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CRITICAL INTERNET GOVERNANCE:

A NECESSARY
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PUBLICATION DETAILS

Editorial Team

Pietra Milani Bizerril
Fernanda R. Rosa

Contributing Authors

Beth Veloso
Elena Wesley
Fernanda R. Rosa
Hemanuel Veras
Jamila Venturini
Jess Reia
João Eduardo Aparecido Luisi Vieira
Lorena Regattieri
Lorena Vilarins
Maria Vitoria Pereira de Jesus
Martina Di Tullio
Melquiades (Kiado) Cruz Miguel
Monique Figueira
Nahema Falleiros
Pedro Burity
Rafael Evangelista
Rafael Grohmann
Rodolfo da Silva Avelino
Rory Sharp

Peer Review

Carolina Batista Israel
Diego Vicentin
Dmitry Kuznetsov
Fernanda R. Rosa
Fieke Jansen

Kimberly Anastácio
Maxigas
Nahema Falleiros
Rodolfo Avelino

Translation

Vanessa Stelzer

Image Editing

Felipe Carpes Neves

Workshop participants

Bianca Galvão Marques
Carolina Batista Israel
Corinne Cath
Diego Vicentin
Dmitry Kuznetsov
Elena Wesley
Fernanda Rosa
Fieke Jansen
Hemanuel Veras
Jamila Venturini
Jess Reia
Kiado Cruz
Lori Regattieri
Maria Vitoria Pereira de Jesus
Martina Di Tullio
Michaela Shapiro
Monique Figueira
Nahema Faleiros
Niels ten Oever
Pedro Borges
Rafael Evangelista

Rafael Grohmann
Rahul Mukherjee
Rodolfo Silva Avelino
Rory Sharp

Facilitation

Priscila Gonsales

“Angels”

Ana Clara Bernardes Guersoni
Beatriz Gonçalves
Lorena Pitta
Luiza Marcolongo
Nathan Hofmann
Maryna Soares

Special Contributions

Maria Chantal
Favela Orgânica
Silver Visual Thinking

Organization

REDE
critical infrastructure lab

Institutional Support

CGI.br
Instituto de Desenvolvimento e Gestão
Museu do Amanhã

Editorial Design

Mariana V. de Andrade

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CRITICAL INTERNET GOVERNANCE: REINFORCING THE CALL

Hemanuel Veras
Maria Vitoria Pereira de Jesus
Fernanda R. Rosa

The increasing dominance of corporate conglomerates operating in the technology sector, the climate crisis caused by global warming, the upheavals triggered by a politically organized far right around the world, and the geopolitics of control over critical resources, infrastructure, and data circulating on the Internet are some of the factors that shape the context of our presence and experiences in today's Internet.

As a result, researchers worldwide have begun to question whether the field of study and political action known as Internet Governance (IG), with its debates on the network's functioning, the growing concentration of power, and how we can collectively build a fairer, more accessible, and more transparent Internet, is capable of addressing these challenges. Clearly, these are not entirely new challenges, but as they appear in circles extending beyond those that self-identify as IG, they have taken on specific nuances and characteristics that influence critical and counter-hegemonic debates regarding sovereignty, infrastructure, identity, critical resources, and the environment in their relationship with the Internet.

Now in our second year of bringing this topic to the table, we at the Internet Governance Research Network (REDE) and the critical infrastructure lab (cil) reiterate our call to establish a field of research that we have termed Critical Internet Governance (CIG). In 2025, we published the first dossier resulting from this debate in English, and we are now pleased to present the second dossier in the series, comprising a collection of 14 position papers in both English and Portuguese versions. These papers were initially discussed during the 2nd Symposium on Critical Internet Governance, held on October 14, 2025, at the Museum of Tomorrow in Rio de Janeiro. The event was organized by REDE and cil as a satellite event to the annual meeting of the Association of Internet Researchers (AoIR2025), a conference held in the Global South for the first time in 2025.

In this second edition, the Symposium on Critical Internet Governance brought together researchers and activists from Brazil, Europe, and Central and North America to discuss not only traditional Internet Governance topics, such as technical infrastructure, platformization, and digital rights, but also emerging issues like critical studies of Artificial Intelligence (AI), disputes surrounding data center construction, and the struggle for technological and digital sovereignty. The meeting was organized as a one-day workshop and structured around the position papers submitted prior to the event. Among various activities, the authors were able to share comments and impressions, as well as receive recommendations and written reviews after the event to help shape this collection, provided they were interested and available to contribute to the publication (Figures 1 and 2).

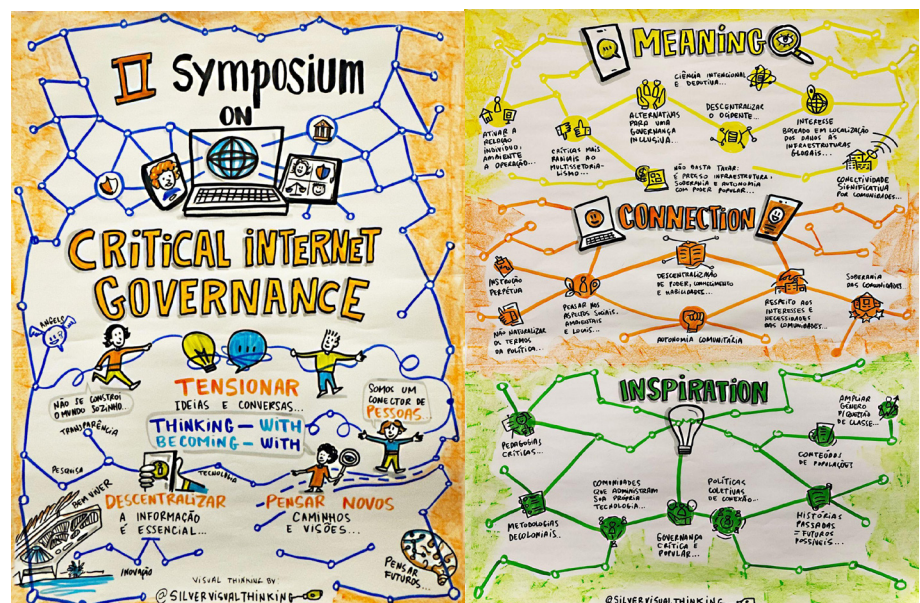
Figures 1 and 2: Participants during workshop activities



Credits: Hemanuel Veras (2025)

The workshop was moderated in Portuguese by Priscila Gonsales, who holds a doctorate in applied linguistics with a focus on languages and technologies and was responsible for introducing various interactive tools to drive the discussions. To facilitate the integration of participants who speak different languages, the event featured six “angel” volunteers, students or alumni from the Federal University of Rio de Janeiro and the Fluminense Federal University, who volunteered to provide simultaneous translation during the event. We also relied on hand-drawn illustrations of the ideas generated during the activities by the consulting firm Silver Visual Thinking, whose team listened attentively to the discussions and created real-time summary drawings that were presented to the participants at the end of the day (Figures 3 and 4).

Figures 3 and 4: Illustrations of the ideas generated during the workshop.



Credits: Silver Visual Thinking (2025)

The lunch period was specifically designed to connect participants to Rio de Janeiro, a territory inseparable from the history and lives of the people from the city's favelas, featuring catering services provided by Favela Orgânica, with Regina Tchelly and her team (Figure 5). After lunch, we held the “Decolonize Your Hips” session with Angolan instructor Maria Chantal (Figure 6), who invited participants to tie a scarf around their hips and explore circular movements, absent from their daily lives, with their own bodies. Chantal’s presentation, whom REDE organizers first met at one of the editions of the famous Criptofunk in Brazil, was followed by a talk by Professor Fernanda R. Rosa on the possibilities and requirements of a “decolonial communication ecology,” and by an afternoon of group activities.

Figures 5 and 6: Regina Tchelly, Maria Chantal, and participants.



Credits: Hemanuel Veras (2025)

The gathering was notable for the diversity of perspectives brought forward by the participants, including, among others, Indigenous knowledge and worldviews, race studies, the working-class perspective, ecological approaches, and decolonial and anticolonial thought. We believe that all of these perspectives are, and should be, fundamental to the establishment of a CIG, which is grounded not only in individual rights but also in the collective rights of specific communities and identities that are increasingly demanding a different use of the internet and denouncing its impacts, whether on their daily lives, their forms of organization, or their community experiences.

The articles comprising this dossier present only a fraction of the thematic diversity of the research and work that can, and certainly will, develop within the scope of a CIG, and they clearly demonstrate the potential of this field, which is open to being shaped by multiple voices and research approaches. The first article presents the talk given by Fernanda R. Rosa during the gathering, which links territory and its infrastructure, bodies, and digital codes with her own family history. In her research, these pillars are consistently interconnected, proposing the ethnography of code as a

methodology to achieve this end. Next, we organized the work thematically, according to four main axes.

In **Inflections in Internet Governance**, the works present criticisms of the current models of internet governance and the development of its infrastructures. Nahema Falleiros, Monique Figueira and Beth Veloso denounce multistakeholderism as yet another effective form of exercising power by the United States and big tech and defend popular sovereignty as a response to the problem. Rafael Evangelista uses a new concept, “Authoritarian Institutions Embedded in the Code,” to examine the lack of democratic channels for addressing the power of technology companies in society and to justify the need for a decolonial model of internet governance. Rory Sharp addresses the underlying theme of the space race and the privatization of space by proprietary non-terrestrial networks to draw attention to the urgency of the issue and the current lack of regulation. João Eduardo Aparecido Luisi Vieira and Rodolfo da Silva Avelino discuss the centrality of data centers as critical infrastructures that serve to extract and process data and that materialize a form of data colonialism rooted in inequalities and concentrations of various kinds, including those related to geography and power.

In **Sovereignty, Autonomy, and Territories**, the works reorient the debate to center community-level politics within discussions on technologies. Rafael Grohmann, Pedro Burity, and Lorena Vilarins clarify that digital sovereignty differs from the concept of autonomy in Latin America, and argue that popular and working-class power must be at the heart of discussions on digital technologies to realize their emancipatory potential. Melquiades (Kiado) Cruz Miguel discusses Indigenous data sovereignty through the In-Digital project, which involves Zapotec, Mixe, Triqui, and Mazatec communities in Oaxaca, Mexico, and a community-based model rooted in collective labor that stands in contrast to the capitalist industrial model of Silicon Valley. Martina Di Tullio addresses the experiences of indigenous and counter-hegemonic populations in Argentina, as well as projects that highlight contradictions and hope rooted in the country’s political history. Finally, Hemanuel Veras places the Brazilian Amazon in perspective, distancing it from the colonial view of the region as an exotic land, in order to discuss local inequalities regarding “meaningful connectivity” and the need to listen to local populations.

In **Governance and Human Rights**, space opens up for the contestation of values present in IG arenas. Jamila Venturini contextualizes the role of Latin American civil society in shaping IG, as well as the contributions deemed essential in the fields of human rights and social justice. Jess Reia draws on various data to highlight the multiple ways IG spaces fail to accommodate trans people and their rights, proposing immediate changes to the design of more inclusive policies.

The **Critical Artificial Intelligence** axis concludes this collection by highlighting the risks and possibilities already being experienced with the commercial advent of machine learning-based products labeled as AI. Elena Wesley recounts how data_labe, a civil society organization based in the Maré favela in Rio de Janeiro, has adopted these technologies, emphasizing the need for the participation of marginalized populations in AI governance. Lorena Regattieri uses the struggle of the Anacé people, and TikTok’s attempt to build a hyperscale data center on their lands in Ceará, Brazil, as

a case study to discuss AI as a capitalist input entangled in economic scenarios of assetization that disregard the meanings Indigenous peoples attribute to their territories. Finally, Maria Vitoria Pereira de Jesus addresses the risks of public security policies based on facial recognition technologies, the violence recorded against the Black population, and the consequent reinforcement of racism resulting from such use.

Taken as a whole, the articles in this collection propose a CIG that takes into account the unique characteristics of different territories and advocates for the inclusion of Black and Indigenous individuals and communities, as well as marginalized populations, in decision-making processes regarding the governance of the network and the technologies developed on its infrastructure. The spirit of this publication goes beyond critiquing current governance models and their colonial logic, and it embodies the diverse examples of community projects and public contestation presented as actionable pathways for constructing fairer public policies and collective, pluriversal futures.

CODE ETHNOGRAPHY: TOWARDS A DECOLONIAL COMMUNICATION ECOLOGY¹

Fernanda R. Rosa²

This short essay is a result of reflections incited by the II Symposium on Critical Internet Governance in Rio de Janeiro.³ During a 20-minute talk about decoloniality and internet governance, I started explaining my great difficulty in writing talks. Aline Ngrenhatabare Kaxiriana Lopes Kayapó, a friend and collaborator, has reminded me that we, Black and Indigenous women, come from oral traditions. While this is our strength, writing a text to support a talk feels an unnatural exercise for me. “Writing is a technology,” says Walter Ong (Ong, 2002), one that is recent in human history, and that we should feel free to use or not in academia, as Indigenous and quilombola⁴ (maroon) peoples teach us with their practices, including their current written literature and intended intercultural dialogues (Kayapó, 2025; Santos, 2019). This text is, thus, a result of an intentional and purposeful use of writing inspired by our discussions in the symposium and by my experience in the day after, co-organizing and participating in the Anticolonial Cuia (gourd bowl) that took place in Maré, a complex of 16 communities known as the largest favela (slum) in Rio.⁵

A memorable moment in the internet governance symposium was the class on decolonizing our hips, taught by the Angolan instructor Maria Chantal. She positioned us in a circle, asked us to wear a fabric around our hips, simulating a hip scarf, and started to move. There is no best way to realize the limits of our comfort zone than being delicately pushed outside of it. Except for one or two people who preferred not to participate in this after lunch activity, we were all moving, trying to mimic the impossible. Her message was clear: our minds and bodies are only artificially separated. In other words, to decolonize our minds requires not forgetting the need to decolonize our bodies. This has many significances, and I will come back to this later.

In another key moment, we learned with the critical infrastructure lab about the prototype of “organic data centers” in the Netherlands, run by the energy of bacteria grown in mold environments. The idea is that these bacteria are kept nurtured and cared for, so data are kept safe and continue

¹ I would like to thank the organizers and participants of the Automation Ecology Workshop at the University of Virginia for the generous feedback to an earlier version of this paper (<https://dtdlab.virginia.edu/project/automations-ecologies/>).

² Associate Professor of Science, Technology and Society, Virginia Tech.

³ The II Symposium on Critical Internet Governance was organized by the Research Network in Internet Governance, in Brazil, of which I am a member and co-founder, and the critical infrastructure lab, in the Netherlands. It happened on October 14 as a satellite event of the Association of Internet Researchers Conference 2025 (<https://redegovernanca.net.br/ii-simposio-sobre-governanca-critica-da-internet/>).

⁴ Quilombola is the denomination in Brazil for people who live in maroons, also known as quilombos.

⁵ The Anticolonial Cuia (gourd bowl) in Maré was co-organized by Casa Preta/ Redes da Maré, UniPeriferias, and the Abya Yala Pluriversity (<https://abyayalapluriversity.org/university/cuia-mare-rio-de-janeiro-brazil/>).

to be properly stored as an “utopian engineering” experiment (Jansen et al., 2026). While this is currently just a prototype, organic data centers open up the possibility of more local models of data storages and more involvement with these infrastructures. This alternative emerges in a moment of high dominance of big tech cloud services supported by hyperscale data centers, which are not only opaque and unattainable, but are also negatively affecting territories (Bridges, 2026; Data Center Watch, 2026; Ngata et al., 2025) and centralizing internet infrastructure in a dangerous way, as a recent technical failure of Amazon Web Services has shown when shutting down multiple global services at once (Cath & Le, 2025).

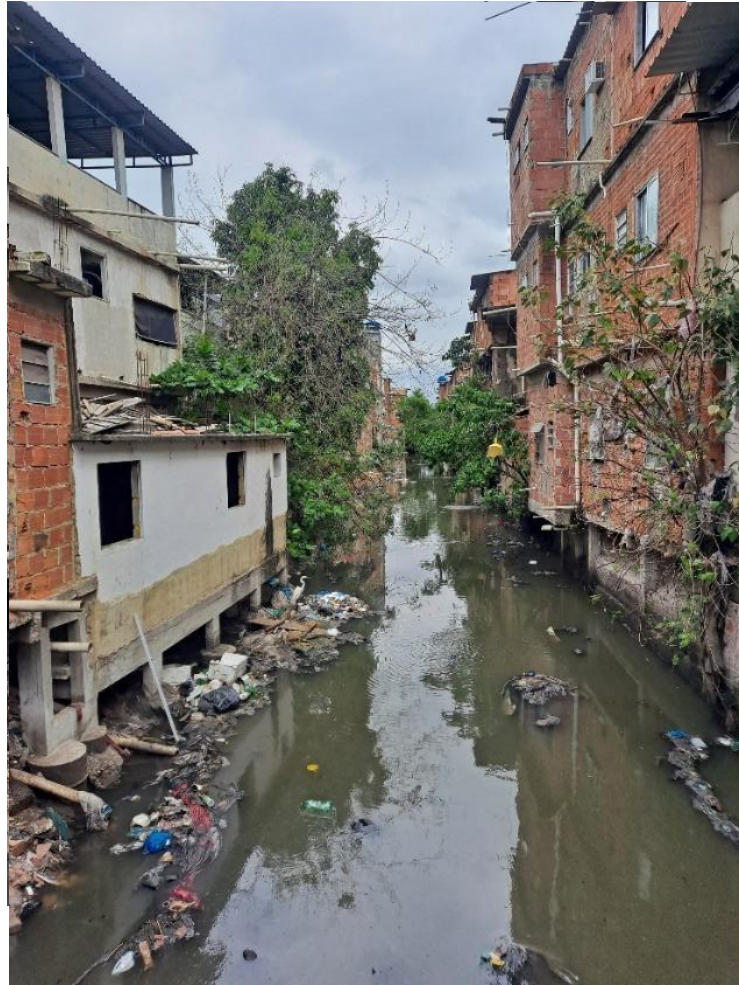
In view of these experiences, I asked myself how far we are from practicing ideas that dialogue with some of my dreams, in which we build non-anthropocentric governance processes that account for all sharing-beings (*seres compartilhantes*) (Santos, 2019), from trees to animals and code (Rosa, 2025b). Perhaps, we are not that far if the relationships formed around organic data centers are that of integration, in which bacteria are there not to just serve society data needs, but to be considered one of us, or even harder, for us to be considered one of them. At the same time, I cannot help but think how we can create dialogues between this prototype created in the Netherlands, also known as Holland, with the reality of Nova Holanda, or New Holland, the neighborhood where we spent a day in Maré after the symposium. To illustrate what I mean by that: in New Holland, stilt houses stand on top of channeled streams of water (Fig. 1), which, unlike the beautiful canals of Holland, are covered by pavement or trash that, with the storms, come to the surface to be converted into floods (Fig. 2). Vigorous water life is then interpreted as suffering, losses, forming open sewers, where bacteria are associated with diseases. Water streams in New Holland are not as pleasant as in Holland, but despite that, geese and other birds, animals and people insist in the hope of a convivial relationship still. This contrasting reality cannot be dismissed in any decolonizing effort.

