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Smart-Washing the City: A Study on the Privatization of Urban Digital Infrastructures in the Global South

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Over the past 15 years, various approaches to urban intelligence have emerged, with significant critical work examining smart cities and data extractivism. Yet, there has been relatively limited research into the socio-political impacts of the smart city agenda, particularly concerning digital rights, digital infrastructure privatization, and the right to the city in the Global South. In Latin America, civil society organizations and investigative journalism have been instrumental in highlighting concerns related to surveillance, privacy, and data protection. This article analyzes what we call the "smart-washing" of digital infrastructures in Brazilian cities, leading to increased privatization of urban services and the indiscriminate, technosolutionist use of artificial intelligence. This process occurs under the guise of a corporate-led smart city agenda despite existing regulatory frameworks safeguarding digital rights or public interest advocacy. The Brazilian case holds relevance for the global community, as it affects issues of communication, digital infrastructure, and fundamental rights.

Keywords: smart cities, digital infrastructure, digital rights, artificial intelligence, Brazil

Varied approaches to urban smartness have proliferated over the last 15 years, with a substantial part of the literature offering critical takes on smart cities and data extractivism worldwide (Antenucci, 2021; Datta, 2008; Kitchin, Lauriault, & Cardle, 2018; Morozov & Bria, 2018; Niaros, 2016; Poli de Figueiredo, 2018; Reia & Cruz, 2023; Söderström, Paasche, & Klauser, 2014). However, comparatively fewer studies have examined the socio-political impacts of the smart city agenda at the intersection of digital rights, privatization of digital infrastructures, and the right to the city in the Global South. In Latin America, civil society organizations (CSOs) have played a crucial role in shedding light on issues of surveillance, privacy, and data protection (Al Sur, 2021), while investigative

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journalism has been key to raising concerns about the deployment of data-centric technologies in public spaces.[1]

This article analyzes the "smart-washing" of digital infrastructures in Brazilian cities, a process that drives increased privatization of urban services. The term is adapted from similar concepts like greenwashing (de Freitas Netto, Sobral, Ribeiro, & da Luz Soares, 2020) in environmental issues and ethics washing (Bietti, 2020) in big tech. Smart-washing occurs under the guise of a smart city technopolitical agenda (Kurban, Peña-López, & Haberer, 2017; Winner, 1980) driven by industry and corporate interests.

We argue that the processes unfolding in Brazil are relevant to the international technology policy community because of their impact on urban communication (Jassem & Drucker, 2017), infrastructures, freedom of expression, and fundamental rights. Additionally, this study is important to communication studies for three reasons. First, it links long-lasting questions in the field—questions of regulation, lobbying, and privatization—explored by media scholars over the decades (Ihlen, Valentini, Davidson, & Shavit, 2020; Winseck, 1995) to the current analysis of artificial intelligence (AI) deployment across society. Second, it offers insights into discussions on the materiality of media (Lievrouw, 2014) by examining digital public infrastructures (DPI)—from connectivity to data centers—necessary for urban smartification. Lastly, it highlights the importance of communication studies to urban studies while addressing the built environment that helps us understand how emerging technologies are represented, narrated, and marketed.

Smart-washing parallels the historical privatization of telecommunications governance (Lima, 2011; Mody, Bauer, & Straubhaar, 1995; World Bank, 2005), where corporations manage public infrastructures through long-term contracts, often leading to reduced state ownership (Kettl, 1993) and involving (unregulated) lobbying (Winseck, 1995). Our study shows that, in smart cities, this process is even more opaque. The transference of urban services and digital infrastructures to the private sector via public-private partnerships or procurement catalyzes proprietary, non-interoperable solutions or the acquisition of off-the-shelf solutions that provide one-size-fits-all products to very different cities.

By anchoring our work in the vast transdisciplinary networks of knowledge production around the role of technologies in cities, we aim to bridge communication studies, emerging digital rights scholarship, and critical data studies. The privatization (Dannin, 2005) of public digital infrastructures in Brazilian urban spaces (Voorwinden, 2021) has been ongoing, notably in spectrum allocation policies (Mizukami, Reia, & Varon, 2014), connectivity, Internet universalization (Penteado, Souza, Fortunato, & Silveira, 2016), and Internet governance (Belli, 2015). Recently, the emergence of generative artificial intelligence, large language models, and synthetic media has posed new challenges to the privatization of digital infrastructures in local governments—especially data centers, fiber optic cables, and control rooms (Hirata & Cardoso, 2016). Loopholes in regulatory frameworks can be exploited by private interests, while narrow views of what constitutes "smart" and "urban intelligence" give way to corporate agendas in establishing policy priorities.

