual GDP output by 2040 (SL, 2019a: 36–37; Toronto Life, September 2019: 53).

Crucially, SL made the argument that the plans in the MIDP couldn't be achieved on the envisaged 12 acre site but, instead, needed 190 acres. The original 12 acres of the Quayside would be bundled together with a larger River District of five neighbourhoods, including Villiers West, as an Innovative Design and Economic Acceleration (IDEA) District. This would act 'as a catalyst for economic development focused on urban innovation' and critically would be 'subject to a special set of regulatory and policy tools to promote innovation and accelerate development'. This reframing was cast as requiring, 'a larger geography to achieve the most ambitious quality-of-life targets in a financially feasible manner' (SL, 2019a: 38).

Following submission of the draft MIDP, WT's Board Chair, Stephen Diamond, strongly re-affirmed the re-set relationship between SL and WT and also stated that 'it is clear that Waterfront Toronto and Sidewalk Labs have very different perspectives about what is required for success'.<sup>26</sup> WT moved quickly after its publication to set out its position in detail – in a 67 page Note for Readers. This raised four key issues of concern. First, WT questioned the scale of the proposed development, beyond the 12 acres of the Quayside. Second, SL's proposal to be lead developer in the Quayside was challenged. Third, the priorities set out in the MIDP were dependent on commitments from government, including 'the extension of public transit to Quayside prior to development, new roles for public administrators, changes to regulations, and government investment'. Which were 'not commitments that Waterfront Toronto can make'. Fourth, in relation to data collection, use and governance, WT required 'additional information to establish whether they are in compliance with applicable laws and respect Waterfront Toronto's digital governance principles'.<sup>27</sup> The Note to Reader should be understood as part of a wider response from WT which included a 'public consultation' process and a formal review and evaluation.

The decision on the MIDP scheduled for October 2019 was delayed until 31 March 2020. This was subsequently delayed again in January 2020 until 20 May 2020; and delayed again until 25 June 2020 in the context of the Covid-19 pandemic. On 7 May 2020, a letter from SL CEO Dan Doctoroff was published where he stated that SL would no longer be pursuing development on the Toronto waterfront 'as unprecedented economic uncertainty has set in around the world and in the Toronto real estate market, it has become too difficult to make the 12-acre project financially viable without sacrificing core parts of the plan we had developed together with Waterfront Toronto to build a truly inclusive, sustainable community'.<sup>28</sup> The Covid-19 pandemic arguably provided convenient cover for this unilateral withdrawal. Citing uncertainties in real estate markets was somewhat ironic since SL had made persistent claims that their 'moonshot' project, mobilising Alphabet's 'patient capital', for the future of cities was anything but a short-term real estate play. But, in the context of increasingly awkward local politics and with little more than a sales studio as material instantiation of the imaginary, withdrawal for a global tech company was relatively costless. Meanwhile, Toronto was left, once again, with thwarted plans for its Eastern Waterfront. How and where the Sidewalk imaginary touches down next is uncertain. But, given the overreaching in the Toronto experiment, perhaps the 'all in one go' imaginary will be dismantled into constitutive pieces to be experimented with piecemeal in different locations (Interview SL).

## **Global technology companies and the politics of urban socio-technical imaginaries: Processual proxies, Trojan horses and global beachheads**

Through the critical case of SL's socio-technical imaginary, we have examined the process and politics of how a global technology company, as indicative of a 'new' and aggressive kind of actor, (re-)imagines urban infrastructure and urban space. This focus and the material that it produced illuminate various critical analytical implications. We further develop three of these implications.

### *Urban socio-technical imaginaries as processual proxies of political struggle*

In their work on urban infrastructure integration, Jochen Monstadt and Olivier Coutard (2019: 2191) suggest that there is frequently a 'gap' between what is said to be required and what materialises and that a focus on fragmented infrastructures requires understanding of the boundary work that is necessary to integrate existing urban infrastructure and digital platforms.

In the case of the Quayside, the narrow coalition of social interests involved in development was led by a global technology company but realisation remained limited. SL mobilised an urban socio-technical imaginary in seeking to normalise and legitimise its infrastructurally integrated vision of the urban future. This, though, was not merely a representational imaginary, it was also performative (Watkins, 2015). The movement from SL's urban socio-technical imaginary to attempts to materialise it saw a shift from a symbolic emphasis on integration to a focus on how SL's proposal could and could not be aligned with the existing socio-technical context in Toronto. Integration of multiple infrastructure systems requires various functional, ecological, technological, economic and political interlinkages across infrastructural domains (Monstadt and Coutard, 2019). In the case of Quayside, existing urban context was something that those promoting SL's urban socio-technical imaginary had to negotiate with but where, what and who they were negotiating with and on what basis appeared to shift, particularly from summer 2018. The contribution we make here is not that this 'gap' between urban socio-technical imaginaries and their (non-)realisation is apparent but to articulate deep understanding of the long-term process and politics of its negotiation.