Figure 1: Buildings, Trees, and Birds, Amsterdam, Netherlands, July 2024



Source: the author (2024).

Figure 2: Silt houses and the Bold Goose, Nova Holanda, October 2025



Source: the author (2025).

I am a diasporic body who talks about Maré's reality revisiting memories from my own childhood in a slum, the seemingly natural home for Brown, Black, and also Indigenous people who migrate to big cities in Brazil in search of work and a better life. Slums are Afro-Indigenous territories. As the symposium in Rio took place at the Museu do Amanhã (Museum of Tomorrow), during my talk, the first invitation to my colleagues was for them to reflect on the layers underlying that example of modern infrastructure built during contentious city renovations in preparation for the no less controversial 2014 World Cup and the 2016 Olympics. The museum is located in the area that hosted the largest port in the continent where Black slaved people arrived from Africa in the XVIII century. Looking through the glasses from our room, we were invited to gaze upon the Atlantic waters (Fig. 3) through which the ancestors of some of us likely arrived in Abya Yala (the Americas).

Figure 3: “Ancestors of the Passage” by Imna Arroyo, Puerto Rico, November 2023



Source: the author (2023).

A characteristic of colonialism is to rewrite our histories. People attuned to the modern architecture that marks the Museum of Tomorrow can easily connect that area with the Oculus space in the Financial District in New York City, where a similar infrastructure was built by the same architect. That was a connection that my mom and I made when visiting both sites some years ago. This is an example of the strong and pernicious effects of some of our modern technologies, and how easy it can be to reboot and then to forget where they come from. Ultimately, where we came from. As a colleague noted when reading this text, the lower layers of the museum infrastructure remind us of the multiple stacks that compose our systems, the computer systems.⁶ And as Chantal showed us in her hips class, the stacks that compose our body systems as well, urging to be reprogrammed. That is how I felt Chantal class in my body, an attempt to reprogram it, to cross layers of social norms about tilting, uncovering that skill as a collective capacity.

Imagining other opportunities of such reprogramming, Dona Flor and I could have talked about our ancestors in our visits to those spaces instead. She, a Black woman who worked her entire life as a housemaid and I, her light-skinned daughter who have learned with her the colonialism that we embody through violence we experienced together. In a sad intersection between Black and Indigenous lives, we could have talked about how, for many years, Indigenous peoples in Brazil self-identified as Brown (*pardo*) instead of Indigenous, similarly to how Brown is a classification that have deracialized light-skinned people (Lago et al., 2023). History shows that, on the one hand, the deracialization happened also as a result of the lack of official categories in the country's census (Ferro & Silva, 2024). On the other, this was an

⁶ I thank Dillon Mahmoudi for his comments during the Automation Ecology Workshop. For more on stacks see (Beltrán, 2023).

act of survival for some to protect their lives and the lives of their families. To self-identify as Indigenous could be a death sentence.⁷ As a result, it is not that uncommon that some Indigenous peoples were considered extinct because of the lack of self-identification. Xokó and Borum-kren peoples illustrate this tragic history, and for some years now have said “we are here, ‘alive and strong.’”⁸

Coming back to Holland and New Holland, they are a result of similar structural and historical events that express themselves not only in the bodies but also in the territories and in the technologies that emerge in those spaces. My proposal here is for us to experience history as “involvement,” and, thus, connection, in the sense of Antonio Bispo dos Santos (Santos, 2019). To historicize a territory is a way for us to counter the effects of vicious western practices that may erase the past and portray territories as valuable only if they can support the “development” imaginary. For instance, the harbor area where now the Museum of Tomorrow resides was, for years an abandoned part of Rio de Janeiro until the global sports events ignited investments of modernization. For Santos (2019), “development” is another way to disconnect from the territory, while “involvement” is a counter colonial way to oppose the violence that top-down development practices can spread locally.

To nurture a critical internet governance field, one that also awakens our liberatory thoughts (Rosa, 2025b), we need to account for the history of the territories where technologies have been shaped. We need to dissociate modern discourses related to technology and the digital from what these technologies constitute before such narratives. For instance, what are the values that precede the landing of new code and infrastructure in a given territory and the specificities of the body-territories (Ricaurte Quijano, 2024) that are in these spaces that help counterpoint pretentious ideas of technology universality? As we work towards this purpose, a contribution I seek to make is a methodological one.

In 2019, I designed a method that I call code ethnography as a way to examine code underlying digital infrastructures (Rosa, 2022). In this approach, code is a governance actor, or another sharing-being, to be taken into consideration, one whose affordances need to be studied in context as any other being, and whose assemblage should be examined without disregarding the materiality that it involves, or its infrastructure. In this way, similarly to Maria Chantal’s and feminist understandings of the connection between mind and body, I propose that code and infrastructure are inseparable and need to be studied together. This understanding opposes discourses of code intangibility and prevents us to lose the connection with the territory, its history, and ultimately the bodies that are part of it.

This proposition has some consequences. One is that we need to account for the beings that are part of the territory in our theorizations about

⁷ It is estimated that only during Brazil’s most recent dictatorship, between 1960 and 1985, at least 8,300 Indigenous people were killed (Folha de S.Paulo, 2023). And until nowadays, Black and Brown bodies are the main target of police violence (Cardoso, 2024), while Indigenous peoples may not appear in these statistics due to the country’s eugenic history.

⁸ I have learned about Xokó and Borum-kren peoples history with Joseane Xokó and Bárbara Borum-kren in their teachings at the Abya Yala Pluriversity.

code and infrastructure. This requires not only the recognition of other ontologies, epistemologies and the history that we will learn about with people in our involvement, but also requires a less anthropocentric view of technologies. For instance, in examining how an internet protocol, the Border Gateway Protocol (BGP), plays a role in Tseltal and Zapoteco territories. Not only we understand how BGP renders their internet networks invisible, but we are also able to acknowledge the work of Tseltal and Zapoteco peoples as internet codesigners and how their territories also play a role in internet governance, with trees and rooftops shaping the architecture of their networks and the devices that they can use (Rosa, 2023, 2025a).

In imagining a decolonial communication ecology that critical internet governance can study, I envision the materialization of a pluriverse of ontologies and epistemologies where our contradictions are not concealed but serve as a support to push us further. Academia, and specifically critical internet governance, communication, and science and technology studies, do not need to be protocular. They can talk to who we are, to our ancestries, and make emerge other ways of reprogramming and looking at our multiple (technological) realities. This is a good reason to keep us writing.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, genderqueer people, Black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. In this paper, citations are distributed as follows: female names (9; 0.50%), male names (5; 28%), female-male names (2; 11%), and institutional sources (2; 11%).

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BRINGING SOVEREIGNTY AND AUTONOMY TOGETHER IN INTERNET GOVERNANCE DEBATES

Rafael Grohmann¹

Pedro Burity²

Lorena Vilarins³

The notion of digital sovereignty has become increasingly central to debates on internet governance, both in policy circles and academic research. Yet, despite its ubiquity, digital sovereignty remains a concept in dispute (Couture; Toupin 2019). It is mobilized by different actors with contradictory meanings: from governments seeking to regulate infrastructures and corporations promoting their own commercial visions of “local control,” (Barbosa; Grohmann 2024) to grassroots collectives attempting to reclaim technology for emancipatory purposes. This plurality reflects not only semantic ambiguity but also competing political projects. As Couture and Toupin (2019) showed, sovereignty in the digital field is far from univocal and must be understood as a contested terrain. More recently, Big Tech corporations have co-opted the discourse of sovereignty itself, offering what Barbosa and Grohmann (2024) describe as “sovereignty-as-a-service,” where supposedly sovereign infrastructures remain owned and operated by global corporations. In this sense, the concept risks being hollowed out and reduced to a technical marker of server location rather than a substantive expression of power.

This position paper argues, drawing on Latin American debates, that digital sovereignty must be understood from below, in consonance with popular power and its reappropriation by communities, social movements, and workers. At the same time, it stresses the importance of not collapsing every emancipatory practice into the language of sovereignty. Distinct traditions, such as popular sovereignty and autonomy, carry complementary yet different worldviews that must be recognized. Our central claim is that thinking sovereignty together with autonomy provides a more complex and situated framework for internet governance debates, especially when grounded in Latin American experiences of struggle and theorization. This means thinking and practicing together with different frameworks.

It is in this context that Latin American contributions become particularly relevant. Across the region, social movements, unions, and community organizations have articulated alternative meanings of digital sovereignty that emphasize bottom-up control and popular power. The Homeless Workers’ Movement in Brazil, for instance, has developed the notion of popular digital sovereignty, defined as the collective capacity of marginalized communities to shape and control technologies for their struggles (Núcleo

¹ University of Toronto, Canada

² University of Brasilia, Brazil

³ University of Brasilia, Brazil

de Tecnologia do MTST, 2023). This interpretation is in line with broader traditions of popular sovereignty in Latin America, where “the popular” carries an emancipatory connotation linked to working-class agency rather than a pejorative label (Gago, 2017; Martin-Barbero, 1993). In these contexts, sovereignty is not a monopoly of the state but a terrain of contestation and reappropriation “from below”, such as communities as workers.

The notion of popular sovereignty has long been central to political thought, yet its meanings have varied across contexts and traditions. In Latin America, popular sovereignty has been redefined through struggles against dependency, acquiring an emancipatory connotation linked to working-class agency rather than a pejorative sense of “the masses.” Drawing on both classical and Marxist traditions, Latin American social movements have reframed sovereignty as a terrain of contestation and constituent power. In Europe, thinkers such as Antonio Negri (1999) have emphasized the creative and insurgent dimensions of constituent power, while Rosa Luxemburg (1940) critiqued the dangers of reducing sovereignty to party or state authority, insisting on its grounding in collective struggles.

In the digital field, this trajectory has given rise to the concept of popular digital sovereignty, which stresses the capacity of communities and workers to reappropriate technology for emancipatory ends. Unlike state-centric versions of digital sovereignty that focus on national clouds or regulatory frameworks, popular digital sovereignty is rooted in collective self-determination and accountability to communities. This interpretation connects with broader traditions of food, energy, and resource sovereignty in Latin America (Penido; Carolino 2020), reframing the digital as another field where collective rights and bottom-up control must be secured.

For the Tech Sector of the Homeless Workers’ Movement in Brazil (MTST 2023), popular digital sovereignty entails reclaiming technologies so that they serve collective struggles, whether with, against, or beyond the state. In practice, this concept is advanced by MTST as synonymous with popular power, closely tied to Leninist understandings of working-class collective strength where technology functions as a tool for economic survival and class organization.

A prominent material example of this framework is the movement’s “Hire Those Who Struggle” (*Contrate Quem Luta*) project. Developed to combat the precarious labor conditions forced upon urban peripheries, this software functions as a grassroots alternative to commercial job platforms. By directly connecting unemployed or underemployed movement members with service-seekers for construction, cleaning, and technical repairs, the tool effectively bypasses exploitative digital corporate intermediaries. It ensures that the value generated remains within the community, demonstrating how technology can be subverted and controlled from below to solve concrete, everyday material needs. This shows how popular sovereignty retains a strong structural and macro orientation, but one grounded in popular agency.

Autonomy, while sometimes conflated with sovereignty, carries distinct theoretical genealogies. Autonomist Marxism defined it as the refusal of capital and state authority, privileging workers’ capacity for independent self-organization (Tronti 1966; Wright, 2017). Rosa Luxemburg (1976) similarly linked autonomy to internationalist working-class struggle, distanc-

ing it from nationalist self-determination. In this sense, autonomy emphasizes prefiguration: collective practices that anticipate alternative futures beyond capitalist and statist mediation. Feminist approaches expand the notion of autonomy by embedding it in relational and collective practices. Rather than seeing autonomy as separation, feminist theorists emphasize its grounding in care, mutual aid, and non-hierarchical infrastructures. Toupin and Haché (2015) describe feminist autonomous infrastructures as grassroots technological projects that embody values of inclusivity, consent, and solidarity, offering both material and symbolic alternatives to patriarchal and capitalist systems. Autonomy here is inseparable from the politics of everyday life, embedding technology in practices of social reproduction and collective well-being.

This tradition is vividly enacted in Brazil by MariaLab, a self-managed, non-profit collective operating at the intersection of gender, race, social class, and technology. Aligning itself with anarchist feminism, MariaLab views autonomy as an ongoing, relational process forged through shared, negotiated, and consensual experiences.

In practice, MariaLab rejects patriarchal, capitalist, and state-controlled digital systems by developing and maintaining feminist servers (such as *Vedetas*) and strictly utilizing free and open-source software that is auditable and modifiable. Their commitment to autonomy extends deeply into their internal governance, which utilizes sociocracy: a self-management model structured around circles, transparency, and consent-based decision-making rather than majority rule. Furthermore, they ground autonomy in community-based infrastructure and digital care initiatives like *Maria d'Ajuda* and *Fuxico*, which provide digital security support through a feminist methodology of welcoming, active listening, and collective responsibility. Through these actions, MariaLab treats autonomy not as an abstract ideal, but as a situated practice rooted in mutual aid and the reduction of power asymmetries.

Decolonial and Indigenous perspectives further radicalize autonomy by situating it in territorial and ancestral practices. For Escobar (2018), autonomy is “re-existence”: the capacity of communities to define their own futures based on relational and pluriversal ways of life. Autonomy is not absolute independence but a continuous negotiation of interdependence, grounded in land, territory, and community decision-making. Bravo (2017) argues that autonomy offers a necessary decolonial lens to reframe technological sovereignty, shifting the focus from “supreme authority” to collective forms of living otherwise. Indigenous autonomous networks and Zapatista traditions exemplify this orientation, emphasizing relational power rather than hierarchical control. Taken together, these traditions highlight autonomy’s skepticism toward the state and its grounding in micro- and meso-level practices. Whereas popular sovereignty connects grassroots struggles to broader macro frameworks, autonomy insists on local, relational, and everyday forms of power. This difference in the role of the state and in the scale of agency is central to distinguishing the two traditions.

Both popular sovereignty and autonomy reclaim digital governance and policies from below, but they do so with different orientations. Popular sovereignty often engages with the state, whether to reclaim it, re-found it, or confront it. Its horizon is macro and structural, emphasizing infra-

structural control and systemic critique. Autonomy, by contrast, tends to distrust or reject the state, grounding itself in community-based, relational, and territorial practices that scale horizontally rather than hierarchically. Its horizon is micro and meso, privileging everyday relations of care and mutual aid.

Despite these differences, they converge in their opposition to capitalist frameworks of technology and in their struggle against inequalities, insisting that digital infrastructures must serve collective needs. The complementarity between them lies precisely in the tension: sovereignty addresses dependency at the macro level, while autonomy anchors practices at the micro and meso levels. Both, however, root their practices in territory. Technologies are always tied to specific places and communities. A richer framework for internet governance requires holding the two together, rather than collapsing one into the other.

This position paper has argued that debates on digital sovereignty must move from dominant definitions and be reinterpreted from below, in consonance with popular power and collective reappropriation by communities, workers, and social movements. At the same time, not every emancipatory practice should be subsumed under the label of sovereignty. Distinct political traditions—popular sovereignty and autonomy—reflect complementary but different worldviews, with divergent roles for the state and different scales of agency. Bringing them together allows us to think more complexly about internet governance. Popular digital sovereignty provides tools to confront structural dependency and assert collective authority over infrastructures. Autonomy highlights relational and prefigurative practices that refuse hierarchical domination and affirm plurality. Especially in Latin America, where movements have historically combined demands for sovereignty with practices of autonomy, reappropriating both concepts can enrich digital governance agendas. To reclaim the emancipatory potential of technologies, social movements and communities must articulate sovereignty and autonomy together, grounding systemic critique in everyday practices and ensuring that digital futures remain accountable to the people.

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COMMUNITY DATA GOVERNANCE AS A TOOL FOR INDIGENOUS SELF-DETERMINATION IN OAXACA

Melquiades (Kiado) Cruz Miguel¹

INTRODUCTION: THE URGENCY OF DECOLONIZING DATA

The contemporary architecture of global data governance faces a crisis of structural legitimacy. In the era of ubiquitous datafication, global information flows are governed by the dynamics of surveillance capitalism (Zuboff, 2019), wherein human behavior is stripped of its social context, quantified, and transformed into a tradable asset. Far from being a neutral technical standard, this neoliberal paradigm functions as a neocolonial infrastructure that Couldry and Mejias (2019) conceptualize as “data colonialism.” Just as historical colonialism appropriated the physical resources, land, and labor of colonized peoples, data colonialism appropriates human life and knowledge by converting them into exploitable data flows. For the Indigenous peoples of Latin America, and particularly for the cultural and linguistic mosaic of the state of Oaxaca, Mexico, this process of datafication represents a new frontier of dispossession and epistemic violence. Community assemblies, biodiversity maps, herbal knowledge, and the linguistic richness of Indigenous communities are constantly subject to silent extraction by external researchers, biotechnology corporations, and global digital platforms. This process takes place without the free, prior, and informed consent of the communities, and without them having control over how such information is stored, interpreted, or used.

Faced with this extractivist scenario, the mere adoption of Western data protection frameworks –such as the European Union’s General Data Protection Regulation (GDPR)– proves deeply insufficient. These regulatory frameworks are structured around the principles of individual privacy and personal property rights, legal categories that are alien to, and incompatible with, the collective and communal forms of social organization that characterize indigenous peoples.

The question guiding this action research is: How can Indigenous communities transition from abstract political resistance to the development of practical tools that operationalize sovereignty over their own data? The central thesis of this work holds that Indigenous Data Sovereignty (ID-Sov) is not an abstract principle that can be realized through declarations of rights or cosmetic, top-down multicultural policies. On the contrary, sovereignty requires Community Data Governance as its living praxis. This praxis requires prior control over the physical technological infrastructure (autonomous telecommunications) and the co-design of governance tools and methodologies rooted in local norms of communal cooperation, such as tasks (*faena*) and community work (*tequio*).

¹ DCSL Practice Fellow, Stanford PACS / Initiatives Coordinator at SURCO Oaxaca A.C.

Through the systematization of the *InDigital* platform, an initiative of the organization Servicios Universitarios y Redes de Conocimientos en Oaxaca (SURCO A.C.), this article documents how Zapotec, Mixe, Triqui, and Mazatec communities are building autonomous models for managing and protecting their digital assets, offering an alternative and pluriversal horizon for global internet governance.