[1] See, for example, the series "*Quem paga a conta*?" ("Who pays the Bill?) on corruption, lobbying and technology in Brazilian cities published by Intercept Brasil (2023).

Here, we view urban intelligence beyond just smartness and data-centric projects, drawing from Shannon Mattern's (2021) reflections on the critique of computational efficiency. Another crucial aspect is related to a critical view of corporatization of the smart city narrative (Söderström et al., 2014), where we aim to resist "the temptation to assume that the smart city will work or be materialized in exactly the way the corporate imaginary lays out" (Sadowski & Bendor, 2019, p. 556) while examining cities of different sizes in Brazil.

Corporate storytelling in smart city initiatives also contributes to the hierarchization of cities in rankings based on the purchase and adoption of specific technologies, generating "smartmentalities" that influence urban identities (Vanolo, 2014). As we see it, the smart city agenda shifts our focus to a short-term understanding of our territories through big data (Batty, 2013), selling the promise of efficiency (Kitchin, 2015; Kitchin et al., 2018; Niaros, 2016), alongside improved governance mechanisms that not only automate services but also seek to monitor and control the city (Meijer & Bolívar, 2016).

Building on the literature critiquing "technosolutionism" (Morozov, 2013) and technological shortcuts aimed at addressing centuries of inequality in a country like Brazil, this article also offers perspectives on issues of digital colonialism (Ávila, 2020; Lippold & Faustino, 2022) and data colonialism (Cassino, Souza, & Silveira, 2021), especially when transnational companies influence local data policies and governance—whether through operation centers or hardware provision. The findings presented here engage with the reflections of scholars concerned with social justice in the advance of datafication, also known as data justice (Dencik, Hintz, & Cable, 2016; Dencik & Sanchez-Monedero, 2022; Taylor, 2017), while working toward the democratization of urban technology (Morozov & Bria, 2018) and consolidating networks of public interest technology (McGuinness & Schank, 2021).

Another key aspect that guides this work is the focus on human rights in a digital context, also known as digital rights (Pangrazio & Sefton-Green, 2021; Taylor, 2017), and an intersectional approach that considers issues of fairness (Hoffmann, 2019), gender identity and expression (Silva, 2021; Wood, Ringrose, Gutierrez, Stepanovich, & Colson, 2022), race and ethnicity (Benjamin, 2019; Carroll et al., 2020), disabilities (Claypool, Carey, Hart, & Lassiter, 2021) and ethical considerations (Wagner, 2018; Ziosi, Hewitt, Prathm, Taddeo, & Floridi, 2022).

Given that corporate power, networks of civil society, and academic collaboration are transnational, we build upon knowledge sharing from the Global South. Brazil has been an international leader in digital policy (Arnaudo, 2017) and the right to city movements (Gordilho Souza, 2018; Maricato, 1985; Tavolari, 2016), which have significantly influenced reflections on the "smartification" of digital infrastructures in urban spaces (Firmino, Kanashiro, Bruno, Evangelista, & Nascimento, 2013; Gaffney & Robertson, 2018; Israel, 2019; Poli de Figueiredo, 2018; Reia & Belli, 2021) and their impacts on historically marginalized communities (Silva, 2020; Souza & Zanatta, 2021). Understanding this context provides tools to better comprehend the dynamics between corporate power, policymaking, and civic engagement (Brandusescu & Reia, 2022) within the complex smart city agenda for the Global South.

Beyond scholarly literature and white papers, our work draws on the crucial knowledge produced by CSOs, think tanks, and independent research centers addressing pressing issues that require rapid response or positioning. For this reason, we included reports and white papers that question facial

recognition systems (Nunes, 2022; Raji et al., 2020), raise privacy concerns (Privacy International, 2017), and highlight the broader risks of human rights violations (Access Now, 2021b) resulting from algorithms that reproduce racism and gender discrimination (Silva, 2020; Silva & Varon, 2021). We consider a multistakeholder approach to this agenda crucial, but are aware of its shortcomings (Sambuli, 2021) and the many challenges of civic engagement with data in smart cities (Baibarac-Duignan & de Lange, 2021).

This article is divided into three parts. The first part categorizes the smart city ecosystem in Brazil and identifies stakeholders based on fieldwork at smart city expos and forums. The second part situates our work within a policy and legal context, focusing on unregulated lobbying and public-private partnerships as enablers of smart-washing. The third and final part presents significant industry-led smart city policies centered on the privatization of digital infrastructures and examines how other actors navigate this scenario.