More specifically, we wish to make the argument that the urban socio-technical imaginary was a proxy of processual struggle between the politicisation and depoliticisation of urban transformation. Such struggles are not new. There are resonances here with debates around the post-political (Swyngedouw, 2009). The urban socio-technical imaginary was used symbolically and performatively as a mechanism to try and close down political debate. Think, for example, about how the contents of the Yellow Book were closely guarded but how its principles became manifest in the vision and the MIDP. The imaginary was also a mechanism for opening up political debate. Its manifestation, particularly via the MIDP, was contested and politicised in a variety of ways (resignations, clarifications, threshold issues). In this way, the imaginary became a mechanism of struggle for symbolic power (Bourdieu, 1991) – and thus legitimacy – for both SL and WT. Over time, the performative politics of SL's urban socio-technical imaginary, and the 'collectively held, institutionally stabilized, and publicly performed visions of desirable futures' (Jasanoff, 2015: 6) that it embodied, arguably contributed to WT's docility from 2017, under a leadership that was amenable to what SL were proposing. Political struggle re-asserted itself through internal organisational struggle in WT, particularly manifest from summer 2018, and then the rules of the game (Bourdieu and Wacquant, 1992) between SL and WT were re-set. The locus of

these struggles was the urban socio-technical imaginary. The representational flattening and the symbolic flourishes it permits allowed SL to frame-in desirable representations and to frame-out problematic issues and relational politics (Massey, 2005). Once the public interest position of WT was re-articulated from the middle of 2018, vis-à-vis the position of SL, this made more visible institutional logics that were in tension (generating profit vs public interest). Thinking about integration beyond material infrastructure, this allowed the role of politically informed discussions, potential risks and institutional restrictions (Monstadt and Coutard, 2019) to become more visible. It also rendered the issue of who decides which pathways to urban development are ideal (Caprotti, 2015) as best understood as a set of uneven power relationships of social interests and processes. In this case, there was a complex role for state interests in shaping such urban development. Again, this opening up and closing down is not new, but detailing *how* the imaginary is ‘always in the process of becoming’ (Sadowski and Bendor, 2019: 542), as dynamic, performative and articulating the processes of politics that are mediated over time in a rich empirical manner is a contribution. This also illustrates how the boundary work required to integrate urban infrastructures (Monstadt and Coutard, 2019) has a deeply strategic dimension as well as raising operational challenges.

### *Infrastructure integration as Trojan horse for experimenting with private urban governance?*

For three decades, urban entrepreneurial governance has perpetuated a shift from a focus on the ‘managerial’ local provision of services to urban populations to an ‘entrepreneurial’ focus on how coalitions of urban social interests could promote boosterist local economies (Harvey, 1989). The variability of urban entrepreneurialisms (Phelps and Miao, 2019) has been recognised as has the politics and urban governance that underscores this variety (Acuto, 2020). Clearly WT’s RfP was in the vein of entrepreneurial urban governance, in setting the stage for a corporate partner to come into the city and redevelop its waterfront. On the waterfront, this started with what was presented as a ‘conventional’ public-private ‘partnership’ but where the balance of power was substantially with the private interest.

Fundamental to the Quayside development was a struggle about the future of urban governance. In the MIDP, SL argues that ‘A project of this scope, complexity, and duration requires strong public oversight and a regulatory framework *predisposed to new approaches*. . . A carefully targeted package of regulatory reforms and development standards would apply in the IDEA District’ (SL, 2019 b, p.32 emphasis added). In this respect, SL is the proposer of governance and regulatory changes and the public agencies, including WT, are the overseer. Tactically, SL highlights that it is ‘fully prepared to work with Waterfront Toronto, the three orders of government, and the people of Toronto to *further refine* the solutions and approaches contained in the MIDP’ (SL, 2019 b, p.45 emphasis added). Note, this refers to refining the ‘solutions’ designed and proposed by SL rather than being prepared to work with a radically different set of arrangements.