THEORETICAL AND CONCEPTUAL FRAMEWORK

Data Colonialism and Ontological Monoculture

The concept of data colonialism makes it visible that data capture is not merely a problem of “privacy” or “information leaks,” but rather a process of reorganizing global social relations (Couldry & Mejias, 2019). This phenomenon operates by commodifying the everyday experience of individuals through the imposition of a universal technical infrastructure that homogenizes cultural differences.

On a technological level, this translates into an ontological monoculture that assumes knowledge of the world is reducible to numerical variables structured according to Anglo-Western binary logic. The classification algorithms, metadata architecture, and search engines of major corporations are not designed to recognize the semantic complexity of an agglutinative language like Ayuujk (Mixe), nor to respect the ethical boundaries of sacred ancestral knowledge. In this way, dominant technological systems erase the diversity of the “Pluriverse” (Escobar, 2018), forcing communities to assimilate into commercial platforms that surveil them and strip them of their agency.

Indigenous Data Sovereignty (ID-Sov) and the CREA (CARE) Principles

As a counterbalance to data colonialism, Indigenous Data Sovereignty (ID-Sov) is defined as the inalienable right of Indigenous nations and communities to own, control, and govern the data that describe their people, communities, lands, and cultural resources (Kukutai & Taylor, 2016). ID-Sov shifts the focus of attention from the “individual user” of liberal human rights doctrine to the communitarian “collective subject.”

To operationalize this principle ethically, the Global Indigenous Data Alliance (GIDA) proposed the CREA principles (known globally as CARE) (Carroll et al., 2020). These principles were explicitly designed to complement and challenge the technical FAIR principles (Findable, Accessible, Interoperable, Reusable), which prioritize openness and the free flow of data without considering historical power asymmetries. The pillars that make up this acronym are detailed below:

- Collective Benefit (C): Data ecosystems must be designed in a way that directly benefits the community and mitigates structural inequality;
- Authority to Control (A): The right of Indigenous peoples to determine their own protocols for access to, use of, and custody of information must be recognized;
- Responsibility (R): Those who collect or work with Indigenous data must be accountable to the communities and actively contribute to strengthening local capacities;
- Ethics (E): Social justice, the mitigation of power asymmetries, and respect for cultural integrity must guide the entire data lifecycle.

Design Justice: Territorial Interfaces and Epistemologies

Operationalizing the CREA principles within the software requires drawing upon Design Justice theory. As Costanza-Chock (2020) argues, technology design is not neutral; it tends to encode the biases and privileges of the dominant group. To subvert this dynamic, design justice proposes that technology creation processes center communities that have historically been marginalized. This entails moving beyond commercial user-centered design to embrace community-centered design, where interface architecture, data storage, and access policies are developed through a collective assembly process that respects local customary norms and the epistemologies of the territory.

METHODOLOGY OF PARTICIPATORY ACTION RESEARCH (PAR)

This research is situated within the methodological tradition of Participatory Action Research (PAR), which posits that knowledge production should be a collaborative and transformative process aimed at social emancipation (Fals Borda, 1980). This article systematizes the experience of a collective effort initiated in 2021 by SURCO Oaxaca A.C., under my coordination as a DCSL Practice Fellow at Stanford PACS, in partnership with Indigenous communities from the Sierra Mixe, Sierra Norte, and Mixteca regions, as well as the Triqui zone. The working methodology was structured into three cross-cutting phases:

- Co-design and Critical Digital Literacy Workshops: Interactive workshops were facilitated with traditional authorities, community radio broadcasters, youth, and health committees from the Mixe, Zapotec, Triqui, and Mazatec peoples. These spaces were not conceived to provide training on the “technical use” of commercial tools, but rather to spark collective reflection on the nature of data, how information circulates within their territories, and the threats posed by surveillance and digital extractivism.
- Translation and Linguistic Justice: In close collaboration with translators, community linguists, and local assemblies, pedagogical resources and digital policy tools were co-designed directly in the participants’ native languages. This process required a task of conceptual translation in which terms such as “algorithm,” “metadata,” or “digital security” were reinterpreted through the metaphors and knowledge systems of each language, avoiding conceptual assimilation into Spanish.
- Epistemic Tequio: The communal practice of *tequio* (mandatory, unpaid community labor) was adopted as the methodological framework for the research. Decisions regarding the technological design and storage of the *InDigital* platform were reported back to and transparently validated in local assemblies. This ensured that the research was not an act of academic extraction, but rather a direct contribution to the territorial struggles of the partner communities.

THE CASE STUDY: OAXACA, SURCO, AND INDIGITAL

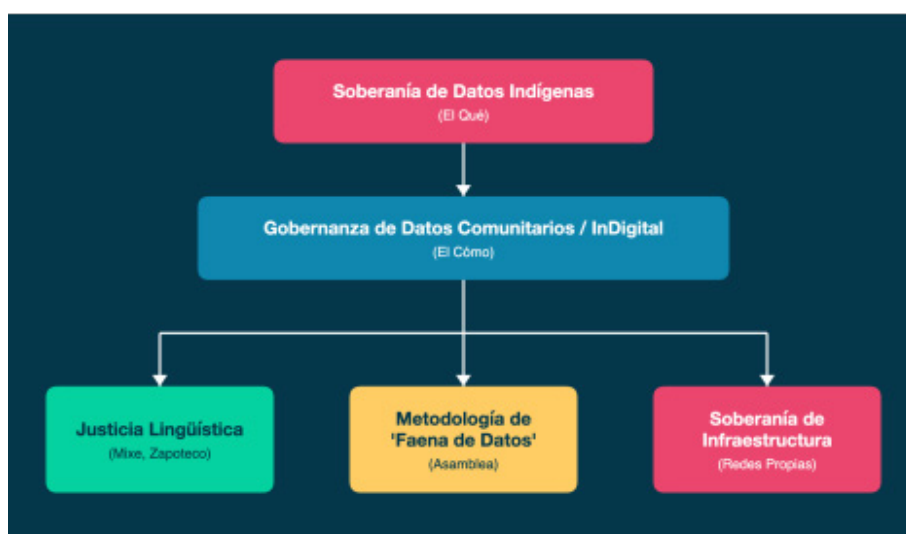
The Genealogy of Autonomy: The Specter and the Networkss

Oaxaca is one of the states with the greatest cultural and linguistic diversity in Mexico, but also one of the most geographically and economically marginalized. Historically, transnational telecommunications corporations refused to deploy infrastructure in the state’s mountainous and jungle ar-

eas because they did not represent profitable market niches. Faced with this exclusion, Indigenous communities, working alongside civil society organizations such as Rhizomatica and REDES A.C., organized to build their own community cellular and autonomous internet networks, utilizing radio spectrum bands licensed for Indigenous social use.

This milestone demonstrated that digital sovereignty requires first controlling the physical infrastructure (the “networks”). However, by around 2020, it became evident that this technical achievement had a critical limitation: the flow of data (the “water”) circulating through these networks remained mediated by commercial platforms (such as Meta or Google) that extracted data from community users. At this turning point, an urgent need arises to design local governance tools for collective information.

Figure 1: Indigenous Data Sovereignty



Source: the author (2026)

The InDigital platform

The InDigital initiative² was conceived as a digital ecosystem of tools, serious games, and interactive educational materials designed to demystify digital rights from the community and rural perspectives of Oaxaca (Cruz, 2022). The platform offers three fundamental components:

- Tamales Digitales: A radio-based educational campaign in the Mixe, Mazatec, Triqui, and Zapotec languages that discusses personal data protection using local, everyday metaphors drawn from communal life;
- The Didactic Web and Community Turípoli: Educational microgames based on Genially that allow trainers, traditional authorities and local public officials to playfully understand the functioning of the National Transparency Platform (INAI) of Mexico, adapting it to the traditional system of positions and the hierarchical structure of indigenous communities; and
- The Community Data Task: The central component of the platform’s data governance, which we analyze methodologically below.

² Available at: <https://indigital.surcooaxaca.org/>

The “Community Data Task” Methodology

The *faena* (task) is a Mesoamerican social institution consisting of collective physical labor dedicated to maintaining the community’s common assets (roads, schools, water systems). In contrast to individual wage labor, the task is a mandatory practice rooted in the principle of reciprocity and collective benefit. The “Community Data Task” developed at INDIGITAL is a methodological subversion of the Silicon Valley corporate data governance model. In the dominant paradigm, individual user data is extracted in an automated, invisible, and non-consensual manner via web trackers, cookies, and proprietary algorithms, under the terms of extensive and indecipherable service agreements.

Faced with this forced extraction, the “Data Task” proposes a conscious, assembly-based and deliberative data curation process. During the in-person workshops, the community gathers physically to carry out an information-focused **tequio**. The methodological process of the **Data Task** is broken down into the following structural pillars (Table 1):

Table 1: Structural Axes

Methodological Axis	Silicon Valley Corporate Model	Community Data Task (InDigital)
Data Subject	Isolated individual (passive consumer of proprietary technologies).	Community (an active collective that makes decisions regarding its digital assets).
Capture Mechanism	Automated, opaque, and constant extraction via algorithmic tracking.	Deliberate compilation, discussed face-to-face and validated in assemblies.
Custody Architecture	Storage on centralized, opaque servers owned by Big Tech.	Local servers and open-source community infrastructures.
Linguistic Justice	Standardization and assimilation into Spanish/English under market-driven semantics.	Metadata and taxonomies designed based on the semantics and structure of Ayuujk, Xidza, etc.
Access Rights	Open monetization of profiles; conditional individual “privacy.”	Differentiated access by level: communal, public, or subject to ritual restriction.

Source: the author (2026)

A concrete example of data work occurs during the digitization of historical records or local biodiversity maps. Instead of freely uploading images or recordings to cloud platforms that claim co-ownership of the content (such as Google Drive or Dropbox), the assembly debates which knowledge can be made public, for example, children’s historical narratives in the native language, and which must remain under strict territorial protection due to its sacred nature or its importance to the community’s geopolitical security (such as the location of springs or medicinal plants).

This subverts the Western notion of the “open web,” asserting the right to secrecy and strategic opacity as legitimate tools of cultural defense against epistemic extractivism.

DISCUSSION: STRAINING GLOBAL SPACES

The Failure of the multistakeholder model and the Pluriversal horizon

The findings of the *InDigital* project compel a critical rethinking of the foundations of international technology policy forums, such as the Internet Governance Forum (IGF). Historically, the IGF has championed the multistakeholder model as the pinnacle of democratic governance, based on the assumption that governments, the private sector, the technical community, and civil society participate on an equal footing to chart the course of the global network. However, viewed from the realities of Latin America's indigenous periphery, this model starkly reveals its colonial limitations:

- **The Invisibilization of Indigenous Sovereignty:** At the multiparty roundtable, indigenous nations and communities are paternalistically lumped together under the generic categories of “civil society” or “minority groups.” This erases the political status of Indigenous peoples as entities with internationally recognized rights to territorial sovereignty (for example, in the United Nations Declaration on the Rights of Indigenous Peoples). Latin American nation-states, which have historically marginalized these communities, do not represent their legitimate interests in such global forums;
- **Inequality in the Rules of the Game:** The multistakeholder model assumes symmetry in the ability to influence outcomes. In practice, major technology corporations dictate regulatory agendas thanks to their immense financial and technical power, while community organizations are excluded by linguistic, geographic, and funding barriers.

Bringing the Oaxaca Community Data Governance model to the IGF does not seek to request “inclusion” or “diversity quotas” within existing frameworks. The goal is to bring about a conceptual shift: demanding recognition of Indigenous peoples as full-fledged political actors with veto power over the use of their data and territories, thereby driving a transition toward a pluriversal governance of the network, conceived as a space where multiple technological sovereignties coexist in a coordinated manner.

The New Challenge: linguistic extractivism in the era of generative AI

The global deployment of large language models (LLMs) and generative artificial intelligence systems poses an unprecedented threat to indigenous data sovereignty. Multinational AI companies are actively “scraping” the internet to compile databases of audio, linguistic dictionaries, and publicly accessible texts in Indigenous languages to train their algorithmic systems.

This linguistic extractivism is characterized by a profound ethical and economic asymmetry: technology corporations appropriate a collective cultural heritage refined by Indigenous communities over centuries, using it to train closed-source AI models for commercial purposes; Indigenous communities do not grant consent, receive no royalties or compensation, and lack control over how AI represents or distorts their language and culture; these generative AI models risk perpetuating biases and linguistic assimilation (for example, by homogenizing dialectal variants of a single language into a single, standardized, Western-leaning version).

In the face of this threat, the “Community Data Task” methodology becomes indispensable. It opens a critical line of defense: locally compiled linguistic databases must be managed through communal collective own-

ership licenses, featuring authentication and differentiated access systems that prevent automated corporate scraping and ensure that any technological development based on Indigenous languages remains fully subordinate to local assemblies.

CONCLUSIONS AND LIMITATIONS

The *InDigital* project in Oaxaca, coordinated with activists and communities, demonstrates that Indigenous data sovereignty is not an unattainable utopia, but a viable everyday practice. Through the conceptualization and execution of the “Community Data Task”, this work documents how it is possible to subvert the paradigm of corporate data control, restoring decision-making and management power to the assembly-based and customary structures of Indigenous territories. However, the consolidation of these models faces significant structural limitations that must be addressed in future research:

- **Technical and Infrastructural Sustainability:** Reliance on low-cost cloud hosting platforms and free software necessitates ongoing technical training for local community technicians to prevent servers from falling under third-party control;
- **Financial Viability:** The construction and maintenance of these community governance platforms often rely on rapid-response funds from international philanthropic organizations or on voluntary community labor (*tequio*). This poses significant challenges for ensuring long-term sustainability;
- **Legal Asymmetries:** National intellectual and industrial property laws continue to prioritize individual commercial property over collective rights of communal stewardship, leaving communities vulnerable to software and data piracy in state courts.

Despite these limitations, the path charted from Oaxaca offers an ethical compass for the decolonial redesign of the Internet. It reminds us that an inclusive and sustainable digital future will not come from centralized design in Silicon Valley, but rather from the proliferation of autonomous local projects that demonstrate, with dignity and tenacity, that it is possible to build a global network capable of accommodating many autonomous digital worlds.

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NUNCA MUSK: TERRITORIALIZED EXPERIENCES OF INTERNET ANTICOLONIALITY IN ARGENTINA

Martina Di Tullio¹

INTRODUCTION

In this position paper, I aim to show the potential of reflecting on internet governance from the perspective of territories with specific environments, histories, and people. For this, I will share three experiences related to internet networks that I witnessed recently in different parts of Argentina. The first one comes from my doctoral research, in which I worked with Quechua communities documenting the incorporation of connectivity and digital technologies into their everyday lives. The second experience is retrieved from following the building of an internet community network in a rural village in the center of the country. And the third one comes from participating in the massive anti-fascist demonstration that took place in Buenos Aires in February 2025. In all of them, hegemonic internet models were interrogated by and for specific communities, territories, and bodies. Even though they are not tales of success against market logic, they show how different social sectors find in collective forms of organization a way to put a question mark on the idea that the prevailing internet model is the only one possible.

1. CUSI CUSI, JUJUY

The extreme northwest of Argentina is part of the Lithium Triangle, an area with 60% of the world's lithium reserves. This is an important mineral for the production of electronic batteries, but its extraction and processing uses and pollutes the scarce water resources of this highland area. Livelihoods of Indigenous communities that have inhabited these lands since ancient times are being affected by these activities.

This is the case in Cusi Cusi, a rural-Quechua community of approximately 300 people located in the highlands of the Jujuy province. Traditional lifestyle consists of llama herding and domestic agriculture; but in the last decades, other forms of wage employment have become more common. Situated at 3800 masl and 4 hours away from any major town, it is often described as one of the most isolated areas of the country, with no data service coverage. In 2019, the government of Jujuy extended the fiber optic network to 19 villages of the area, installing free wi-fi hotspots in their central squares. Cusi Cusi was one of them, and they requested the signal to be installed in the upper part of the village, where it could have a wider reach, instead of the square; but the government refused. Although it was well received, new problems arose: first, the fact that it was outdoors and exposed to the harsh weather was inconvenient, causing people to fall sick from staying connected until late at night. Second, all maintenance of the service depended on the State, which took months to send technicians. Thirdly, some

¹ CONICET – Institute of Archaeology, University of Buenos Aires.

locals bought routers to repeat the public signal inside their own houses, thus weakening the shared bandwidth and provoking intra-communitarian conflicts. Due to this, in 2021 the local authority initiated a project for the building of an internet community network that would allow them to have household connectivity owned, managed, and maintained by themselves. They applied to a national program for funding, which was about to be approved when the Jujuy government intervened and cancelled it, arguing that they were already working in that area. A year later, people in Cusi Cusi were offered two options for household connectivity: they could hire the service from the State or from a private company. Both were paid subscriptions, with the first one being cheaper; however, most locals opted for the private one to avoid depending on the government.

Thus, a market-driven internet model was encouraged over a communitarian one. In a context threatened by mining extractivism, this has significant consequences. A community network would have implied not only sovereignty of decision over this infrastructure, but also jobs for the local youth and the reinforcement of collective organization. Instead, many say that now the village has become “more like a city,” in the sense of the loss of social contact with neighbors and participation in communitarian assemblies. With constant internet connection, locals sense they are becoming more exposed to urban lifestyle aspirations, which decreases the interest in rural work, and deepens the already existing exodus to cities. Therefore, the private internet model fostered by the State has contributed to weakening the community structure that could pose resistance towards the advance of lithium mining.

2. LAS LAGUNITAS, CÓRDOBA

The first experience raised my curiosity about alternative internet networks, and I was disappointed not to see it through in Cusi Cusi. So, I contacted an Argentinian organization working on similar projects (AlterMundi), and was invited to visit Las Lagunitas, a rural village in the province of Córdoba. There, 12 families were in the process of being connected to a radio-link community network, with technicians from a cooperative and funding from the ISOC Foundation. However, what seemed to be an ideal scenario for counter-hegemonic infrastructure soon also became a disillusionment. The cooperative not only failed to connect the families within the stated timeline, but also the work was not communitarian at all: they hired people from Buenos Aires and did not involve locals in the decisions, resulting, for example, in the use of wooden poles for the towers, which is pointless in an environment of frequent wildfires. The cooperative and the ISOC representatives left half of the work undone; even so, they presented the project as successful on their social media. But local families did not endure it: they commented on videos reporting the situation and contacted their nearby University of Rio Cuarto, a public and tuition-free institution, to help them finish the connection along with telecommunication students, teachers, and staff, which is still underway.

3. BUENOS AIRES

These two experiences took place in the context of the rise of Argentina's current far-right libertarian government, which suspended all public in-

frastructure funding as one of its first measures in 2024. The new president also immediately partnered with Elon Musk, allowing for Starlink to set up business in the country, and easing the way for Tesla to access lithium reserves. In January 2025, while Musk was imitating the Nazi salute on camera, Milei gave a homophobic discourse at an international conference. In response to this, on February 1st, a massive anti-fascist demonstration protested in the streets of Buenos Aires, convoking all sorts of collectives together: LGBTQ+, feminist, environmentalist, scientists, educators, Indigenous peoples, Afro-Argentine communities, etc. As I was walking among the masses, I noticed several people holding a sign with a motto I had never seen before: *Nunca Musk* (Figure 1).