Methodological Framework

The findings of this article are based on fieldwork conducted in Brazil between 2018 and 2022 as part of a research project initially funded by the Open Society Foundations. This project evolved into a continuous inquiry into the smart-washing of urban services and digital infrastructures in Brazilian cities. Given the scope and timeframe of the project and the challenge of studying a complex object like a smart city ecosystem, we opted for a combination of research methods. First, we conducted a literature review that encompassed both national and international analyses of smart cities, including but not limited to scholarly papers, books, edited volumes, industry and civil society reports, and official documents covering the topic. We also conducted a legal and policy analysis of relevant documents, legislation, charters, white papers, and policy recommendations. Additionally, whenever information was not publicly available, we relied on the Access to Information Law ("Lei de Acesso à Informação," Law 12.527, from 2011)—the legal equivalent of the Freedom of Information Act (FOIA) in Brazil.

To fill the gaps in the literature and understand the politics behind the deployment of big data technologies in the country, we conducted fieldwork to investigate how stakeholders relate to each other in the smart city ecosystem. Fieldwork was divided into two parts: semi-structured in-depth interviews with key stakeholders and specialists (such as researchers, government representatives, civil servants, company representatives, and expo organizers) and participant observation at operation centers (COR and Instituto de Cidades Inteligentes), as well as three of the largest smart city expos and forums in Brazil. Access to these spaces was made possible by dedicating a significant portion of our funding to cover entrance fees, which granted us access to discussions and exhibitions that are rarely present in the literature, mainly because of the exorbitant admission prices and limited engagement with academia and civil society in their programming.[2]

[2] The barriers to admission will be discussed in more detail in this article, but it is relevant to acknowledge that, often, a single ticket to smart city expos can cost more than the monthly minimum wage in Brazil.

A third point worth mentioning is the authors' involvement with public interest advocacy, including their participation in public hearings about the deployment of data-centric initiatives in urban spaces.[3] From public hearings to networked campaigns at the state and local levels, the experience gathered over the last 10 years is reflected here.

In terms of geographical scope, we looked at cities that were (1) drafting smart city master plans with consultancies leading the process (Juazeiro do Norte, Salvador, and Vitória); (2) invested in flagship operation centers (Rio de Janeiro); (3) awarded global smart city awards (Rio de Janeiro and Curitiba); and (4) hosting large smart city expos (São Paulo and Curitiba).

Categorizing the Smart Cities Ecosystem in Brazil

Eduardo Paes, elected Mayor of Rio de Janeiro three times, addressed an enthusiastic audience in a 2012 TED Talk, saying he had the best job in the world (Paes, 2012). Rio was in the spotlight for a few years, especially after it was selected to host the 2016 Olympic Games and the 2014 FIFA World Cup. Around the time of the announcement, in November 2009, the British newspaper *The Economist* featured a cover of Christ the Redeemer at Corcovado, a famous tourist destination in Rio de Janeiro, being launched into the sky with the headline "Brazil Takes Off" (The Economist, 2009). The upcoming megaevents were not the only reason to hope for a better future for Brazilian cities but were catalysts of a wide range of changes. In the four commandments of cities presented by Paes, the fourth one stated that "a city of the future has to use technology to be present" (Paes, 2012, 00:10:56).

During Paes' mandate, the municipal administration implemented a series of data-centric solutions, such as Rio's Center of Operations (Centro de Operações do Rio - COR). Paes "enlisted IBM Brazil to build COR [. . .] at a cost of R$14m," being promised as "the world's most ambitious urban command centre" (Frey, 2014, para. 13) with the goal of integrating different departments, monitoring the city in real-time, and predicting problems that needed a rapid response (Centro de Operações Rio, n.d.). This endeavor led to international awards. In 2013, Fira Barcelona, the organization responsible for the Smart City Expo, selected Rio as the winner of the World Smart City Awards in the City category (Lecha, 2013). Other cities in Brazil, like Manaus in the Amazon region, followed the trend (G1 Amazonas, 2020), developing their own operation and control centers.

Behind these achievements is the pursuit of efficiency through big data and data science tools. COR uses data sets integrated from over 30 municipal departments and immense dashboards as a promise to improve urban life. Struggling with violence, floods, traffic, and inequality, Rio hosted the megaevents amid social opposition and was left to deal with the aftermath of the games: debt, corruption scandals, and the 2016 election of a right-wing mayor who discontinued many of the big data projects developed at COR. The budget cuts, combined with a new focus on using big data for public security and order, diminished COR's ability to function as a broader urban command center. The following years saw the intensive deployment

[3] See, for example, a summary of the public hearings at Beltrão (2022) and Câmara Municipal do Rio de Janeiro (2021).

of facial recognition systems in the city, resulting in false positives and wrongful arrests (Fantti, 2019). When re-elected, Paes spent the first day of his new mandate, January 1, 2021, at COR (Callegari, 2021).