Specifically in relation to Quayside and Villiers West, from SL’s point of view this required more powers for the public administrator (whether WT or new public bodies) to have the ‘ability to set innovation and development priorities’ (SL, 2019b: 63). This appears to mean that more powers would be concentrated at the level of the development in the hands of the public administrator but that this ‘empowerment’ should be understood as part of ‘the oversight and management of a dedicated, nimble, and empowered public administrator with the ability to set innovation and development priorities’ (SL, 2019b: 63). It is not too much of a stretch to make the argument that a concentration of powers in an existing or

new public body at site level, a façade of public administration re-cast as overseeing and management and a private tech company with aspirations for private urban governance aim to create the conditions for a reconfiguration of urban governance (Hodson et al., 2017) in pursuit of private interests as previously set out in the Yellow Book and the Vision. Tangibly, SL proposed five ‘management entities’ that ‘would take on responsibilities *outside the jurisdiction of existing public agencies*, pilot and administer novel systems, and consolidate certain powers as needed to carry out an integrated district-focused strategy’ (SL, 2019b: 68, emphasis added). In short, this represents an experiment with new forms of private urban governance at community-level and reliance on being ‘financial self-sustaining’, as articulated previously, at abstract level, by the Yellow Book. In this respect, the symbolic integration of urban infrastructure promoted in SL’s urban socio-technical imaginary can be seen as a Trojan horse<sup>29</sup> for experimentation with new modes of largely private forms of urban governance that reconfigure relationships between private and public urban governing.

At the level of the imaginary, this symbolises the pursuit of ‘[n]ovel forms of privatised control [that] are increasingly manifesting across urbanised regions’ (McCann, 2017: 315). For SL, the development was not about place marketing but experimenting with and marketing corporate solutions and modes of governing. This goes way beyond entrepreneurial governance and is not merely about public governing making place amenable to private interests but is about private interests designing new tools for urban governance. The implications of this are of a need to move beyond a politics of urban transformation that prioritises the idealised space (Watkins, 2015) over place imaginaries and, in this case, a need to engage, at the inception of an urban socio-technical imaginary, with the wider urban context, its governance and politics and its infrastructure systems.

### *Establishing the beachhead to circulating a corporate city?*

A third issue that we wish to focus on is the selective promotion of spaces and scales in organising and prioritising infrastructural integration (Monstadt and Coutard, 2019). In this respect, the urban socio-technical imaginary was deliberately ambiguous about the parameters of urban space and scale involved in the development, both in its articulation and in the process of becoming. This meant that the 12 acres of the Quayside were also variously a potential 800 acre development and a 190 acre development. As an urban socio-technical imaginary, the Yellow Book can primarily be understood as promoting an idealised space of urban future development of ‘descriptions of kinds of places, disseminating general stories about their universal characteristics’. It also emphasised spatial transformation and ‘how places have, should, or deterministically will evolve through generalized processes of spatial transformation’ (Watkins, 2015: 513). In the Quayside development, this idealised space of spatial transformation in the Yellow Book then met a real-life context. The idealised and spatial transformation aspects of the urban socio-technical imaginary often smothered the sense of place imaginary and ‘communicat[ing] ideas about a broad variety of phenomenon supposedly characteristic of that place’ (Watkins, 2015: 512).

Infrastructurally, Quayside was an attempt to develop new digital systems of control of urban infrastructure and services (i.e. controlling the means of control). But, more than this, it was also about how this would come to fruition through experimentation. This, though, was not experimentation in the sense of politically disinterested learning, rather it was about learning to promote how private tech might shape the future of the city. The resonance and relevance of the Quayside site to SL was not restricted to Toronto. As SL noted, successful realisation of the vision was intended to ‘create a replicable model for the world’ (SL, 2017:

16). In this respect, experimentation with infrastructural ‘integration’ was fundamental to the urban socio-technical imaginary and the audience for this was not primarily to be found in Toronto. ‘The model’ of what was being experimented with was intended to be circulated far beyond Toronto. This resonates with debates around policy mobilities (McCann and Ward, 2013; Wiig, 2015) and worlding. But the question is, what is it that was intended to circulate and for what purpose?

Much of the critical debate around the Quayside development addressed questions of digital privacy and surveillance. Whilst these are undoubtedly critical issues, SL were arguably using the Quayside to experiment with and to establish a privately governed and controlled new, model urban space of infrastructural and digital integration; an at-scale model of development that assembled private urban governance, property development and an urban infrastructural complex constituted by an urban system of systems with digital systems of control. In this respect, in their urban socio-technical imaginary, SL mobilised a digital layer of control. This resonates with the computational logic of an urban operating system (Marvin and Ayala, 2017). This governance experimentation needs to be understood in the context of broader geopolitical-economic tendencies towards the destabilization of urban governance configurations, as documented by Peck and Tickell (2002) during the 1990s and early 2000s. But, the extreme case of the Quayside represents a shift in this context. Here, it was global big tech driving the process; and, it goes beyond episodic regulatory experiments and piecemeal control over specific urban services towards an audacious play for private urban governance and control over the whole system of urban infrastructure and associated services. In this sense it speaks directly to how ‘the production of neoliberalized regimes of urbanization has occurred in large measure through spatial and scalar transformations of statecraft that have extended, institutionalised and normalized market discipline across the urban fabric while also targeting certain strategic sites within each territory for intensified transnational investment, advanced infrastructural development, and enhanced global connectivity’ (Brenner, 2019: 11).