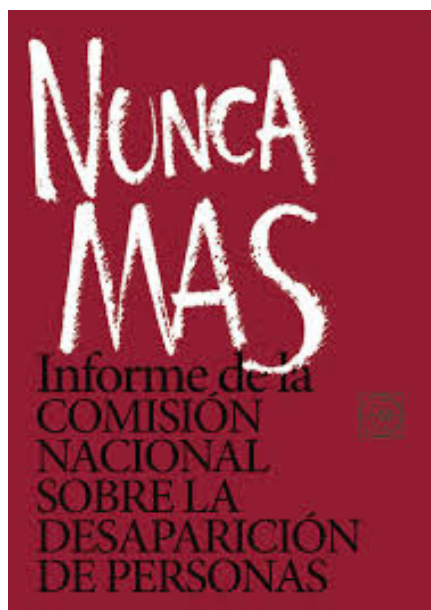
From 1976 to 1983, Argentina was ruled by a military dictatorship, backed by the US government, a period during which people suspected of having leftist ideologies were kidnapped and tortured, their bodies disappeared, and their children were appropriated by other families. After the return of democracy, investigations were undertaken and the leaders of this genocide were judged and imprisoned for crimes against human rights. The testimonies of survivors were compiled in an official report named “*Nunca Más*”, which translates to ‘never again’, a motto retrieved from Holocaust survivors. Ever since, every year on March 24th, this dark period of our history is remembered with that sentence (Figure 2).

Figure 1: Signs at the anti-fascist demonstration (2025)



Source: Photo by the author (2025)

Figure 2: Cover of the *Nunca Más* report (1984)



Source: CONADEP (1984)

The *Nunca Musk* signs shown on February 1st, 2025 imply a spontaneous association of the popular imagination between current issues related to the power structures of the internet and a long history of interference of the Global North in South American political affairs –with the intent of silencing discourses that shift the focus away from the market economy, and of having access to the region’s resources. The motto also signals corporality as the battlefield of this struggle: because bodies are needed to defend the land and its resources; to know and act for the land they inhabit; to share ideas and protest against human rights violations. And today’s hegemonic internet is a place where bodies are discouraged from coming together because of the comfort of online communication and of not being at any risk when insulting and spreading hate speech to others. But *Nunca Musk* means as well that there are a lot of people who keep the memory alive, and who do not want a history of fascism, racism, colonialism, violence, and war to be repeated.

RIO DE JANEIRO, BRAZIL

The II Symposium on Critical Internet Governance that took place in Rio de Janeiro, Brazil, in October 2025, was an insightful moment of encounter, presence, and sharing of bodies from different countries and trajectories, coming together to reflect on these and similar experiences. Together, we delved into the limits of hegemonic models of internet governance and explored the possibilities of different paths. Regarding the cases exposed in this text, three main questions were raised, to which we sought some answers.

In regard to the process of Cusi Cusi: how could internet governance help in discouraging rural uprooting? As I mentioned, this is a concern that exists among some of the local actors, and I believe they pointed in the right direction when trying to design a community-led internet network. The experiences with these models in Latin America are heterogeneous and are

not exempt from obstacles, conflicts, and failures, as shown by the case of Las Lagunitas and also in other regions (e.g., González, 2020). But many of them have proven to help in the strengthening of rural villages' sovereignty over their territories, knowledge and ways of living (Parks et al., 2021; Rosa, 2022). Fundamentally, the management and maintenance of the network by members of the local community is a way of generating employment for local youth and a sense of a shared resource that is worth taking care of collectively. Moreover, some Indigenous villages decided to implement intranet systems that allow for community members to easily access resources based on traditional knowledge. In Jujuy, this could include ancestral learnings regarding agricultural and herding activities, the symbolic significance of the elements of the landscape, and content regarding the Quechua language. This transmission could further inform the activity of locals who choose to work in tourism and want to spread the history and culture of their land. The community could also seek to collectively guarantee their members internet coverage for their fields, either through telephonic or satellite services; thus helping the security and accompaniment of those who still do rural work. Of course, disconnection is not the only reason why people do not continue with this activity, as also many other economic factors intervene. Thus, local internet governance should also reflect on what kind of digital activities and contents could be encouraged in order to foster the interest in and sustainability of this work.

In Cusi Cusi, there is already a local cooperative of rural producers, which could find better allocation for their products through an organized use of the network, as shown in other contexts (Sánchez Dávila 2018). Another aspect that could be addressed is the consumption of online content that strengthens urban aspirations, by promoting, instead, sources and creators with different discourses –an issue we talked about in one of the workshops on digital citizenship that local leaders and I organized in Cusi Cusi, in which we shared recommendations on rural Quechua creators from Bolivia and Chile. Rural-to-urban migration is, of course, a complex issue depending on several social, political, and economic dimensions; but it is important to show that internet governance plays a role in guiding the outcome of people's choices in regard to their own lives.

In Jujuy, however, public funding for community-led internet networks was directly managed by the governmental administration, resulting in their interference in favor of market-based models. This leads us to a second question that arose during the Symposium: how could that be avoided? An answer can be found following the second case presented in this work. Indeed, in Las Lagunitas, locals searched for help in a different kind of public institution: the University of Rio Cuarto. In Argentina, regional public universities receive their budget from the State but are autonomous in their management. Thus, they can act as articulators where experts in both technical and social aspects can directly collaborate with local territories in managing the available resources. If local actors and territories are considered appropriately, this can help mitigate the top-down perspectives that often come associated with funding and technical work that proceeds from external actors, such as ISOC or experts from the capital city.

However, under the current Argentinian national government public universities do not even count on enough funding for paying their profes-

sors and staff, let alone for projects of community internet networks. Under an ultra-right libertarian party, universities can never be fully autonomous. Therefore, the third question that arose from the Symposium, following the experience of the demonstration in Buenos Aires, is what role could social movements that oppose current administrations have in internet governance? Just as the other cases showed the importance of including the voices of rural communities in the implementation of their digital infrastructure, in larger urban contexts it is the counter-hegemonic social movements the ones that can create a place for the critique of the current capitalist and corporate powers that define what the internet is, and for the imagining of alternatives guided by values other than profit, such as social well-being and sustainability. It is through popular political participation –not necessarily institutionalized in civil associations or NGOs– that the technological infrastructures of people’s everyday lives can be linked to wider systems of power and oppression, encouraging questions in the general civil society such as: what could possibly be the relation of Elon Musk to issues regarding human rights? Through the “*Nunca Musk*” signs, the neutrality of technologies is defied, and the importance of understanding the continuity of the darker periods of our history in the current processes is acknowledged.

In this brief work, I wanted to share these diverse experiences from my country in order to show that digital coloniality is not only about data extractivism, but also about mineral resources extracted from Indigenous territories, about infrastructures that ignore local needs, and about the ways of living with others that are promoted by and via the internet. I also intended to light some hope with regard to imagining alternatives from the field of IG studies: maybe change does not have to depend solely on the corporations we are facing, but it can certainly come from below, from people who are interested in protecting their lands, their communities, and their bodies. Where memory is alive, another internet can flourish.

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INTERNET GOVERNANCE AND THE AMAZON: TERRITORIES AND INFRASTRUCTURES

Hemanuel Veras¹

I am writing this short essay with the intention of critically debating internet access in the region known as the Amazon, considering the context of the different territories and existing infrastructures in the region. The correlation between this information can elucidate a more qualified dialogue on the subject, going beyond the hegemonic developmentalist and colonial ideas that still inhabit the imagination of managers, researchers, and entrepreneurs working in the spaces of Internet Governance (IG).

What we call Internet Governance is “a set of multidisciplinary and multi-stakeholder participatory processes to discuss not only the technopolitical dimensions of the network, but also to develop and implement principles, norms, rules, and decision-making procedures” (Kremer, 2023). In Brazil, network governance is multi-stakeholder, guaranteeing the participation of the government, the business sector, organized society, and the academic and technical community. Even with this institutional design, the spaces of Internet Governance still perpetuate asymmetries, with structural inequalities within these spaces of participation. Only recently, for example, has the debate on internet access in the Amazon become central to these spaces.

The Amazon is a territory demarcated from its equatorial forest biome that encompasses nine Latin American countries: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela. In this essay, I will always refer to the Brazilian Amazon, which corresponds to 61.9% of the Amazonian biome (MapBiomias Amazônia, 2022) and was organized by the Brazilian State as the Legal Amazon, through Law No. 5,173 (Brazil, 1966).

The area of this Legal Amazon foreseen in the Law encompasses the territories² that currently correspond to the states of Acre, Amapá, Amazonas, Maranhão, Mato Grosso, Pará, Tocantins, Rondônia and Roraima, approximately 58 % of the national territory (IBGE, 2022). The idea of Amazon is worked on here as a geopolitical and socio-biodiverse complex that presents in its historicity a well-located place within the colonial and developmentalist thinking of international capitalism.

According to Becker (2025), the Amazon is a territory historically controlled more by geopolitical strategies than by settlement, and the prevailing development model has always been that of a frontier economy, characterized by the continuous exploitation of its natural resources and the marginalization of its inhabitants. This control and development model is part of a globalization process that is the apex of capitalism and guarantees the continuous flow of resources and inequalities (Santos M., 2019, p. 64).

¹ PhD candidate in Communication and Culture (ECO/UFRJ) and member of REDE

² The Law created the Superintendency for the Development of the Amazon (Sudam) and was later modified by Complementary Law No. 124/2007, which maintained the idea of the Brazilian Legal Amazon for the purpose of supporting public policies and investments.

The role that the Amazon plays geopolitically and economically is connected to the functioning of international capitalism, from the time of colonial Brazil to the present moment.

This international context generates cross-cutting issues in the region, including access to internet infrastructure and the quality of its use in different territories. When it comes to statistics on internet access per household, the states in the region show percentages close to the goal of universal network coverage: the state of Rondônia, for example, has 91.6% of its households with internet access, followed by Mato Grosso with 91% and Amapá with 88.4% (IBGE, 2024).

However, when we analyze network usage beyond simple access, the scenario changes. In this sense, it is possible to use the concept of Meaningful Connectivity, which takes into account four factors to evaluate the quality of this access: connection speed, use of a personal device, a broadband connection without data limits, and daily usage frequency (NIC.BR, 2024). Looking at it from this perspective, the statistics change: of the 9 states in the Amazon region, 5 are among the 10 Brazilian states with the highest percentage of the population with low meaningful connectivity: Roraima, with 55.3%; Amazonas, 48.5%; Maranhão, 48.3%; Pará, 47.2%; and Acre with 42.8%. Of the states in the Legal Amazon, only one state is among the 10 Brazilian states with the highest percentage of the population with high meaningful connectivity: Rondônia, with 18.7%.

One of the major obstacles to internet access lies in the high prices charged for the service and the poor quality of internet access in most cities in the region. While the price per megabit in Manaus can reach R\$ 0.99 and costs R\$ 1.19 in Rio Branco, Acre, in inland cities such as Coari, Amazonas, the megabit costs R\$ 29.99 and in Taruacá, Acre, it costs R\$ 50 (IDEC, 2022). This particularly affects the rural population, which, even when close to large urban centers, faces great difficulties in accessing the internet.

In addition to the technical and financial difficulties of accessing the internet, there is the construction of an imaginary about the Amazonian territories and the poetics of the internet's technological infrastructures: "In the dialogue about the internet, there is a perception of how this technology, new to most, can connect the distant place where they live with the world, even if the world is Manaus, which is only a few kilometers away" (Veras, 2023). This excerpt, which discusses interviews conducted with residents of the Nossa Senhora do Livramento Community, near Manaus, Amazonas, reveals how, even living very close to one of the region's metropolises, community members perceive the place where they live as isolated and distant.

The construction of an imaginary about an empty, distant, and disconnected Amazon dates back to a European ideal of an exotic territory, full of mysteries and riches, ready to be exploited by colonizers (Gondim, 2007), and is still a colonial legacy very present in the speech of those who live there and those who look at the region from the outside.

In the last century, the Amazon was reinvented, now as an environmental powerhouse, a wellspring of ecosystems that allows for the proposition of economic and technological intervention models, but not for human presence without the need for regulation. Thus, the Amazon underwent an environmental and ecological update, which positioned it as a source of unique biodiversity.

Unfortunately, this update did not diminish the colonizing gaze of exotism; the only change in this gaze was that the forest and its riches became a priority to be conserved, and its local populations began to be considered threats. Because of this, local populations had to deal with the creation of Conservation Units in various forms, with their own rules, and which were sometimes made without consulting the populations that live there (Santos, L., 2020, p. 107).

While this narrative justifies the lack of investment in the region due to an absence of commercial and political interest, it also endorses developmentalist or conservationist ideas of large-scale projects with external solutions that do not take into account the knowledge of the local populations and their specific characteristics.

It's a dichotomy also anchored in the strange concept of 'sustainability for the Amazon' coming from large projects of the Brazilian state, mining companies, agribusiness, land grabbing, charcoal production, and *big tech companies*, and a growing number of Brazilian and foreign civil society institutes and organizations that have no responsibility whatsoever towards these ecosystems (Neves Barros, 2024, p.81).

Large development projects, such as roads, hydroelectric dams, and economic projects, have always brought technological infrastructure from other places with promises of solutions and improved quality of life, as expressed by the inhabitants of the Livramento Community regarding their expectations with the arrival of better internet.

These infrastructures are not just technological devices; they are local and global mobility networks through which artifacts, people, practices, norms, and capital transit (D'Andrea; Vailati, 2020). In the case of the internet, accessing the signal involves a long path composed of cables, local companies, data centers, legal regulations, political decisions, operational standards, large international companies, hardware industries, and a production chain that requires raw materials extracted from different territories.

Furthermore, infrastructures evoke poetics, which are desires and fantasies, often techno-solutionist, that are independent of their technical function. These things, people, and meanings that traverse the networks of infrastructures relate to each other (Larkin, 2020), gaining strength in the imagination of those who interact with these devices. In the Amazon, the combination of these two imaginaries—of an empty and distant space, and of the idea that external solutions will develop the region—replicates colonial thinking.

Examples of this type of project were Amazônia Conectada³ and NavegaPará⁴, two government projects that did not result in a permanent improvement in connectivity in the regions where they were implemented.

³ The Connected Amazon Program (PAC) was created in 2015 by Interministerial Decree No. 586/15 (Brazil, 2015), and is coordinated by the Ministry of Defense (Brazilian Army) with support from the Ministries of Communications and Science, Technology and Innovation.

⁴ NavegaPará program was created in 2007 by the Government of the State of Pará through the signing of two agreements: one with the National Education and Research Network (RNP), for the use of the Belém Metropolitan Network (Metrobel), and another with Eletronorte, which ceded 1,800 km of its fiber optic network to the State Government. The administrative coordination of the Program is the responsibility of the State Secretariat of Science, Technology and Technical and Technological Education of Pará (SECTET), and the technical coordination is the responsibility of the Information and Communication Technology Company of Pará (Prodepa).

The Connected Amazon Program (PAC) was created by the Federal Government with the objective of expanding communications infrastructure and contributing to the National Broadband Plan (PNBL) in the Amazon. The PAC installed two fiber optic cable networks that ran from Manaus to Tefé, along the Solimões River, and to São Gabriel da Cachoeira, along the Negro River, completing the deployment of these networks in 2021.

According to the Brazilian Federal Court of Accounts (TCU), the Program did not achieve its objectives (Brazil, 2019) due to a lack of managerial capacity on the part of the Brazilian Army, a lack of actions to promote digital inclusion, and technical problems in the operation of the two information highways after their installation.

The Growth Acceleration Program (PAC) was the precursor to a broader initiative that succeeded it, the Integrated and Sustainable Amazon Program (PAIS), known as Connected North, which is installing subfluvial fiber optic networks in the region. The difference is that Connected North has an expanded scope encompassing nine networks spread across seven of the states in the Brazilian Amazon.

The idea is that the new information highways will work together with those installed by the PAC (Growth Acceleration Program), which is why the new Program is currently planning to rebuild part of the information highway that the PAC installed along the Solimões River, which is not functioning. (Julião, 2025)

NavegaPará, on the other hand, is an initiative that was created in 2007 and is still in operation today, but its network of smart cities and connection points has not been updated since 2015 (AGÊNCIA PA, 2015). NavegaPará was very successful in expanding internet infrastructure in the municipalities of Pará, but according to Baía (2012), it had difficulties in promoting digital inclusion and the appropriation of the telecenters participating in the program by people.

Conversely, organizations and researchers in the Amazon region seek to highlight the importance of local population participation in addressing internet access issues in these territories. This idea is present in works that portray different contexts, such as those of women in the Black movement in Santarém (Neves Barros, 2024), indigenous populations in the São Gabriel da Cachoeira region (Benjamim, 2024), or those that discuss the intersection between digital rights and climate justice in the Amazon region (Regattieri et al., 2025).

In this same vein, the Popular Center for Communication and Audiovisual (CPA) and the Pan-Amazonian Technopolitical Coalition (CTP) published the Letter of Recommendations for Digital Policies for the Amazon (Botelho; Gomes; 2023), a document divided into 6 axes that address the digital rights of Amazonian populations. The first axis of the document is entitled “Towards Internet Governance from the Territory” and proposes the construction of a regionalized agenda for Internet Governance and the promotion of community participation in Amazonian territories.

Herein lies the great challenge of thinking about Internet Governance for the Amazon from the perspective of its territories and localities: listening to those who inhabit these localities and understand the collective needs, a perspective not yet achieved by the Brazilian multi-stakeholder model of Internet Governance. While the Amazon comprises more than half of the

country, the region's representation on the Internet Steering Committee and its Sectoral Chambers is still small, and the debate has little reach across the nine states that make up the region.

Therefore, the Pan-Amazonian Technopolitical Coalition and researchers from the region seek to occupy spaces within Internet Governance and advocate for the importance of promoting these debates in the Brazilian Amazon, inviting more social actors to discuss Internet Governance issues from within their own territories. For these communities, this is the way to seek solutions for internet access that guarantee ownership and sovereignty for these populations.

The search for these solutions, which involves qualified listening before the formulation of public policies and the offering of commercial services, has historically been neglected by GI spaces. But it becomes urgent to break with the logic of the exotic and uninhabited Amazon, whose solutions can only be met through predatory ventures and techno-solutionist projects.

DIVERSITY STATEMENT IN CITATIONS

Through this statement, I join a collective effort to undo the structural epistemological erasure in academia against women, non-binary people, people of color, from the global South, and other social groups, whose voices are less heard due to bias found in quotes. I believe that transparency in relation to our bibliographies is fundamental to understand the present, and to change this structural framework in a joint and consistent way. I share that in this article, the citations are distributed as follows: female names (23.80%), male (23.80%), female-male (9.53%), and institutional sources (42.87%).