The political context heavily influences the deployment of data-centric projects at the local and federal levels in a complex multistakeholder ecosystem. In Brazil, the instability following President Dilma's impeachment, alongside the election of an authoritarian, far-right government (Pinheiro-Machado & Scalco, 2020) that defunded science and technology, hindered efforts to safeguard data protection. Instead, it was used to deny FOIA-equivalent requests (Tecnoblog, 2022) and impose a 100-year sigil on public data (BBC News Brasil, 2022). Connections between corporate power and government deepened, narrowing opportunities for civic engagement or promoting a positive agenda (Reia & Cruz, 2023).

The promotion of smart-washing often centers on private interests, not because of a market flaw but by design. Brazil's smart city ecosystem encompasses several stakeholders beyond well-known players like transnational companies. A key focus of our project has been identifying categories, organizations, and individuals within this ecosystem. Consequently, we mapped the main stakeholders presented below (Figure 1) in an exploratory systematization.

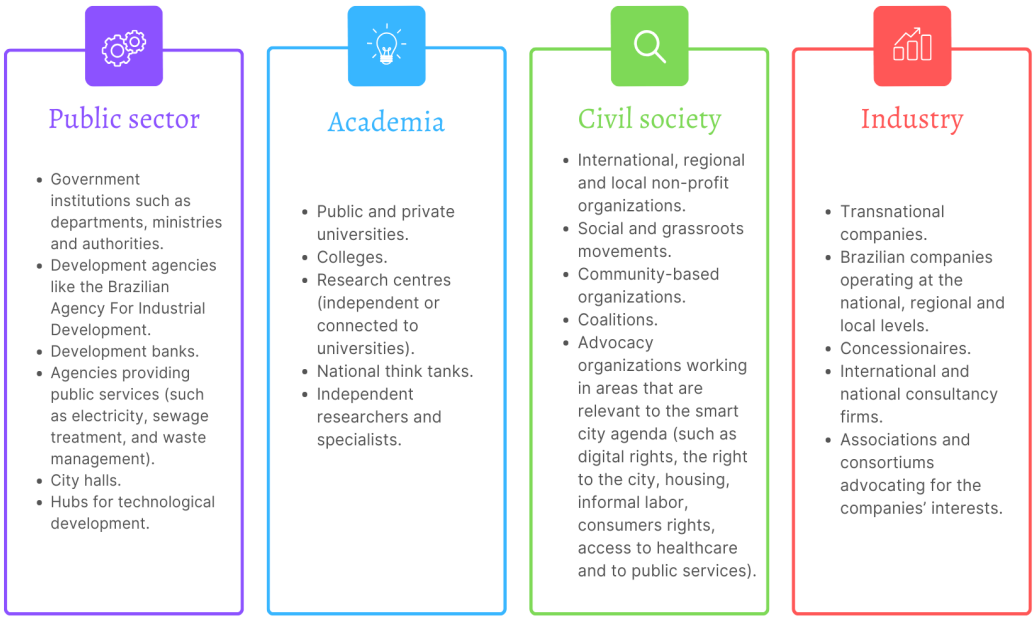

Figure 1: Main categories of stakeholders in the Brazilian smart city ecosystem.
Source: Created by the authors based on fieldwork material.

The Brazilian smart city ecosystem portrays, expectedly, large influence from industry and corporate power operating in various areas, such as transnational companies known for their participation

and investment in products marketed as "smart city" (Huawei, Cisco, IBM, and Engie).[4] It also includes Brazilian companies operating at the national, regional, and local levels, as well as concessionaires and national and international consultancy firms working with or for local governments to provide expertise, products, and services branded as "smart." The public sector has major players as sponsors and consumers of technology, especially through development agencies and banks that facilitate closed-door negotiations with companies. We also want to highlight the role of academic institutions, specialists, and CSOs in shaping the debate, even though they are often excluded from certain privileged spaces of marketing and lobbying.

These stakeholders interact with each other in different spheres at the local, regional, and transnational levels. For this article, we consider the expos and forums dedicated to advertising smart city products and services as spaces where skewed power dynamics between the ecosystem's categories intersect and are intensified. In these selective spaces of restricted admission, the companies not only showcase their technological solutions for urban territories but also allow the market to self-regulate (Stockmar, 2016) and create specific, artificial demands (Reia & Cruz, 2023).