It is this *model* of private digital control that SL sought to experiment with and circulate. In doing so, they were using Toronto as an anchor point, or according to an Ontario-based critic of SL, a ‘global beachhead’ where they ‘take control of the digital nervous system and they control who and what they interact with’.

This is their Normandy. They blow this, they go back to the drawing board for a couple of years.

This is a big deal. It’s a big deal. Because beachhead is the whole next trillion dollars to the market. It’s not a test bed, it’s way more substantial than that.

Attempts to obscure (through the Trojan horse) the new visions for private digital governance of urban space were crucial for the ambition to establish a beachhead in Toronto. This is because, in contrast to conventional fast policy mobilities that are initially seeded in test beds, once established in a *beachhead*, digital platform control expands and extends across space through the platform economics of network effects, increasing returns to adoption and the formation of standards.

Presenting the imaginary as a model for circulation both highlights, paradoxically, the symbolic potential for path dependency that embedding the model in place has in structuring infrastructural development possibilities for other places and also a view that prioritises unproblematic diffusion over the messy politics of circulation and institutional mediation of reception. The politics of circulation and reception in Toronto can be seen in the ways in which the urban socio-technical imaginary for the Quayside was carried by an army of PR agents and lobbyists. The irony is that efforts to depoliticise and administrate the process



through the urban socio-technical imaginary stimulated civic engagement and responses by regulators. The point here is that whilst the codified model of the imaginary was intended to travel and have substantial symbolic power beyond Toronto ‘there is much that cannot be so easily bottled for export, including charismatic leadership, propitious local circumstances, and the presence of supportive partners’ (Peck and Theodore, 2015: xvii). This it to ‘underline the claim that policy transfer is an inherently political, in fact *geopolitical*, process, one that is impossible to abstract from sociospatial and historical context’ (Peck and Theodore, 2015: 15, original emphasis).

## Conclusions

In this paper we have addressed the politics, process and implications of imagining a new digital urban space. We synthesised literatures on socio-technical and spatial imaginaries to interrogate the process and politics of imagining a new, digital urban space on the Toronto waterfront. In this process, SL sought to position themselves at the forefront of such activities, purposively designing and governing new digital urban spaces via infrastructural experimentation. In doing this, and in the absence of tangible, material development, SL engaged seriously in the development of an urban socio-technical imaginary to selectively symbolise, communicate, persuade and legitimise the development with various social interests.

Neil Brenner has claimed that: ‘New urban spaces have been actively forged through the aggressive, and often socially and politically regressive, rescaling of state space during the last four decades’ (Brenner, 2019: 11). SL and the Quayside development clearly can be understood within this frame. By researching efforts to constitute this space processually we have demonstrated attempts to use the urban socio-technical imaginary to both de-politicise and to politicise the development.

Our three analytical contributions all inform understanding of the role of big tech in designing new urban futures. These three contributions are interrelated in the sense that in the early stages of development the proxy politics of the urban socio-technical imaginary saw some degree of alignment between key social interests. This allowed the articulation of the Trojan horse of new, private modes of urban governance to achieve some degree of purchase or grip in the imagination of the public authority. This was an attempt to use urban politics to legitimise novel techniques of private urban governance. Furthermore, this was to subsequently be part of an attempt to establish a wider beachhead of the private urban governance of new digital operating systems that would set the de facto standard for, and thus control of, the provision of urban services. Yet, as the process of proxy politics became more adversarial the attempts to legitimise new modes of private urban governance and to establish the beachhead failed.

The implications of our analysis resonate beyond Toronto. The mobilisation, by global technology companies, of urban socio-technical imaginaries needs to be understood not solely through the lens of representation but through the process and politics that are played out through them. We developed three particular analytical points – through a lexicon of processual proxies, Trojan horses and global beachheads – that articulated how the claims of big tech on urban futures are being played out via urban socio-technical imaginaries. This includes via depoliticisation and politicisation, through attempts to experiment with new private modes of urban governance, and attempts to assemble and circulate globally the model of digital urban infrastructural control and urban space. The re-activation of urban politics resulted in the failure of big tech to realise its urban socio-technical imaginary.

The pulling out of SL from Toronto doesn't eradicate the imaginary, just its realisation in Toronto. The politics of the digital control of urban infrastructure and space and the role of big tech in this remains embodied in the imaginary and issues remain as to under what conditions and in what context is this likely to be reactivated.

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