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AN OUTLINE FOR A CRITIQUE OF INTERNET GOVERNANCE¹

Nahema Falleiros²
Monique Figueira³
Beth Veloso⁴

PRIVATIZATION OF INTERNET GOVERNANCE

In this position paper, we argue that any anticolonial and/or anti-imperialist critique of internet governance must begin with a critical review of multis-takeholderism. Since its establishment, this model has been presented as democratic and inclusive, capable of balancing the interests of nation-states, businesses, organized civil society, and the technical and scientific community. However, its adoption replicates the structural contradictions of the international capitalist system.

The official narrative is that these sectors participate on an equal footing in Internet governance. But when we look at how the technical and political management of domain names (DNS), IP addresses, and protocol parameters actually takes place, we realize that the Internet is still under U.S. jurisdiction and influence.

This governance, which ensures the interoperability and stability of the Internet worldwide, was carried out, until the late 1990s, by the Internet Assigned Numbers Authority (IANA), based at the Information Sciences Institute at the University of Southern California (USC) and funded by the United States Department of Defense.

IANA continued to manage the technical aspects of top-level domain (TLD) allocation to meet the needs of different sectors and regions around the world. However, its operational functions were gradually delegated to five Regional Internet Registries (RIRs). In addition to the American Registry for Internet Numbers (ARIN), there is the European IP Network Coordination Center (RIPE NCC), which is responsible for Europe, the Middle East, and Central Asia, the Asia-Pacific Network Information Center (APNIC), the Latin American and Caribbean Internet Address Registry (LACNIC), and the African Network Information Center (AFRINIC).

With an eye on the commercial potential of the Internet and his own re-election, President Bill Clinton created the Internet Corporation for Assigned Names and Numbers (ICANN) in 1998, following a public consultation.

ICANN is a non-profit corporation subject to U.S. law. This contradicts the idea that there has been a democratization or effective international in-

¹ We thank the Rede's reviewers for the comments taken into account in the revised version of this position paper.

² Postdoctoral Researcher at CIA-GP-USP | PhD in Information Science from IBICT/UFRJ. E-mail: nahema@usp.br

³ Substitute Professor at ECO-UFRJ | PhD in Information Science from IBICT/UFRJ. E-mail: moniquefigueira@proton.me

⁴ Elizabeth Machado Veloso holds a PhD in Communication from the University of Minho in Portugal, a Master's degree in Communication Policy from the University of Westminster in England, and a Bachelor's degree in Journalism from the University of Brasília (UnB). She is a Legislative Consultant for the Chamber of Deputies specializing in Communication. E-mail: beth.veloso1@gmail.com

clusion in internet governance. The RIRs are regional management bodies that operate under a system of delegation, but the authority to assign the root zone has historically been tied to the U.S. government and the companies associated with it.

According to Nahema Falleiros (2017), the purpose of creating this organization was to privatize, under U.S. leadership, the technical and political management of the Internet and, in doing so, establish a new market composed of companies operating generic top-level domains (gTLDs), such as VeriSign, which began operating the lucrative “.com.”

With the exception of the United States, the other nation-states have been unable to exert effective influence on ICANN’s decision-making processes about Internet governance (see Datysgeld, 2017). The multistakeholder participation of these countries was limited to just one of the organization’s four advisory committees, which, until 2016, had an agreement with the U.S. Department of Commerce.

MULTISTAKEHOLDERISM, BIG TECH, AND U.S. GLOBAL POWER

The multistakeholder model, which is currently in place for Internet governance, became established shortly after the creation of ICANN, during the two World Summits on the Information Society (WSIS) held in the early 2000s. These summits gave rise to the Internet Governance Forum (IGF). Lacking decision-making or “binding” authority, for example, being exclusively consultative, the IGF has become the primary forum for debating and advocating for multistakeholderism, thereby maintaining positions that oppose proposals for government regulation of the internet. Today, advocates for a greater role for nation-states even accuse the organized civil society, active within that sphere, of capitulation, whether by prioritizing certain issues over others (agenda-setting) or by self-censoring in order to secure funding, given the genuine asymmetry in resources available for this sector’s participation in Internet governance forums.

The fact is that this hybrid, neoliberal-style bureaucratic arrangement among nation-states, corporations, organized civil society, and the technical-scientific community has required, and continues to require, innovations surrounding the very concept of regulation. According to Saskia Sassen (2010), this arrangement more closely resembles a system that safeguards U.S. state power than the country’s typical bureaucratic organizations.

The multistakeholder approach adopted in Internet governance has thus inevitably reflected the contradictions of another system: that of international relations itself. After all, according to José Luís Fiori (2005), it is not hegemony or global governance that drives the capitalist system, but rather the structural instability caused by competition among modern nation-states. This is because these states must also follow the imperative of the expanded reproduction of capital and power in order to sustain their positions of authority. This is the logic underpinning U.S. global power in the international system.

The influence of technology companies on internet governance is intertwined with U.S. global power itself, a fact that was deliberately made explicit by the presence of big tech “barons” at Donald Trump’s inauguration in January 2025. This same power was once again made evident when the U.S. launched a trade investigation to look into alleged irregularities at Pix.

By all accounts, the Brazilian initiative bothered mostly Meta, which intended to dominate the Brazilian market with WhatsApp Pay and reportedly saw this as unfair competition.

Let's remember that big tech companies have strategically positioned themselves in favor of multistakeholderism over multilateralism, since this model works in their favor. It is no coincidence that at NetMundial+10, held in São Paulo in 2024, a representative from OpenAI emphasized its importance by stating that this arrangement "is the cornerstone of internet governance and what ensures that all voices are heard" (Prescott, 2024).

Presented as a democratic and inclusive model, in practice, multistakeholderism is nothing more than a ploy, a geopolitical ruse! Eight of the world's ten largest technology companies are American. This represents a concentration of power unprecedented in the history of capitalism. These corporations not only lead the global economy but also exert influence over elections and interfere with the sovereignty of nation-states, even facilitating the overthrow of governments.

As Shoshana Zuboff (2019) warns, data extractivism has given rise to an algorithm-based surveillance society that imposes itself at the expense of social, collective, and democratic rights. Christian Fuchs (2022), for his part, says that this new digital capitalism subordinates the very notion of sovereignty to the privatized logics of information monetization. The contradiction is glaring: internet governance forums advocate values of freedom, inclusion, and participation, while big tech companies systematically violate these principles, turning them into rhetoric that legitimizes their dominance.

In an era of artificial intelligence and sharp tariff hikes, we should ask ourselves how long the moratorium on creating tariff barriers for the flow of electronic transmissions, currently under discussion at the World Trade Organization (WTO), will last. Renewed every two years due to political pressure from the US and China, is this moratorium not preventing other nation-states from creating taxation instruments capable, as James Görden (2024) suggests, of funding their own digital economies, given that data collection by big tech companies within their territories still takes place without any taxation?

Its termination is already being advocated by Indonesia, South Africa, and India at the WTO, but this same debate needs to take place within the context of internet governance, in a forum with decision-making power, rather than one that is merely consultative like the IGF. Some sectors advocate for the creation of a UN organization with a multilateral agenda, such as the proposal for the Global Digital Compact (GDC). Aiming for popular technological sovereignty, this pact should be capable of defining principles without discarding guidelines that are central to the multistakeholder model, which, it must be acknowledged, had the merit of including non-state actors in internet governance. Even though organized civil society has not yet gained influence over the decisions determining internet regulation.

However, we can neither romanticize UN multilateral digital cooperation initiatives such as the GDC nor treat them as proof of nation-states taking control of internet governance. In our view, this represents yet another innovation regarding the regulation of the internet and other information and communication technologies (ICTs) that have become increasingly im-

portant in the last years. The GDC deals not solely and exclusively with Internet governance, but with the governance of data, artificial intelligence, and digital public infrastructure (DPI). Hence, the term digital governance makes more sense today than it did during the World Summits on the Information Society (WSIS) held over 20 years ago.

In this pact, we do not observe an abrupt shift from multistakeholderism to (state) sovereignty, but rather an overlapping of layers that constitute, as Sixbert Sangwa (2026: 3) suggests, a “polysemic architecture of coordinated governance” aimed at consolidating digital governance within a single multilateral framework. The challenge is huge. It remains to be seen whether or not this “coordinated governance” will be capable of effectively overcoming the limitations of multistakeholderism.

POPULAR AND SOVEREIGN INTERNET GOVERNANCE

One of the main limitations of multistakeholderism is the dominance exercised by US big tech companies over internet governance. Their lobbying has reinforced a veritable digital colonialism that, under the logic of surveillance capitalism, has imposed itself, jeopardizing the very democracy and inclusion that this model claims to defend. Without an effectively multilateral approach, internet governance and digital governance will be unlikely to overcome the power asymmetries mentioned above. After all, multistakeholderism forged and still forges cynical consensus by ignoring them.

The struggle for popular technological sovereignty involves challenges imposed by the very subordinate position occupied by countries on the periphery of capitalism. Some proposals, such as that of the Homeless Workers’ Movement (MTST), conceive of digital sovereignty not as a state-centered policy project, but rather as a definition constructed from the bottom up through collective control over how knowledge is produced, debated, and disseminated both within and outside the movement (Grohmann; Barbosa, 2026). Other proposals seek to overcome technological dependence through the control of critical resources and the democratization of access to them. Among those that prioritize autonomy and inclusion, we emphasize the following: 1) local data control involving investment in R&D, localized management, and proprietary infrastructure, treating ICTs as strategic resources to overcome external dependency (Buesa *et al.*, 2025), including the need for access to the electromagnetic spectrum; and 2) the creation of community networks and decentralized technologies geared toward local interests, such as the Decentralized Web (DWeb) movement, which brings together a set of principles advocating for technologies that foster human agency, the distribution of benefits, and ecological awareness (Crocco *et al.*, 2025, p. 86).

We believe that an anti-colonial and/or anti-imperialist critique of internet governance urgently needs to address the problem of data expropriation and the deregulation of big tech companies operating outside the US, particularly in peripheral countries. Without this critical review, multistakeholderism will continue to reinforce colonial logics of control over information flows that are restricting the ability of nation-states to define their own agendas. This review is fundamental to start considering alternative models that take popular technological sovereignty seriously, in order to ensure that the internet and other digital technologies are finally treated as a global common good.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, genderqueer people, Black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. In this paper, citations are distributed as follows: female names (36%), male names (64%), female-male names (0%), and institutional sources (0%).

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THE FOLLOWING RESEARCHERS ENDORSE THIS POSITION PAPER:

Artur Marques, Beth Veloso, Bruna Távora, Diná Santana, Douglas Campanini, Eliana Loureiro, Pedro Kritski, Rodrigo Duarte

COLONIALITY AND THE NECESSARY DECOLONIAL TURN FOR INTERNET GOVERNANCE

Rafael Evangelista¹

The internet—understood not only as the logical infrastructure connecting servers worldwide but also as “the web” and the platforms that operate on top of it—has radically transformed over the past 20 years. The model of Internet Governance (IG) chosen in 2005, at the Tunis meeting of the World Summit on the Information Society (WSIS), was multistakeholderism. At the time, it was presented as an adequate tool, among other reasons, for promoting greater inclusion of different actors in the policymaking process for the sector. Even then, however, it was clear that there were important challenges to realizing this equal participation, given the asymmetry of power among sectors. Since then, these obstacles have not diminished—on the contrary, they have intensified. The discovery and subsequent gradual implementation of surveillance capitalism (Zuboff, 2019) as the most successful business model on the internet has deepened these disparities. Today, platforms (van Dijck et al., 2018) occupy leading positions among the world’s most valuable companies, and their influence and lobbying power permeate governments, civil society, and academia (Gorwa et al., 2024).

Yet the power of platforms goes beyond their ability to tilt an already unequal multistakeholder arena of consensus-making. They have penetrated the world of labor as new intermediaries, driving further deregulation of the sector. Urban planning has become dependent on platforms, since they know more about city movements than state authorities responsible for traffic control. Platformization has had a brutal impact on education. Teachers now compete with influencers, who often rely on “alternative facts” to boost audience engagement. Platformized school management systems impose unprecedented levels of control—over both educators and students. In extreme cases, students’ gaze during lessons is monitored by cameras designed to infer levels of attention, alertness, and emotional states.

As platforms become pervasive across multiple sectors, they destabilize institutions that took decades to consolidate through complex political and social processes. The destruction of institutions does not leave a vacuum—new institutionalities are created, ones that are more authoritarian, less transparent, and more concentrated in power. In another work (Evangelista, forthcoming), I called this new way of shaping and imposing rules on society and the public Authoritarian Institutions Inscribed in Code (AIICs). They are authoritarian because decisions about the design and operation of architectures and data are restricted to company leadership, which is largely impervious to warnings about the harmful effects of their operations. Furthermore, society as a whole—despite being deeply affected—does not know

¹ Anthropologist, researcher at the Laboratory for Advanced Studies in Journalism (Labjor/Unicamp), and professor in the Post-Graduate Program in Scientific and Cultural Outreach at the State University of Campinas (Unicamp).

the algorithms acting upon it or the data being collected. There are no effective channels for questioning AIIC decisions. Their operators do everything possible to avoid expending time and resources addressing such challenges. And because they are inscribed in code, these decisions are faceless. They operate automatically, as if they were part of the platform's natural order, without direct responsibility for any specific action.

An important feature of AIICs is their normative power, stemming from their institutionalizing nature. By mediating relations across diverse domains—and, in the process, establishing the data relations described by Couldry and Mejias (2019)—platforms shape them according to the values and standards of their centers of production and design: Silicon Valley, understood as a contemporary node of a much longer capitalist-colonial pattern of power. For five centuries, this pattern has been reshaping populations, territories, and forms of life in its own image, articulating racialized hierarchies of labor with the global expansion of capital. Digital platforms intensify this process and further reduce the space for resistance and alternative ways of life. The Enlightenment promises of equality, liberty, universal reason, and critique of absolute power were never separable from this pattern: they coexisted with, and frequently legitimized, the colonial classification of populations into those deemed entitled to enjoy such promises and those to whom they were denied. The Silicon Valley variant radicalizes one of the possibilities already inscribed in this modern/colonial project, dismantling even the formal commitment to collective bonds in order to establish a vast digital marketplace of individuals.

The current model of Internet Governance has proven insufficient to curb the disintegrative force of platforms. Partly because, from the outset, it was timid—only formally integrating diverse actors into debates, while prioritizing Western or Westernized ones, whose demands have value but are never radical enough to alter the system's trajectory. This lack of boldness and excessive accommodation to carpeted negotiation rooms led multistakeholderism to turn a deaf ear to the rise of surveillance capitalism. Warnings were not lacking, especially from academic surveillance studies scholars—even if not always under that name—about the social effects of this business model.

The years following the Tunis summit, when the Internet Governance Forum (IGF) was established and the multistakeholder model was elevated to a structural organizing scheme, were marked by intense discussions about colonialism's legacies and their new digital manifestations. Yet these debates were only marginally integrated into multistakeholder practices, with the main focus on ensuring participation by non-white, non-male, non-Western bodies. This was necessary, but not sufficient.

For over a decade, principles have been suggested to guide multistakeholder processes, ensuring they are effective, legitimate, and inclusive. Documents such as the NETmundial Multistakeholder Statement (2014) and the NETmundial+10 Multistakeholder Statement (2024)—which includes the São Paulo Multistakeholder Guidelines, a set of directions to guarantee fair multistakeholder participation—highlight this effort. The 2024 document's strength lies in emphasizing that relations among sectors are permeated by power asymmetries, and that measures must be taken with this reality in mind.

But beyond ensuring equal conditions for participation across diverse sectors, it is necessary to incorporate genuinely divergent perspectives—

those that understand that internet use and connectivity cannot be tied to the annihilation or assimilation of non-Western ways of life. In this sense, the concept of coloniality (Quijano; Ennis, 2000; Maldonado-Torres, 2007) and Casili's (2017) proposal of a "digital decolonial turn" are useful for research and IG practices. Coloniality describes enduring patterns of power that shape culture, labor, intersubjective relations, and knowledge production even after the end of political colonialism. The digital decolonial turn proposes making visible the invisible labor obscured by platforms—work that occurs mostly in the Global South—while also enabling the construction of collective identities of resistance.

The seeds of decolonial governance of the internet already exist. Free/libre software movement has spent decades constructing digital commons grounded in an ethical refusal of intellectual property as a system of enclosure and extraction. The tamer language of "digital public goods" in mainstream governance agendas illustrates precisely the dynamic this article critiques: the domestication of genuinely disruptive alternatives into forms compatible with the prevailing order. Quilombola and indigenous communities across Latin America and the Global South offer another model of digital practice, in which connectivity serves to circulate collective knowledge rather than feed platform economies. In the Alto Rio Negro region of Brazil, for instance, indigenous communicators carry information on pendrives across rivers and forest trails to reach communities with no connectivity, a practice that encodes knowledge-sharing as collective responsibility rather than individual consumption. At the policy level, however, the challenge is not only to diversify the bodies present in governance arenas, but to genuinely open their decision making to diverse ideas, including those that challenge the capitalist-colonial foundations of the current internet model. An IG that tolerates difference in representation while foreclosing anti-capitalist or non-Western positions reproduces, in procedural form, the same exclusions it claims to address. The NETmundial+10 Statement gestures toward this, acknowledging structural power asymmetries and calling for corrective measures. But this can and must be radicalized: governance processes should actively create conditions for perspectives that do not merely seek fairer participation in the existing system, but contest the system's premises altogether.

A decolonial turn for IG studies and practices would allow us not only to defend multistakeholderism but also to radically critique it in a constructive way. This would mean recognizing that global governance arenas often reproduce colonial hierarchies by privileging voices socialized in hegemonic centers while marginalizing knowledge and experiences that challenge the capitalist-colonial pattern in its current platform-mediated form and defend alternative social values. It would mean seriously addressing the potential for digital technologies to support ways of life that are not necessarily capitalist, and perspectives that go beyond Western individualism. It could also enable the creation and preservation of digital commons that are not mere raw material for artificial intelligence models that drain collective knowledge, but rather serve as tools for societies and groups to strengthen their epistemic, political, and technical autonomy.

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FRAGMENTING THE FUTURE: NON-TERRESTRIAL NETWORKS AND CRITICAL INTERNET GOVERNANCE

Rory Sharp¹

“INTRODUCING FRAGSAT”

“Introducing FragSat. The only satellite dedicated to increasing space junk.” So reads a 2024 satirical advertisement shared on the professional networking site LinkedIn (ConkSat, 2024). Depicting a cylindrical satellite in earth’s orbit opening to reveal a swarm of ball bearings, the FragSat offers an unlikely tool to take seriously the stakes raised by the rapid emergence of Non-Terrestrial Networks (NTNs). Using constellations of small, high-speed satellites in low earth orbit, NTNs present a radical departure from prior forms of satellite communication, one that has so far outpaced proportionate regulation or international coordination. As internet infrastructure expands off-world and the number of artificial objects within the earth’s orbit increases, NTNs need critical internet governance.