Smart-Washing at Play: Expos, Forums, and VIP Rooms

We attended three expos in the South and Southeast regions: Smart City Expo Curitiba (for two consecutive years, 2018 and 2019), Smart City Business America Congress & Expo (2018, in São Paulo), and Connected Smart Cities (2018, in São Paulo). Funding, institutional support, and sponsorship for these events are aspects that reveal details about the ecosystem and its networks of power, capital, and infrastructure. The main role of these expos goes beyond merely advancing the adoption of the smart city concept; it also exerts pressure on the public sector in Brazilian municipalities to adopt the smartness agenda. Often, mayors and public servants attend the fairs and get in touch with the latest technological "solutions" the smart city market offers. At the Smart City Expo Curitiba, for instance, the mayor delivered the opening speech in the presence of local and regional media, and state-level policies for tax incentives for electric vehicles were signed publicly (Cerveira, 2019). It is worth mentioning that this Expo also featured "VIP Lounges" where mayors and companies could negotiate freely but access to these spaces was restricted to researchers. At the Connected Smart Cities event, mayors (or their representatives) received awards based on the smart city ranking created by the organizers.

The expos share many similarities. They all benefit from financial and institutional support from private companies, transnational and local consultancies, and federal, state, and municipal government agencies. All three expos had designated areas—sometimes open to the public, sometimes closed to those who paid for admission—with booths for displaying products and services, combined with paid-only areas that showcased panels and networking opportunities between state and non-state actors. Some of these events also included tours to data centers and operation centers in their programs, such as a short visit to the Instituto das Cidades Inteligentes (ICI) in Curitiba.

[4] All the aforementioned companies were sponsors of the expos we have studied.

As expected, these smart city expos have become consolidated in Brazil as spaces for promoting business focused on datafication, primarily driven by private interests and disconnected from historical debates on the right to the city (Lefebvre, 1968; Maricato, 1985) and digital rights. The spaces catalyzed by the organizers facilitate transactions between governments and companies, often based on a techno-solutionist perspective (Morozov, 2013) of innovation, progress, and efficiency in urban territories. Furthermore, as we will see below, these expos also open doors for the private sector to operate as policy makers and lawmakers through private consultancy firms. In an interview with Rodrigo Firmino, it was discussed how this approach favors the "intense privatization" of public spaces and services, often based on the idea of commercialized efficiency that is detached from social justice or the right to the city.

The existence of spaces reserved for transactions between corporations and public authorities, with limited oversight from society, circumscribes decision making for smart cities to a context without real opportunities for civic engagement (Brandusescu & Reia, 2022), bottom-up approaches, or even monitoring of priorities or conditions in certain tech investments. In an interview for the project, Henrique Frota, from Instituto Pólis—one of the most established organizations in the dispute for the right to the city in Brazil—said participation in these events is not a possibility

> [. . .] for several reasons. One of them is that our demand already absorbs us a lot. And second, because we have this understanding that these are shielded events—[. . .] they work like big business fairs. CSOs are never invited to sit at the table.

The lack of participation of historically marginalized groups—such as members of the LGBTQIA+ community, Black people, and Indigenous communities—or even the acknowledgment of how these groups are affected by smart technologies operates according to the market logic that guides these expos and their outcomes.

Policy and Legal Context as Smart-Washing Enablers

The national legal and policy context helps us make sense of the frameworks that affect digital infrastructures, enabling the smart city agenda in Brazil. Over the years, we have mapped projects that combine buzzwords to convince municipalities that they are offering a shortcut to efficiency, which may lead to greater privatization of infrastructures through datafication. In terms of laws and policies relevant to deploying data-centric initiatives in urban territories, we highlight three primary concerns: Public-Private Partnerships (PPPs), lobby regulation, and privacy and data protection.

The Brazilian Law of Public-Private Partnerships (Federal Law 11,079 from 2004) has been one of the private sector's top priorities for smart cities in the country. Methods for facilitating the procurement of smart products and services through PPPs have been widely discussed at expos, exhibitions, publications, and workshops (Aune, 2017).

While conducting the empirical research component, we identified several actors presenting PPPs as the main legal instrument to develop and increase the efficiency of Brazilian cities. PPPs create a direct channel of transactions between the private and public sectors, often without public oversight, generating

top-down public policies (Dunn-Cavelty & Suter, 2009; Leigland, 2018) that might facilitate the acquisition and deployment of technological "solutions" that not only ignore the priorities of local communities but can also worsen historical inequalities (Gaffney & Robertson, 2018). Henrique Frota also said he believes that the government's emphasis on PPPs has been

> [. . .] disastrous, because the logic of the PPP is a logic of profitability. And public policy cannot be guided by this logic. People usually sell PPP as a legal-financial design that will facilitate investments and relieve the public budgets. But this legal-financial design also determines the profile of the people who will be served.

According to him, these partnerships do not necessarily lead to a considerable improvement in the quality of life of the people affected.

Another mechanism that exists in a regulatory gray zone is lobbying. Political lobbying is an unregulated activity in Brazil, allowing access to legislative representatives and eventual parliamentary fronts (such as the Parliamentary Front for the Development of Smart Cities, created in March 2022) that eventually become bridges between Congress and non-state actors. Many Fronts, such as the aforementioned one, are created with significant support from companies (Boldrini, 2019; Dias, 2021). This situation offers the private sector—which has more financial resources than CSOs—an opportunity to influence laws, regulations, and public debate. According to Simão (2019), Brazil should properly regulate lobbying to oversee how expenses (from dinners to research) are paid with money from companies that have much to benefit from what parliamentarians in these Fronts decide. Smart cities lack specific regulations, independent authorities, and other control mechanisms to curb the rapid and simplistic approach of technosolutions.

Besides PPPs and lobbying, one of the main regulatory frameworks that impacts the smart city agenda concerns privacy and data protection. After almost a decade of multistakeholder legislative debates, Brazil finally had its General Data Protection Law ("Lei Geral de Proteção de Dados" [LGPD]) enacted in 2018, later coming into force in 2020. Despite lagging behind European countries and some Latin American neighbors, this regulatory instrument represented a milestone for the privacy and data protection culture in the country (Mendes & Doneda, 2020).

The law created a series of new obligations for the public sector concerning the processing of personal data. Unfortunately, years after it came into force, thousands of municipalities have not yet taken the first steps to comply with the latest legislation (NIC.br, 2021). This is worrying because municipal governments are usually responsible for formulating and implementing public policies related to smart cities. According to the legal analysis conducted, certain projects around the country being advertised as "smart" are blatantly illegal, with municipalities not complying with basic obligations, such as failing to carry out Data Protection Impact Assessments or to adopt transparency measures about data breaches. Cities of varying sizes across Brazil are facing a shared concern: a notable absence of robust data governance frameworks and safe DPI.

As cities across the country adopt AI-driven surveillance systems in public spaces, these technologies are often marketed as convenient solutions that enhance public safety. However, they also pose significant risks, such as unauthorized data collection and privacy violations. Without transparency and accountability, these data governance practices can restrict residents' ability to freely enjoy public spaces, trust public institutions, protest, and participate fully in their communities, ultimately undermining their right to the city (Conectas Direitos Humanos, 2023).

Although Brazilian cities strive to position themselves as technologically advanced and data-driven, the reality of inadequate digital foundations and an alarming lack of cybersecurity preparedness paints a starkly different picture. Data show that more than 300 municipalities have been attacked in three years, including data breaches, ransomwares, and DDoS attacks (Campagnucci, 2022). In this sense, local administrations need to be wary of opportunistic consultancies that promise to "comply" with the LGPD without genuinely creating a lasting framework that effectively safeguards residents' data.

Based on these findings, we further analyze two related key topics: industry-led policymaking and the response to privatizing digital infrastructures. These matters are intrinsically linked to the strengthening of cities' digital assets and raise questions about the reach and influence of the private sector.

Industry-Led Policy and the Response to the Privatization of Digital Infrastructures

In a quest to become more efficient, a growing number of municipalities have partnered with private consultancy firms to write laws and policies intended to enhance their smartness. We identified that, in an attempt to digitize and optimize public services, combined with the pressure to be ranked among the smartest cities in the country, Brazilian municipalities are increasingly adopting industry-led "master plans" for innovation and smart cities. Primarily serving as smart-washing of urban services, most of these plans are disconnected from ongoing debates on data ethics and responsibility (Bietti, 2020; Taylor, 2017) about the importance of transparency (Ananny & Crawford, 2018), accountability (Dannin, 2005), and reparation (Davis, Williams, & Yang, 2021) in the deployment of new technologies in urban spaces. These decisions lead to the privatization of public digital infrastructures.