This position paper uses the fiction of the FragSat to revisit the recent history of NTNs and rearticulate their future. Beyond the absurdity of the online parody, the fictional FragSat demands that we consider the unique challenges presented by the proliferation of internet infrastructure in orbit. This paper follows that demand in three steps. In the first part, we examine the uneasy punchline of the FragSat, a hypothetical astrophysical scenario colloquially known as Kessler syndrome. This sets the tone for the second section, following NTNs through the convergence of internet and telecommunication infrastructure to contextualize the rapid deployment of constellations such as Starlink, Amazon LEO, and China’s Qianfan. In the third segment, we outline the future development of NTNs to show the misalignment between the race to capitalize on new internet infrastructure and the constraints of orbital space. As a provocation for critical internet governance research, this position paper takes the FragSat as a prompt to theorize the long-term consequences of NTN infrastructure in the absence of serious regulation.

DIAGNOSING KESSLER SYNDROME

First described in a 1978 astrophysics research paper (Kessler; Cour-Palais, 1978), “Kessler syndrome” colloquially defines the exponential growth of artificial debris in earth’s orbit. As satellites are introduced into orbit, the probability of collisions inevitably increases. Each collision generates debris, subsequently increasing the risk of further collisions. Above the rate of removal, either intentionally or naturally, artificial objects in orbit tend to create more artificial objects in orbit, fragmenting functional satellites into

¹ Rory Sharp (rsharp21@yorku.ca) is a sixth-year doctoral candidate enrolled in York University’s Joint Program in Communication and Culture. His dissertation focuses on the culture and politics of new wireless technology.

fields of orbiting debris. In a quasi-Malthusian scenario, the unchecked introduction of artificial satellites could lead to a catastrophic feedback loop. If the population of artificial objects exceeds the carrying capacity of Earth's orbit, regions of orbital space could become consumed by self-perpetuating cascades of debris indefinitely, eventually forming a belt of space junk resembling the rings of Saturn and Uranus. As the authors conclude, after an uncertain threshold "the debris flux will increase exponentially with time, even though a net zero input rate may be maintained" (p. 2645).

NTNs EX NIHILO

NTNs did not come from nowhere, but rather reflect a nascent space race that has quietly played out in the arenas of global standard setting and public-private partnerships over the past decade. As indicated by Niels ten Oever (2025), "with the emergence of 5G, the Internet and telecommunications have technologically fully merged" (p. 73), and the same could be said for NTNs. With the introduction of fifth generation new radio standards (5G) at the end of the 2010s, satellite service was repositioned from the margins as a medium for consumer broadband data. Diverging from past forms of satellite communications, NTNs offer redundant, highly modular infrastructure, primarily using constellations of small satellites in low Earth orbit to massively expand terrestrial coverage. Whereas satellites like the Anik series—launched in the early 1970s to provide television and telephone service to communities across the Canadian arctic—served as relays between fixed infrastructure on the ground, NTNs integrate network functions in orbit. New technical standards released under the aegis of 5G distinguish between "Transparent" architecture, shared with predecessors such as the Anik satellites, and "Regenerative" architecture, incorporating links between satellites in orbit. This means that rather than sharing access to a single earthbound gateway, Regenerative NTNs string together satellites to vastly expand both fixed and mobile terrestrial coverage by passing service requirements between multiple satellites. Thus, NTNs provide an adaptable alternative to terrestrial telecommunications that can be fitted to a variety of situations.

Starlink, operated by the Elon Musk-owned company SpaceX, provides the clearest example of the use cases associated with NTNs, as well as obstacles that stand to constrain control over orbital communication infrastructure. Over the years since its launch in 2019, Starlink has served as a vital stopgap for isolated communities underserved by existing infrastructure or cut off by conflict and environmental catastrophe, as well as a luxury for seafarers and land-bound digital nomads. Starlink is not alone in providing such services, but it is unrivalled. SpaceX faces competition from other players that are still struggling to break into the market for NTNs. These include Amazon's Project Kuiper (recently rechristened Amazon LEO) and the Chinese state-backed Qianfan or "Thousand Sails" constellation (Torbet, 2025), as well as smaller start-up competitors such as ASTMobile. However, the heavily skewed composition of active satellites illustrates the benefits of vertical integration.

Although both Amazon LEO and Qianfan have rapidly expanded their orbital footprint, with 312 and 162 satellites respectively launched since 2023, they pale in comparison to Starlink. With over 10000 satellites in or-

bit as of the time of writing, the total tonnage of active Starlink satellites is greater than that of all other operational satellites combined (McDowell, 2026). Starlink has two critical advantages that help explain this commanding lead. SpaceX has been launching Starlink satellites regularly since 2019, able to absorb the immense capital investments required to support this development thanks to Elon Musk's nebulous business interests and extensive subsidization by the US government. However, this unmatched level of investment is underscored by the centrality of proprietary equipment used by SpaceX. In 2025, 151 out of 210 commercial space launches relied on SpaceX rockets, with third-party orbital freight routinely accompanied by compliments of Starlink satellites (McDowell, 2026). In this context, it is worth noting that the Jeff Bezos-backed aeronautics firm Blue Origin could soon provide an alternative delivery method for Amazon LEO. So, while Starlink is representative of the expansive benefits actualized through NTN, it also shows that this liberatory imaginary of universal connectivity underscores severe concentrations of wealth and power. Even as NTNs transcend the colonial pathways traced by terrestrial infrastructure (Starosielski, 2015), they presuppose unequal access to orbital space.

FRAGMENTARY FUTURES

Echoing the excitable tone shared by LLM-driven chatbots and the boosters of Silicon Valley, the anonymous authors of the FragSat advertisement assure us that the "FragSat is more than a satellite - it's a cloud of over 70 billion steel ball bearings packed into a payload fairing... FragSat, guaranteed to increase the rate of collisions in orbit by orders of magnitude" (ConkSat, 2024). No matter who leads the race to monopolize NTNs, their only lasting guarantee is that this infrastructure will one day be space junk. What becomes of this space junk is an open question. The key contention put forward by Kessler and Cour-Palais in 1978 was not just the possibility of a destructive orbital feedback loop, but the impossibility of accurately predicting such a scenario, as each catastrophic collision creates clouds of debris that are still dangerous, but harder to track. Their only certainty was that the introduction of artificial objects into orbit must involve proportionate removal and debris mitigation efforts. Although the Inter-Agency Space Debris Coordination Committee, an international governance forum working with the United Nations Committee on the Peaceful Uses of Outer Space, has recognized the "step change" (2021, p. 6) in low earth orbit and worked to update their efforts to minimize debris, these regulations are slow to change and difficult to enforce. In pursuit of the power offered through privatized "vertical domination" from orbit (Parks, 2018, p. 197), the incentives of the market for NTNs have little in common with the realities of orbital ecology.

Even as a joke, the FragSat forces us to consider the serious consequences of unchecked competition for orbital infrastructure. Cheerfully advertising the indefinite enclosure of Earth's orbit, the FragSat illustrates the misalignment between the pace of development driving NTNs and the longevity of orbital objects. It highlights that even in orbit, internet infrastructure is grounded in its material ecology. The scope of Starlink constellations has already provoked profound concerns. Disruptions to radio telescoping have become routine (Ferreira et al., 2024) and even where Starlink satellites are successfully deorbited, they retain the risk of depleting the ozone layer (Rannard,

2024). In parallel to the platformization of agriculture studied by Vicentin and Anastácio (2025), the FragSat serves as a reminder that NTN's "socio-environmental impact... is relativized by potential (yet not proved) positive impacts around optimization" (p. 39). Without sufficient oversight, the horizon of worldwide wireless internet connectivity may prove short lived, with future infrastructure threatened by the refuse it is meant to replace.

In spite of these concerns, the pace of NTN-related launches has proceeded unabated, with little heed paid to the potential for Kessler syndrome. In low Earth orbit, the lifespan of satellites is significantly reduced by fluctuating atmospheric drag, but the risk of collision is inescapable. Within a six-month period in 2024, Starlink satellites were reported to have made approximately 50,000 avoidance maneuvers (Pultarova, 2024). At present, there is little scientific consensus about the potential for Kessler syndrome, or even if this process is already underway (Kelvey, 2024). Yet as its namesake stated in a 2009 reflection, the regions of earth's orbit now primarily occupied by NTNs are the principal area of concern (Kessler, 2009). Without slowing the launch of this orbital infrastructure, the potential for Kessler syndrome can only increase. As internet governance expands beyond the Earth, a critical approach must begin from the premise that every new input in orbit is a FragSat in waiting. With the race to capitalize on NTNs reaching its fever pitch, the affordances of orbital internet access must be weighed against the proportional costs of this infrastructure in decades to come. Whether the inevitable outcome of capital accumulation in orbit or a fanciful weapon system to expedite the common ruin of the contending classes such a process is sure to create, the FragSat is a uniquely blunt call to take seriously the conditions facing internet governance in orbit.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, genderqueer people, Black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. In this paper, citations are distributed as follows: female names (33%), male names (46.6%), female-male names (6.6%), and institutional sources (13.3%).

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DIGITAL INFRASTRUCTURE CONCENTRATION IN THE DATA ECONOMY AND CHALLENGES FOR INTERNET GOVERNANCE

João Eduardo Aparecido Luisi Vieira¹
Rodolfo da Silva Avelino²

INTRODUCTION

Data centers constitute the core infrastructure of the information economy. Within digital capitalism, major platforms have built business models around the continuous capture, storage, and processing of data flows. They have developed digital and physical devices capable of transforming a wide range of human activities into data that can be stored, processed, and analyzed. Broadly speaking, the objective has been to identify patterns that increase sales, capture and shape users' attention, anticipate consumer needs, and predict the preferences of social groups and micro-segments. This process became known as datafication (Van Dijck, 2014) and can be understood as the conversion of everyday life into raw material that is privately appropriated and transformed into profit (Zuboff, 2019).

The expansion of this model of data exploitation required a physical infrastructure capable of storing, processing, and distributing ever-growing volumes of information. At the same time, this infrastructure became increasingly concentrated in the hands of a small number of corporations, deepening technological dependencies among countries (Kwet, 2019). Within this process, data centers have assumed a strategic role in the digital economy and, more recently, in the development of artificial intelligence.

These infrastructures reflect an economy characterized by the continuous expansion of data extraction and processing, particularly with the rapid advancement of artificial intelligence (AI). Data constitute the primary input for machine learning and for most technologies associated with the connectionist approach to AI.

The *Global Data Center Trends 2023* report highlights that the rapid expansion of artificial intelligence, together with other emerging technologies, continues to drive demand for secure, scalable, and high-performance data centers. Data centers have therefore become critical infrastructure, particularly from economic and national sovereignty perspectives. They constitute the backbone of technological innovation, enabling advances in AI while reshaping contemporary societies.

¹ Professor at INSPER, holds a degree in Aerospace Engineering from Federal University of ABC, and is completing a master's in financial engineering at Fundação Getúlio Vargas. Expert in information security, engaged in research and production of device and biometric authentication solutions.

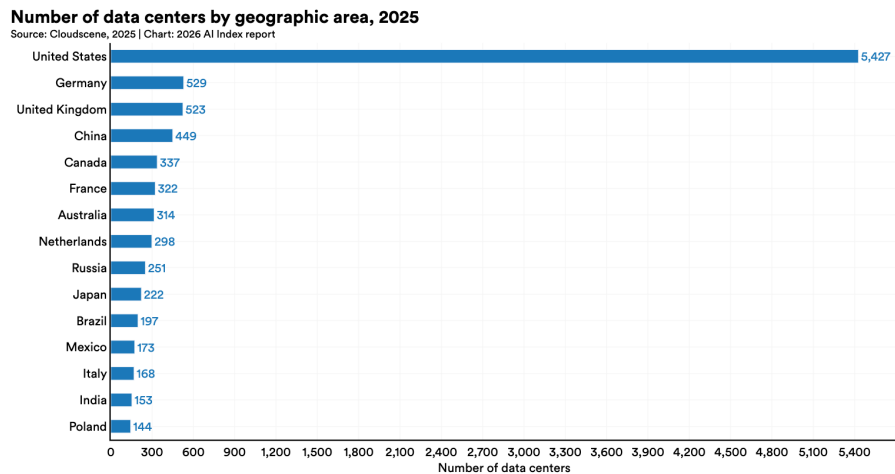
² Professor at INSPER, holds a PhD in Human and Social Sciences from the Federal University of ABC. He is a researcher at LabLivre of UFABC, a board member of the Brazilian Internet Steering Committee (CGI.br), the Internet Governance Research Network, and the Latin American Network of Surveillance, Technology and Society Studies (Lavits).

GEOPOLITICAL IMPLICATIONS OF DATA CONCENTRATION

A data center can operate as – or provide the infrastructure for – cloud computing by supplying computational resources, storage capacity, and networking services. Cloud computing refers to the on-demand availability of computing resources delivered over the Internet through hardware and software hosted on remote servers (Armbrust et al., 2010). These services are offered through different service models, with pricing based on actual resource consumption.

Data centers play a central role in the contemporary economy by enabling the storage, processing, and distribution of massive volumes of information. Their geographical distribution, however, remains highly concentrated. According to the AI Index Report 2026, produced by the Stanford Institute for Human-Centered Artificial Intelligence (HAI) using Cloudscene data, the United States hosted 5,427 data centers in 2025, exceeding the combined total of the next fourteen countries in the ranking, which together accounted for 4,080 data centers (Figure 1).

Figure 1: Global distribution of data centers in 2025 based on the AI Index Report 2026 (Stanford HAI)



Source: Cloudscene, 2025 | Chart: 2026 AI Index report

This geographical concentration of digital infrastructure helps explain the asymmetries surrounding control over cloud computing, data processing, and, more recently, the infrastructure required for artificial intelligence. The concentration of both infrastructure and data reflects a new international division of labor, reorganized around digital technologies appropriated by emerging economic elites in alliance with traditional financial capital that dominates global investment funds (Silveira; Avelino, 2025). Within this division, inequality in the ownership of digital infrastructure is expressed through the inability of many countries to create, maintain, and govern the data generated by their own populations and social groups within their national territories.

DIGITAL COLONIALISM AND THE DATA ECONOMY

Digital platforms, particularly cloud computing providers, are not only the main drivers of digital inequality but also its primary beneficiaries. They operate as agents of a new form of data colonialism, manifested in the in-

ability of countries, nations, and communities to control and exercise jurisdiction over their own data. Data colonialism reflects a broader process of digital colonialism, strengthening the power of a small number of large corporations and technologically advanced states. Through their control over technological development, these actors accumulate economic, political, and military advantages (Kwet, 2019; Silveira, 2022; Avelino, 2023; Faustino; Lippold, 2023).

The widespread availability of cloud infrastructure, combined with specialized security, scalability, and lower operating costs, makes reliance on cloud oligopolies increasingly difficult to avoid. As a result, data and advanced computational resources become concentrated in a handful of Big Tech companies, whose data centers are predominantly located in strategic regions of the Global North.

This environment has fostered the emergence of Artificial Intelligence as a Service (AIaaS), enabling organizations to deploy and scale AI applications more easily (Silveira; Avelino, 2025). At the same time, data center infrastructure has become central to storing and processing the data that sustain these technological developments.

The geographical concentration of infrastructure is accompanied by an equally pronounced concentration of market power. According to Gartner (2025), Amazon Web Services (AWS) led the global Infrastructure as a Service (IaaS) market in 2024 with a 37.7% market share, followed by Microsoft Azure (23.9%) and Google Cloud (9.0%). Together, these three companies accounted for 70.6% of the global IaaS market, while the five largest providers controlled 82.1%, highlighting the persistent concentration of both physical infrastructure and cloud computing services.

Building national digital infrastructure capacities, however, does not necessarily mean reproducing the same expansion model pursued by the world's largest cloud providers. Recent scholarship has emphasized the need to debate not only who controls digital infrastructure, but also which models of technological development are socially and environmentally desirable, particularly in light of the rapid growth in demand for artificial intelligence (Kwet, 2025).

CONCLUSION

This study has examined the key elements that constitute the critical infrastructure of digital capitalism. Control over cloud computing and data centers has become a prerequisite for acquiring and processing the data used to develop artificial intelligence. Large language models and other deep learning applications depend on vast amounts of data and substantial computational capacity. It is therefore not surprising that major technology companies advocate the free flow of data and fewer restrictions on cross-border data transfers, reinforcing the strategic importance of data centers for both the digital economy and national sovereignty.

The concentration of data center infrastructure and cloud computing in the hands of major technology companies has significant implications for the Internet ecosystem and its governance. The extraction of data from populations in countries that lack the infrastructure to store, process, and analyze those data within their own territories – whether because of limited technical capacity or the high costs of storage and connectivity – reinforces

technological dependence and scientific and technological subordination to laboratories located in technologically advanced countries. As a result, technologically dependent countries become users of solutions developed by major technology companies while often serving as developers of applications for those companies' artificial intelligence ecosystems. Within this international division of labor, digital and data sovereignty emerge as central issues in the face of growing technological and economic concentration.

These developments place Internet governance back at the center of debates on digital infrastructure. In this context, discussing Internet governance also means examining who controls data centers, cloud computing, and the computational resources that underpin the digital economy, as well as the mechanisms that may limit this concentration, increase transparency in data governance, and strengthen public capacity to manage critical digital infrastructure.

At the same time, this debate extends beyond the expansion of digital infrastructure itself. Strengthening national capabilities does not necessarily require reproducing the growth model adopted by the world's largest cloud providers. It also requires questioning which infrastructures are needed, for what purposes, and under which governance arrangements. From this perspective, critical Internet governance provides a productive framework for investigating issues related to data localization and data governance, market concentration, cloud infrastructure governance, and regulatory approaches aimed at reducing technological dependencies.

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A RIGHTS AGENDA AS A JUSTICE AGENDA: THE ROLE OF LATIN AMERICAN CIVIL SOCIETY IN SHAPING GLOBAL INTERNET GOVERNANCE

Jamila Venturini¹

INTRODUCTION

Building a future in which technology responds to the needs and imaginations from communities requires a deep commitment to the protection and promotion of human rights, and effective mechanisms for civil society's meaningful participation within the internet governance field. This demand is not new: it has been central to the agenda of social movements and civil society organizations since the early editions of the World Summit on the Information Society (WSIS). Yet, 20 years after the adoption of the delicate consensus enshrined in the Tunis Agenda, the limitations of consolidating these claims are clearer than ever, with the concentration of power among few corporations reaching unprecedented levels.