These so-called "master plans" are usually conceived via procurement, choosing the consulting firm responsible for its elaboration—or, in some cases, via PPPs without any competition or oversight by authorities. After the contract is signed, these partnerships between consultancy firms and local governments typically result in city ordinances that establish rules permitting the private sector to deploy big data projects and exploit the data produced in the city for a certain period. In PPPs, the company pays the government a certain amount of money to operate these digital services (e-gov apps, facial recognition cameras, and public WiFi hotspots) for decades. Moreover, serving as the main reference, the guidelines provided in the "smart city master plans" facilitate the implementation of other policies. Here, we analyzed three initiatives in different regions of the country.

SPin (standing for "Soluções Públicas Inteligentes"), a private consultancy firm in Brazil, has been a prominent player in offering "master plans" and organizing the aforementioned expos. They were involved in the development of the "Master Plan of Smart City Technologies" (Juazeiro do Norte, 2017) in partnership

with the city of Juazeiro do Norte, Ceará—the first city in the country to purchase such a framework. This plan, initiated in 2018, had a significant financial commitment of BRL 1,200,000.00 and several issues related to protecting fundamental rights. Notably, it lacks public consultation and ignores privacy and data protection concerns while emphasizing terms like "big data" and "Internet of Things." It also neglects concepts tied to the right to the city. Despite its approval nearly five years ago, the planned actions remain unexecuted, attributed to administrative obstacles, the COVID-19 pandemic, and changes in local government leadership (Rodrigues, 2021).

Salvador, another city in Northeast Brazil, also sought private consultancy services for a strategic plan aimed at transforming the city into a smart city. The contract included various tasks, such as assessing current ICT status, identifying technology needs, formulating a smart city vision, and establishing a governance structure. The Salvador Smart City Consortium was awarded BRL 4,500,000.00 for this project (Salvador, 2022), which was launched in May 2022.

Vitória, the capital of the state of Espírito Santo in Southeast Brazil, also embraced the concept of smart cities by creating its "Master Plan for Technologies of Smart Cities." The city hired the Smart City Business America Institute to develop this plan without going through a procurement process, taking advantage of a legal exception. This plan, similar to those developed by SPin, was completed and made public in 2020 (Vitória, 2020).

According to information retrieved from the public database protected under Decree 8.777/2016 (which establishes guidelines for open data in the federal government), SPIn, the Salvador Smart City Consortium and the Smart City Business America Institute have shareholders in common. Thus, it is possible to identify an orchestrated action of private agents that ignores the Brazilian history of participatory policymaking and democratic innovation. These firms are building a lucrative business by guiding municipalities in key infrastructure decisions, such as public security, digitization of public services, mobility, lighting, and waste collection, without engaging with broader civil society and academia stakeholders. Additionally, in these projects, personal data is often seen as a source of revenue for the firms. The legal non-compliance with major privacy frameworks and the lack of transparency exemplify how the smart-washing process has increasingly driven Brazilian municipalities to privatize digital infrastructures through datafication.

Navigating the Privatization of DPIs

The penetration of corporate power in local governments in Brazil is met with a response from CSOs, especially those working in the digital rights space and organizing themselves toward regional and transnational collaborative networks—often facilitated by philanthropic interactions with companies and foundations. Brazilian civil society has been engaged for decades in public policy debates that address emerging technologies and their impact on residents' digital rights (Arnaudo, 2017; Solagna, 2020). Usually operating within networks, this community has also advocated for democratic and multi-stakeholder Internet governance mechanisms (Israel, 2019). Such efforts have resulted in a series of rights, such as the creation and strengthening of institutions—e.g., the Brazilian Internet Steering Committee ("Comitê Gestor da Internet no Brasil" [CGI.br])—and the consolidation of digital rights in

regulatory matters, such as those provided by the Brazilian Civil Rights Framework for the Internet and the Brazilian General Data Protection Law.

Investigative journalism has also played a pivotal role in shedding light on some shortcomings and hidden agendas behind projects labeled as "smart." This endeavor has manifested as a symbiotic relationship between investigative journalists and CSOs. See, for example, the aforementioned series "*Quem paga a conta?*" by The Intercept Brasil and the 13th edition of scholarships for investigative journalists reporting on inequalities of connectivity in Brazil, a partnership between Agência Pública and Idec in 2021. The visibility of exposés published by journalists helps to bring issues inherent in these "smart" initiatives to the public debate in more accessible language. CSOs have proactively engaged with journalists, providing them with leads on problematic cases and actively funding scholarships for investigative journalists. This reciprocal partnership has enabled efforts to unveil problems and provide a better-informed discussion related to the privatization of digital infrastructures since "[. . .] these groups perform a vital role in every democratic society to hold the government accountable for its activities and inform different audiences about issues of public interest" (Vera-Quiroz, 2023, p. 51).