In this paper, I revisit the participation of Latin American civil society in internet governance processes, arguing that it has consistently upheld an important commitment to rights and social justice. I contend that its strengthening and diversification are crucial for the future progress of this agenda: be it within or beyond internet governance itself.

I approach internet governance not as an academic object of study but as a field of political (and personal) practice. Perhaps for this reason, I make a conscious effort to avoid pessimistic diagnoses, instead highlighting the perspectives of organizations and activists who, from critical positions, continue to contest and shape this space. While I do not aim to represent institutional positions, the proposals presented here arise from a sincere recognition of my responsibility to advance them through the various roles I occupy.

A DISPUTED AGENDA

It is difficult to think about reinventing internet governance, since its very definition lacks precise boundaries. The Tunis Agenda defined internet governance as “the development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet” (ITU, 2005). For those engaged in WSIS processes, the concept was contentious from the outset, as the actors tasked with “applying” it held differing views on what counts as “governance” or

¹ Co-Executive Director at Derechos Digitales, a Latin American-based non-profit organization which defends and promotes human rights in digital environments since 2005. Jamila is a Brazilian journalist and activist with over 15 years of experience in civil society organizations. Researcher in Social Sciences with a master's degree from FLACSO Argentina, she is a board member of the Latin American Network of Surveillance, Technology and Society Studies (Lavits). Currently she is also a doctoral student in Social Sciences at the University of Campinas (Unicamp).

“internet,” and on what kinds of “rules and procedures” were needed for its evolution and use.

Indeed, at the first Summit, civil society organizations² issued a declaration expressing that their positions were not adequately reflected in the resulting documents, despite their active engagement in the WSIS process. The declaration emphasizes that the respect, protection and promotion of human rights are required to overcome inequality and extreme poverty – necessary steps to build “information and communication societies that are people-centered, inclusive and equitable”. It departs from a principle of social justice and people-centered sustainable development, which includes recommendations on eradicating poverty, ensuring gender justice, guaranteeing access to information and communication, the right to education, among others. Other principles highlighted are human rights, culture, knowledge, and the public domain.

The group acknowledges the impact of inequalities in the exercise of fundamental rights, emphasizing the need to address historical and geographical injustices in order to build information societies grounded in social justice. As explained by ALAI member Sally Burch, this reflected an intention by civil society groups to challenge the Summit’s technocratic vision and expand its scope beyond the idea of merely facilitating investments in internet infrastructures in the Global South (Burch, 2025) – an idea with highly colonial and deterministic origins that takes technology as “autonomous from society” and as a neutral mean to “development” and “progress” (Escobar, 2016).

The declaration also addresses internet governance processes, asserting participation in public affairs as a fundamental human right: one that implies access to public information as well as to documents from private companies when these are of public interest. Participation was also linked to cultural and linguistic diversity, stressing equal access to cultural production, media, and connectivity policies. Furthermore, it denounced liberalization and self-regulation trends in ICT governance, insisting that governance frameworks should not be designed by and for a small group of powerful governments and corporations. Instead, they must reflect the diversity of global perspectives.

Given that the internet is a highly distributed network, the declaration concluded that it cannot be effectively controlled by a single organization or interest. It identified several arenas where balance between commercial and social interests was needed, and it proposed the creation of an independent supervisory committee to monitor ICT-related decisions, demand transparency from institutions, and ensure accountability in implementing WSIS commitments.

Civil society, thus, not only disputed the meaning of internet governance since the moment the term was coined, but also positioned the fight

² Among the civil society organizations present in the two WSIS editions are the following ones from Latin America or with strong Latin American presence by the time: Agencia Latinoamericana de Información (ALAI), Asociación Latinoamericana de Educación Radiofónica (ALER), World Association of Community Radio Broadcasters (Amarc), Association for Progressive Communications (APC), Vía Libre Foundation (Argentina) and Rede de Informações para o Terceiro Setor (Brazil). Most of them continue to be active in the region. See: https://www.itu.int/net/wsisis/docs/geneva/summit_participants.pdf.

against inequality as a central piece of its agenda. This meant challenging the opportunistic “optimism” present at WSIS3 and evidencing the silences behind the idea of technological neutrality, which have since then resulted in power concentration and human rights violations within all the tech value chain.⁴

OCCUPYING THE GAPS

Civil society’s engagement in internet governance over the past 22 years can be understood in at least two complementary ways. The first is the attempt to dispute decision-making spaces by participating in them, usually through formal integration in multistakeholder arenas. This approach, however, is constrained by structural inequalities that also hinder rights and justice agendas in other fields. Language barriers, technical expertise, and insider codes often limit the inclusion of non-hegemonic perspectives, particularly in so-called “technical” forums. Participation is also directly affected by resource scarcity, which restricts attendance at decision-making or debate forums and undermines the capacity to produce research and consultations to inform such participation. These limitations, combined with a frequent emphasis on individual rather than institutional representation, have contributed to fragmentation and corporate capture, similar to what has been observed in free software communities (Evangelista, 2010; Coleman, 2013).

The second approach involves disputing the rules of multistakeholder participation itself, using its openings to bring in new interests and issues typically sidelined in governance agendas. This strategy is anchored in the defense of the right to participation, which remains under constant threat.

Latin America provides a valuable case for examining the interplay of these two strategies. For example, in the regional Internet Governance Forum (LACIGF), the 2025 consultation on priority topics identified human rights (61 votes), cybersecurity (55), and AI and emerging technologies (50) as top concerns. Other issues included data, universal access, ethics, and the digital economy. Particularly noteworthy were gender and diversity (27 votes) and environment and sustainability (26) – with the latter selected as one of the themes for the next forum edition.⁵ These priorities, determined through open voting but organized by a multistakeholder committee, will guide the forum’s agenda and session proposals. They also open opportunities for environmental and gender-focused organizations to engage more directly, fostering dialogue with the technical community and expanding debates across sectors.

This inclusion reflects a broader trend in which digital infrastructure and technology-related issues have regained prominence across fields. A review of applications to the Rapid Response Fund managed by Derechos Digitales between 2019 and mid-2023 shows that, of 131 registered organizations in Latin America, only 32 had an explicit focus on technology and data. The rest were engaged in broader social issues, including gender, ra-

³ See, for instance, the item 14 of the Tunis Agenda for the Information Society (2005).

⁴ On such impacts, see for instance, the case of El Salto in Mexico documented by Jes Ciacchi and Sofia Enciso (2025) and other cases reported in the initiative TRAMAS developed by a collective of Latin American organizations. Available at: <https://tramas.digital>.

⁵ This refers to the 2025 edition of LACIGF, undertaken in Cordoba, Argentina. See: <https://lacigf.org/edicion-18-del-lacigf-2025/>.

cial justice, and environmental activism. The proposals submitted during this period emphasized human rights and technology in key areas: beyond frequent mentions of “rights” and “digital,” terms such as violence, security, and protection appeared prominently, along with gender and women. Gender-based violence, cyber-harassment, and non-consensual sharing of intimate images were recurring concerns. References to indigenous and environmental issues are also present in the sample. Topics that could be considered more traditional in the digital rights agenda – such as privacy, data protection, and freedom of expression – are not prominent in the titles of proposals.

More than a broader interest in the field, what is observed is that, similarly to what was happening during WSIS, civil society continues to dispute narrow understandings of internet governance and to push for an agenda that intersects with other visions: be them of traditional communities or of feminist scholars and activists. By pushing its main regional forum to include considerations on environment and sustainability, the Latin American community also poses the modes of production of the internet as part of the discussion. Within a multistakeholder conversation, this not only offers counter-arguments to the corporate discourse, but allows strengthening strategic alliances and reshaping the tech policy conversation at the regional level.⁶

BUILDING AND STRENGTHENING AGENDAS

Many challenges remain for consolidating a regional internet governance agenda grounded in human rights and social justice. These include corporate capture, threats to social organizing and rights defense, attacks on human rights institutions, the dismantling of international cooperation, and the growing state-corporate alliances in the U.S. and their war against any attempt of rebalancing power relations (Venturini, 2025).

Yet, I do not see internet governance as a static or isolated field. Rather, I believe it remains a dynamic space where new alliances emerge and where civil society can continue to converge into unifying claims and proposals for social transformation, challenge deterministic views of technology and push internet governance actors to account for persisting and increasing inequalities.

Looking at today’s landscape with critical optimism, I argue that the Latin American experience demonstrates the persistent potential to contest and reshape internet governance around principles of rights and justice. If this by itself does not change the scenario, it tensions the loose consensus on which internet governance has tried to sustain itself, and opens space for the emergence of alternative forms of organization and building technology that serves the public interest and supports people’s and the planet’s well-being – not the contrary.

⁶ I do not mean that the corporate narrative is not present in policy discussions in the region. On the contrary: beyond observing their strategies in my lived experience as a policy advocate, there is increasing evidence of how the big tech lobby operates in Latin American countries. See for instance the series of investigative news reports “The Invisible Hand of Big Tech” by several independent media outlets: <https://apublica.org/especial/a-mao-invisivel-das-big-techs/>.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, genderqueer people, Black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. In this paper, citations are distributed as follows: female names (50%), male names (30%), female-male names (0%), and institutional sources (20%).

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BUILDING THE FOUNDATIONS OF TRANS-INCLUSIVE INTERNET GOVERNANCE

Jess Reia¹

INTRODUCTION

Few areas can bring together important discussions on technology and human rights as internet governance does. It covers a myriad of issues, from platform regulation and artificial intelligence (AI) to infrastructure and data privacy. Due to its relevance and reach into technologies we interact with on a regular basis, internet governance and its community need to be inclusive, open to criticism, and ever evolving. Similarly, while gender equity is gaining more visibility within important spaces such as the United Nations Internet Governance Forum (UN IGF), gender diversity is frequently overlooked, like trans, nonbinary, gender nonconforming, and Two-spirit individuals, as well as other fluid expressions.

Although trans people face specific challenges when online, such as misgendering² and “deadnaming”³, they also are significantly more likely to experience cyberbullying (Evelyn et al., 2022) and digital harassment (Powell et al., 2018), and other forms of online gender-based violence (Derechos Digitales, 2024) also target gender nonconforming people. However, the internet can be “lifesaving” (Austin et al., 2020) for trans individuals, having different practical and theoretical meanings (Haimson, 2025) and offering spaces and platforms for care, community-building, activism, and sociability.

The relentless dehumanization campaign targeting gender diverse people has deep ramifications. In platform governance, for example, once big tech companies roll back protections against discrimination against trans people (Barnett, 2025; Newton, 2025) and misinformation, these communities are more vulnerable to tech-enabled violence. With increasing state surveillance and techno authoritarianism (Beauchamp, 2009, 2019; Lamensch, 2022), being visible online requires stronger digital rights (Reia et al., 2025) and trans-inclusive internet governance frameworks – now more than ever.

Despite the few attempts to address gender identity at the intergovernmental level, the findings from independent experts’ reports (United Nations, n.d.) and statements are still to be operationalized in a trans-inclusive way across the UN divisions, its forums and working groups. Additionally, more intersectional approaches are needed, especially for race, ethnicity, and class.

Drawing from and expanding on the feminist critique of “structures of participation in digital policymaking” (Shade, 2014), based on arguments about the control exerted by internet architecture (DeNardis & Hackl, 2016)

¹ Assistant Professor of Data Science, University of Virginia

² Misgendering is when someone refers to another person (especially a transgender person) using a word, a pronoun or form of address that does not reflect their gender identity. For more information, see Mayworm et al., 2024.

³ I use “deadnaming” here referring to the intentional act of calling a transgender individual by their birth name, to portray it as a harmful and violent practice, and because it is the term occasionally used in the terms of service of social media platforms.

and more recent scholarship on AI governance (Attard-Frost, 2025), this position paper has two goals: (1) to briefly map the key challenges faced by gender-diverse individuals in digital policymaking and internet governance; and (2) to serve as a starting point to build more trans-inclusive internet governance scholarship and practice. This topic deserves more attention, as it offers important lessons to the global community while contributing to critical internet studies.

KEY CHALLENGES

Here, I present reflections on the challenges, barriers and trade-offs gender-diverse people must face to be part of the main internet governance spaces and venues. There are many barriers to access that span from the lack of human rights-respecting accommodations to the threats posed by host countries, and to the overall invisibility of specific risks that the internet poses to trans people.

Issue of access to relevant spaces and decision-making processes

For instance, the UN IGF, that takes place annually, does not allow people to use preferred names, titles other than the gendered Mr./Ms./Mrs. and only offers two gender options (M/F) when registering as a participant. Being one of the most relevant spaces to build transnational networks of internet governance, the lack of basic accommodations excludes trans people or forces them to comply with having their legal names (often called “deadnames”) displayed on their badges, being misgendered and using incorrect titles. In countries like Canada, legal decisions reinforced deadnaming and misgendering as potential human rights violations (Haidar, 2024). That the IGF and other intergovernmental spaces such as the UN World Data Forum continue to ignore this issue shows that the UN is shutting gender-diversity out of key international decision-making processes around technology, way beyond the UN IGF.

Another barrier worth mentioning is the choice of host countries. Some of these hosts are not committed to safeguarding human rights, often online and offline, being dangerous places for the 2SLGBTQIA+4 community to go. In certain countries, being trans is criminalized. Despite the importance of bringing human rights-based approaches and engaging with local civil society organizations in such countries, the risks that emerge when hosting big events should not be ignored. For instance, in 2024, the UN IGF was hosted by Saudi Arabia, a country that criminalizes same-sex relationships and trans individuals with the death penalty. When the host country was announced in 2023, digital rights advocates and organizations were vocal about the problematic choice of such country, given its “abysmal human rights record” (Access Now, 2023), requesting the UN Secretary-General to reverse the decision to make Saudi Arabia IGF’s host (Joint Statement, 2023). Unfortunately, the forum still took place in Riyadh in late 2024, with many advocates and organizations boycotting the event.

⁴ This is the acronym used by the Government of Canada. 2S: at the front, recognizes Two-Spirit people as the first 2SLGBTQI+ communities; L: Lesbian; G: Gay; B: Bisexual; T: Transgender; Q: Queer; I: Intersex, considers sex characteristics beyond sexual orientation, gender identity and gender expression; +: is inclusive of people who identify as part of sexual and gender diverse communities, who use additional terminologies. More information on the terminology can be found here: <https://www.canada.ca/en/women-gender-equality/free-to-be-me/2slgbtqi-plus-glossary.html>

In terms of support for participation, unlike other successful programs and engagement initiatives, such as youth programs and the forum's encouragement of multistakeholderism to propose sessions, the UN IGF still lacks mechanisms and resources for supporting some of the most marginalized voices in internet governance, whether financially or otherwise. Attending the UN IGF and other spaces dedicated to advancing internet governance is normally costly. Funding was already notoriously scarce for internet governance advocates and organizations. Moreover, current and ongoing geo-political turns towards authoritarianism, which have placed much of the public interest advocacy agenda under threat, are making participation even more precarious.

Gender identity and expression are rarely part of the conversation

The lack of participation in internet governance forums is also reflected in the remarkable absence of expansive gender-centred conversations at IGF. The public programming information made available by the UN division organizing the forum shows the dynamics of exclusion of trans people and how discussions around gender identity and expression are rarely part of the global internet governance community. Non-intergovernmental spaces dedicated to digital rights and overlapping with internet governance, such as RightsCon,⁵ do a better job at being more inclusive of transgender voices.

An exploratory analysis of the accepted workshops taking place during IGF (see table below) shows that gender issues have been discussed almost consistently over the last five editions, gender identity and expression is a topic rarely covered. The drastic reduction of workshops accepted in 2025 also impacted the space to discuss trans issues: of the 14 workshops covering gender and internet governance, none openly mentioned gender diversity or moved beyond categories such as women and girls.

Table 1: IGF Workshops discussing gender and gender diversity (2021-2025)

Year	2021	2022	2023	2024	2025
Location	Poland, Katowice	Ethiopia, Addis Ababa	Japan, Kyoto	Saudi Arabia, Riyadh	Oslo, Norway
Number of workshops	331	307	370	307	51
Workshops about gender	25	25	27	21	14
Workshops mentioning gender identity and expression	3	5	8	2	0

Source: elaborated by the author with information made available by the UN IGF and the Digital Watch Observatory.

Lack of studies on the specific internet governance challenges for trans people

Lastly, we have few studies and advocacy materials addressing the intersection of digital governance and trans rights, with many challenges and barriers still understudied. A few exceptions are works such as DeNardis & Hackl (2016) on [2S]LGBT[QIA+] internet governance, Langlois (2022) on digital governance and gender identity, Mayworm et al. (2024) on misgendering and moderation, Mishra & Kumar (2024) on binary barriers, Neuhaus et

⁵ See: <https://www.rightscon.org/>

al. (2022), on polarization and transphobia, Thach et al. (2024) on trans-centered moderation and Attard-Frost (2025) on transfeminist AI governance.

It is worth mentioning other important studies about the gender gap in internet governance citations (such as Rosa et al., 2024) and how it fits into the limitations of compulsory cisgenderness in categorization (Ferreira, 2021). The Trans Digital Rights framework (Reia et al., 2025) was prepared as a response to the scarce trans-inclusive perspectives in digital rights and internet governance spaces and aiming to be another contribution to urgent matters of gender identity and human rights in digital policymaking. Expanding notions of gender in studies and being open about limitations are starting points, but the internet governance community needs to improve how it relates to and includes trans experiences and voices.

BUILDING MORE TRANS-INCLUSIVE INTERNET GOVERNANCE

It is possible to build more trans-inclusive internet governance spaces, theories and practices. It takes collective effort to set up rapid responses; in the long-term, these barriers are reflected in the remarkable absence of expansive gender-focused conversations at IGF and WDF.

Attard-Frost (2025, n.p.) shows us that grounding AI governance in transfeminist principles, such as “transformative change, fluidity, community, and resistance,” can be a step toward less harmful technology (eco)systems. Here, I bring these principles to internet governance and adapt them to the context of intergovernmental decision-making spaces:

- make UN spaces trans-inclusive by advocating and putting pressure on UN divisions and host countries to allow participants to use preferred names and pronouns, dropping titles, and ensuring the information from gender diverse individuals is protected so it will not be weaponized;

- create spaces and mechanisms that improve the support offered to gender diverse individuals, enabling their participation through respect for their gender identity and expression, funding programs to bring them to forums, and making the event more inclusive with all gender facilities such as bathrooms;

- work with trans rights organizations to build bridges between digital rights advocates, internet governance researchers and practitioners, and advocates for all letters in the 2SLGBTQIA+ rights;

- have working groups or coalitions led by and inclusive of trans people to address the specific challenges and opportunities the internet poses to gender diversity especially in a context of rising techno-authoritarianism;

- consistently make space for trans voices in the internet governance community, integrating their challenges into other discussions and to other issues faced by other marginalized voices;

- establish networks of care and work toward a more supportive internet governance community that considers the risks involved in debating gender identity, being trans on the internet, and support a more inclusive internet for all.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, non-binary people, Black people, people from the Global South, and other social groups, whose

voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. Despite the numerous limitations presented by name-based gender inference, in this paper, citations are distributed as follows: female names (57.4%), male names (19.1%), non-binary and gender-diverse people (12.8%), and institutional sources (10.7%). Of all names, at least 19.1% of the authors publicly identify as trans (including men, women, and gender diverse). Whenever available, we used each author's personal pages to verify which pronouns were used.