However, in addition to working toward civic engagement and a positive agenda, the network of organizations often needs to mobilize to respond to a political scenario of intense privatization. By working together, multiple organizations can leverage resources, skills, and knowledge. The increasing ubiquity of data-driven initiatives in Brazilian urban areas, notably facial recognition technologies, is met with resistance campaigns (Access Now, 2021a) and, efforts that challenge public investment in "technosolutionist" projects. The ubiquity has also compelled digital rights CSOs, which traditionally focused on areas like platform regulation or access to knowledge, to deepen their advocacy and collaborate with groups addressing issues such as racial discrimination and police brutality. Despite the long road ahead to making digital rights spaces more inclusive, this shift has moved advocacy for human rights in the digital context beyond a predominantly White Latin American niche to engage with other societal impacts of technology. The main strategies for civic engagement being used to leverage their resources and networks are, commonly, the establishment of regional coalitions (such as Coalizão Direitos na Rede [CDR], funded by the Ford Foundation, and Al Sur), campaigns, strategic litigation,[5] and legislative efforts with elected officials.

Although these networked efforts led by CSOs offer oversight and accountability to some extent, Brazil lacks mechanisms to prevent private funding from completely overriding public interest in law and policymaking. Companies benefit from loopholes and PPPs to embed their interests in municipal law, threatening democratic processes. This situation is worsened by the fact that some digital rights CSOs have long-term "philanthropic interactions" (Goldenfein & Mann, 2022) with big tech companies and private foundations influencing both the narrative and the focus of digital rights advocacy. Another effect of this financial dependency is that digital rights advocacy has become a specialization that creates a niche along with the expansion of smart technologies and smart-washing policies.

[5] Such as the class actions against surveillance technologies in public spaces, in which legal action is taken against governments and tech providers (Cruz, 2022; Global Freedom of expression, 2021).

Various stakeholders recognize the current shortcomings in financial sustainability. Given these complexities, proper independent funding for community-based and CSOs, as well as for academia, could potentially benefit the development of a critical understanding of how tech policy is intertwined with money in cities beyond technology acquisition. Additionally, having spaces for exchange between stakeholders, creating opportunities for capacity building within government, and expanding the reach of critical discussions on tech policy to wider audiences could also be beneficial.

Conclusion

Brazil's experience provides relevant lessons and might serve as a cautionary tale for scholars and practitioners. As a key example in the technology policy community, Brazil's journey helps us critically reflect on the future of our digital infrastructures. We are currently immersed in a process of privatization disguised as the "smartification" of urban spaces, which, in reality, unfolds as smart-washing urban services and digital infrastructures. In Brazil, the corporate-led smart city agenda has been implemented at the expense of broader social participation and cooptation of mechanisms, such as public consultations or a lack of proper measurement of participation levels (Birhane et al., 2022). As AI systems advance into different realms of society, the potential to further spread the harms promoted by this smart-washing process—primarily privacy violations and the privatization of infrastructures and services—requires new approaches to critical smart city studies.

Private companies and consultancy firms have been actively pursuing local governments and elected officials in their quest to advance the smart city agenda. In light of these dynamics, there is a need for enhanced data and digital literacy, as well as capacity-building efforts aimed at equipping local governments and civil servants with the skills and knowledge necessary to navigate the complex landscape of urban smartification. According to Luciana Pascarelli Santos, in charge of the Geoinfo Program of the Municipal Secretariat of Urbanism and Licensing of São Paulo at the time of our fieldwork, popular participation is fundamental because "a public administration is not the mayor defining what to do from that piece of information, but it is the population bringing solutions."

Additionally, independent funding that strengthens civil society, investigative journalism, and academia is an important step toward the democratization of urban technologies, as well as opportunities to share knowledge and strategies among stakeholders and across fields. Since public oversight and scrutiny play a critical role in addressing the challenges posed by the smart-washing process, meaningful conversations on surveillance, privacy, the right to the city, and corruption that are accessible to broad audiences are also helpful in containing the damage of smart-washing. Improving communication channels with the government, combating unregulated private lobbying, and creating continuous mechanisms for civic engagement with digital infrastructures are good starting points in this process. This work highlights the need to think beyond the appeal of quick technological solutions and build long-lasting mechanisms to include historically marginalized voices in the decision making of our cities, centered on digital rights, data protection, and the right to a (non-smart) city.

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