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DEMYSTIFYING AI IN THE FAVELAS: HOW PERIPHERAL ORGANIZATIONS ARE VYING FOR THE APPROPRIATION OF ARTIFICIAL INTELLIGENCE

Elena Wesley¹

INTRODUCTION

With the launch of generative AI to the general public in 2023, the topic became a common subject of conversation and part of people's daily lives, as they began using the tools to create text and images. Although usually seen as a disruptive innovation, artificial intelligence is the product of a long and complex historical process, with roots tracing back to thinkers ranging from Al-Khwarizmi in the 8th century to Ada Lovelace in the 19th century, who contributed the mathematical and logical structures underpinning what we now understand as algorithms.

Although rarely acknowledged in the common sense when it comes to technology, this origin indicates that artificial intelligence has not always been in the hands of white men and/or large corporations. On the contrary, it can and should serve collective interests, prioritizing them over corporate and market-driven agendas, and act as a tool for social transformation, particularly in contexts marked by inequality.

It is with this perspective that organizations operating in favelas and peripheries have adopted these tools. This article presents data_labe's experience in applying AI tools to investigate data about marginalized populations and in collaborating to democratize knowledge regarding these technologies among socially vulnerable groups.

AI AS A TOOL FOR SOCIAL JUSTICE

data_labe is a civil society organization founded in 2016 in the Maré favela complex in Rio de Janeiro, comprising a young, multidisciplinary team with roots in Brazil's favelas and peripheries. With the purpose of demystifying data culture and digital rights, the institution develops participatory methodologies, carries on research, and trains community leaders to democratize data access and sharing, centering its work on the fundamental pillars of race, gender, and territoriality.

Since 2021, data_labe has been applying artificial intelligence to data analysis and production processes. The first experience was linked to the "Why Me?" (*Por Que Eu?*) research project, which, given the lack of government data on the subject, tried to identify discriminatory biases in police stops in Brazil.

Given the higher number of responses from Black people compared to White people, it would not be possible to apply the logistic regression technique - a method widely used in statistics to estimate odds ratios associated with the outcome. Thus, the team turned to database balancing algorithms.

¹ Master in Digital Communication and Data Culture from Fundação Getúlio Vargas and is the communications coordinator at data_labe. <elenabwesley@gmail.com>

This technique made it possible to numerically equalize the racial groups without compromising the representativeness of the original characteristics, ensuring more reliable and fair analyses. Using AI, it was possible to calculate that a Black person is four times more likely to be stopped than a white person. Data generated by the “Why Me?” research underpinned the arguments presented by the Institute for the Defense of the Right to Defense, a partner of data_labe in the initiative, during the 2023 Supreme Federal Court vote on racial profiling.

In 2024, data_labe analyzed access to basic sanitation in municipalities in the state of Rio de Janeiro using data from the 2022 IBGE Census. For this study, the organization sought to test the hypothesis that municipalities with a Black majority population are also those with the lowest rates of access to sewage systems and treated water.

Detailed information on households, population, and census tract boundaries was used to create a georeferenced visualization emphasizing disparities in access to sewage systems and treated water, with a tool to filter these indicators by racial category. A color scale made it possible to intuitively identify the severity of sanitation conditions in each area. In order to enhance the analysis, the data team applied a clustering algorithm called K-means. This algorithm divides the data into clusters (groups) and organizes the elements so that each group is internally similar and distinct from the others. Thus, municipalities with similar sanitation profiles can be grouped together. Segmentation algorithms made it possible to clearly visualize how certain challenges are distributed and perpetuated in majority-Black areas, confirming the hypothesis of patterns of racial and territorial inequality in the State of Rio de Janeiro.

The methodology for analyzing and generating data on basic sanitation has been taught throughout 2025 as part of a training process for five community collectives based in the Rio Metropolitan Area. *Lab Cidadão*, as the project is called, brings together young activists and trains them in data production, enabling collectives to create their own local assessments based on either government databases or citizen-generated data. In this way, favelas and peripheral areas can expand the basic sanitation issue to encompass other rights denied to these groups by the State.

DEMOCRATIZING TECHNOLOGIES TO ENSURE DEMOCRATIC ACCESS

Despite their potential and promising uses, artificial intelligence technologies have risks. In the digital age we live in, where every aspect of social life is being transformed into data to drive new actions and behaviors based on the extensive collection of information (Lemos, 2021), debates about data extraction and mining, privacy, and surveillance are still incipient among the populations most vulnerable to experiencing them.

Authors from the Global South have contributed to this effort with a critical perspective on how data colonialism leaves already marginalized social groups even further subjugated by the logic of major technology corporations. South African Michael Kwet (2021) warns that digital colonialism could become a threat similar to classical colonization, as companies, predominantly from the United States, control data infrastructure and exploit labor in other countries. Ethiopian Abeba Birhane delves into the subject with the concept of “algorithmic colonization” (2020) and the understanding

that, by imposing its classification mechanisms and massive data collection, the Global North disregards local contexts and experiences, resulting in the reproduction of historical inequalities (2022).

It is from this perspective that a key area of data_labe's work has been to amplify and make processes for digital well-being and security more accessible, enabling marginalized social groups to use technology consciously and to be aware of their digital rights, and of the interests behind measures that seek to harm them.

One example of an initiative designed to help the people most affected by AI systems understand and participate in these discussions was the course "Demystifying AI: How to Democratize Artificial Intelligence in the Favelas." In this partnership with the Pulitzer Center and the Federal University of Rio de Janeiro (UFRJ), around 40 community communicators, students, and activists from Rio's favelas and peripheral areas discussed, alongside experts, what artificial intelligence is, how algorithms work, and how this technology impacts the daily lives of socially vulnerable groups.

The group's interest was driven by doubts that have become part of daily life with the rise of artificial intelligence, such as whether AI will eliminate jobs or how platforms manage to suggest ads for products mentioned in casual conversations. The training resulted in three products made available to the public that delve into how algorithms are not neutral (Bucher, 2012). These include the "Demystifying AI" guide, which covers the discussions in the sessions and reference materials, and two journalistic reports on the use of AI in hiring processes and predictive policing.

The products also contextualize the role of Brazilian legislation on the subject, such as the Civil Framework of the Internet, the General Data Protection Law, and the Artificial Intelligence Bill (PL 2388/23), which was making its way through the Federal Senate at the time. The lobbying by big tech companies directed at lawmakers, much like what occurred during discussions on the "Fake News Bill", shows the obstacles the general public, and especially socially vulnerable groups, face in gaining a voice and visibility amidst the narrative and ideological battles surrounding the adoption of these technologies. Despite the strong involvement of civil society organizations, such as the Rights in Network Coalition, the text approved by senators in December 2024 did not include a high-risk classification for AI-powered content recommendation systems. This weakness in the text shows the issues Tarcízio Silva (2022) raises regarding algorithmic racism, which extends far beyond the data collection process: without accountability mechanisms, recommendation systems, moderation policies, and visibility rules contribute to keeping vulnerable social groups at risk, groups already targeted by disinformation and hate speech in the digital environment.

CONCLUSION

In a just society, no private gain supersedes the public interest (van Dijck, 2018), even though technologies offer many benefits. Marginalized, traditional, and minority communities appropriating digital technologies is undoubtedly a social gain. However, more than mere users, these groups need to be protagonists in governance processes. As Sergio Amadeu proposes, "the current AI paradigm should not be thought of as universal (...) and can

be enriched by other worldviews and their techniques, which can coexist and inform one another” (Silveira, 2025, p. 21).

Achieving shared responsibility, a goal requiring the collaboration of all stakeholders, demands that marginalized populations possess basic knowledge of artificial intelligence so they can interpret what is at stake regarding the use of AI in various areas of daily life.

These social groups must also be included in debates about the mitigation of algorithmic biases and errors, given that, in many cases, they are the primary victims of the violations caused by them. Monitoring, measurement, and transparency must be non-negotiable mechanisms for AI governance, as must the inclusion of diverse contexts, perspectives, and forms of knowledge.

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THE AI ASSET TIME MACHINE: INFRASTRUCTURAL OWNERSHIP AND THE NEW GRAMMAR OF VALUE

Lorena Regattieri¹

INTRODUCTION

In BlackRock's² 2024 letter to investors, artificial intelligence appears integrated into the firm's asset management apparatus, alongside "Aladdin"³, BlackRock's technology platform for investment management and risk analytics, where "active asset allocation, security selection and risk management" are named as the elements of long term returns, fixed income is positioned as an opportunity in a more volatile interest rate regime, and AI is said to be "propelling performance" in systematic investing. The same passage places "Aladdin" at the center of this arrangement, given that demand for "integrated data, technology and risk management" is expected to grow across asset classes through a platform that already organizes portfolio decisions for a vast ecosystem of users.

In this narrative, meaning already carries power, what Muniesa and Ossandón (2023, 3) describe as "the power to signal, to justify and to propel."⁴ Valuation is therefore not arithmetic alone, it is semiotic and dramaturgical work, a practice that gives form, direction, and credibility to the future it names. When computational demand is projected as inevitable, the projection does more than forecast a market. It helps assemble the contracts, expectations, and investment conditions through which that market can begin to exist. Doganova (2024) extends the point to time, reading the discount rate as a political technology that holds futures to be worth less in proportion to their distance from the present, and spreads that devaluation unevenly across geographies.⁵

¹ Phd Communication and Culture at Federal University of Rio de Janeiro (UFRJ), member Green Screen Coalition, co-organizer Earhkeepers. More info: lori@eco-midia.com

² BlackRock is a U.S.-based global investment manager and financial technology provider. In the context of AI infrastructure, its role extends beyond conventional asset management. In 2024, BlackRock completed its acquisition of Global Infrastructure Partners, creating a large infrastructure investment platform across private-market equity, debt, and related investment solutions. Also in 2024, BlackRock, GIP, Microsoft, and MGX launched the Global AI Infrastructure Investment Partnership, later renamed the AI Infrastructure Partnership, to invest in new and expanded data centers and the energy infrastructure required to support them. In this article, BlackRock is therefore treated as a valuation actor whose partnerships with technology firms, sovereign wealth funds, private capital, and energy companies help translate projected AI demand into investable claims over data centers, energy systems, and related enabling AI sector infrastructure.

³ Aladdin is BlackRock's proprietary investment management and risk analytics technology platform. It integrates portfolio management, trading, operations, compliance, accounting, data, and risk oversight across asset classes. BlackRock describes Aladdin as a multi-asset platform for risk analytics and investment workflows, and has increasingly incorporated AI-enabled analytics, automation, and generative AI tools into the Aladdin ecosystem. More info: <https://www.blackrock.com/aladdin>

⁴ Fabian Muniesa and José Ossandón, "Valuation as a Semiotic, Narrative, and Dramaturgical Problem," *Valuation Studies* 10, no. 1 (2023): 3.

⁵ Liliana Doganova, *Discounting the Future: The Ascendancy of a Political Technology* (New York: Zone Books, 2024).

These dynamics converge in a configuration identified as the AI asset time machine, where computational speculation generates uncertain futures from data captured through platform ownership and financial positioning, where logistical infrastructure arranges territory and population for extraction along principles with a long colonial history, where financial discounting converts those uncertain futures into present asset values, and where territorial reorganization moves the state from a regulator in the public interest toward a guarantor of the conditions that sustain asset valuation.⁶

The analysis traces these dynamics through the Casa dos Ventos and ByteDance TikTok data center under construction at the Pecém Industrial Zone in Caucaia, Ceará, Brazil. In Pecém, Ceará, Brazil, Casa dos Ventos, which is majority-owned by TotalEnergies, signed agreements with a tenant whose identity stayed hidden until Intercept Brasil named ByteDance, a concealment that foreclosed the consultation brazilian and international law require for the Anacé indigenous people.⁷ The Anacé indigenous people's right to land demarcation waits as the conditions for future computation are assembled around them. Reading BlackRock and Caucaia together holds the global formation of AI infrastructure finance dominance and its territorial landing in the same frame, where ecological systems, indigenous and communities livelihoods, and institutional governance become elements of valuation.

AI AS VALUATION DEVICE FOR INFRASTRUCTURE: CAPITALIZATION, SECURITIZATION, AND ASSETIZATION

Birch and Muniesa (2020) set out several features that distinguish the asset form⁸. Assetization locates the asset form in arrangements that make something ownable, controllable, tradable, and capitalizable as a stream of income. Infrastructure enters that form when the conditions that allow it to operate are stabilized as legal, contractual, and regulatory claims over future flows, so that land access, grid connection, power supply, water authorization, network capacity, and tenancy become part of the same revenue architecture. A data center can be valued before it processes computation because its worth is attached to the durability of those arrangements, to the extent that future use can be governed in advance through contracts, permits, fiscal treatment, and enforceable rights.

Value in this form is extracted less through making anything than through controlling access to it, the rentiership Birch (2020) places at the center of the political economy of AI.⁹ Rent names the return attached to a position that cannot easily be reproduced or competed away, and infrastructure becomes rent bearing when the rights that organize its operation also restrict who may use the systems it controls. A data center earns through the sale of computational capacity, yet that capacity is secured by positions over grid connection, power supply, water authorization, land, and regulatory exemption, each of which limits access to resources that remain socially and ecologically shared.

⁶ Stefano Harney and Fred Moten, *The Undercommons: Fugitive Planning and Black Study* (New York: Minor Compositions, 2013).

⁷ Intercept Brasil, "A Boiada da IA," investigative series, 2025.

⁸ Birch and Muniesa, *Assetization*, 5. The four mechanisms drawn on here compress the several aspects of the asset form that Birch and Muniesa set out.

⁹ Kean Birch, "Technoscience Rent: Toward a Theory of Rentiership for Technoscientific Capitalism," *Science, Technology, & Human Values* 45, no. 1 (2020): 3–33.

Capitalization is at once a technical and a cultural process, working through the valuation practices that consolidate the conditions under which things come to function as assets worth investment (Muniesa; Doganova; Ortiz, 2017).¹⁰ When the Investment Institute publishes projections of exponential AI growth, the reports do not record demand that already exists. They perform the demand curves and return expectations that institutional investors need in order to commit capital, and through that performance the build-out comes to look inevitable rather than chosen.¹¹

Discounting gives assetization a temporal architecture, because infrastructure is valued through anticipated flows that are brought into present calculation, while the lives, ecosystems, and collective arrangements exposed to future loss are pushed into a diminished horizon of worth. Doganova¹² (2018; 2024) reads the discount rate as a political technology because it couples distance in time with distance across social and geographical space, making future persons count for less than present ones while a single rate can flatten the uneven exposure of different territories to climate pressure, water scarcity, and ecological depletion. The rate therefore does more than translate future earnings into present value. It organizes decisions about which futures are made to count, which sacrifices can be treated as acceptable, and which entities are brought into existence because they have become investable.

The reward in such an arrangement accrues to ownership rather than to work, which Adkins, Cooper, and Konings (2020) identify as the logic of the asset economy. Decades of asset-price inflation, distinct from the wage and consumer-price inflation that monetary policy targets, have made the holding of appreciating assets, rather than employment, the determinant of who gains and who falls behind.¹³ An infrastructure asset follows the same logic, after its worth rises with contracted income and scarcity rather than with anything produced, and the appreciation flows to whoever holds the claim.

What makes energy and water assetizable in the first place is the capacity Cooper (2010) identifies to extract value from turbulence itself. In her account of the financial and environmental crisis, what circulates is less the exchange of equivalents than the transmutability of fluctuation, the conversion of volatile relations, whether in currency markets or atmospheric systems, into contracts that price the unknowable.¹⁴ A drought-prone grid and a stressed aquifer enter this logic as raw material rather than obstacle, because instability of water and power supply can be written into long-dated contracts and hedged. The Casa dos Ventos agreement prices two decades of generation against this uncertainty, and the data center's exposure to climatic and hydrological volatility becomes one more variable to be managed, recombined, and sold rather than a limit on what can be built.

Assetization gives the data center a financial form, yet the revenue it capitalizes has to be staged before it can be measured, which is where AI works as

¹⁰ Fabian Muniesa et al., *Capitalization: A Cultural Guide* (Paris: Presses des Mines, 2017).

¹¹ Muniesa and Ossandón, "Valuation," 3.

¹² Liliana Doganova, "Discounting the Future: A Political Technology," *economic sociology_the european electronic newsletter* 19, no. 2 (March 2018): 8.

¹³ Lisa Adkins, Melinda Cooper, and Martijn Konings, *The Asset Economy: Property Ownership and the New Logic of Inequality* (Cambridge: Polity Press, 2020).

¹⁴ Melinda Cooper, "Turbulent Worlds: Financial Markets and Environmental Crisis," *Theory, Culture & Society* 27, no. 2–3 (2010): 167–190.

a valuation device in Muniesa and Ossandón's sense of valuation as a semiotic power machine. The semiotic power of AI lies in its capacity to make one scale of computation appear as the future around which institutions plan, governments allocate, firms contract, and citizens are asked to adjust their sense of what infrastructure is for. That storyworld narrows the political imagination available to information management, making smaller scales of computation, public digital infrastructures, data minimization, technological sufficiency, and planetary boundaries harder to treat as legitimate futures.

THE DATA CENTER GRAB IN BRAZIL: FINANCIAL MARKETS AND TERRITORIAL RIGHTS

The land now prepared for the ByteDance TikTok data center sits inside a longer history of coastal reorganization in Caucaia and São Gonçalo do Amarante. In the 1990s, the state of Ceará expropriated land for the Pecém Industrial and Port Complex, assembling a deepwater port, a steel mill, a refinery project, and thermoelectric plants around an export oriented infrastructure regime. Communities living in the area, among them the Anacé, saw territory, residence, and circulation translated into the categories of an industrial perimeter, where the logistical needs of the port began to define which uses of land could remain and which forms of life would be displaced, compensated, delayed, or administratively contained.

Three decades on, the same perimeter holds Export Processing Zone II, where in January 2026 earthworks began on a twelve-hectare site for the Data Center Pecém, a partnership between Omnia DC and ByteDance announced as the largest private investment in recent Brazilian history at R\$200 billion, R\$50 billion of it in the first phase.¹⁵ The complex is planned across roughly twelve blocks with ten data halls, connected to eighteen submarine cables, cooled by industrial chillers, and sized to begin near 200 megawatts and expand toward a gigawatt. The Export Processing Zone regime and the federal Redata tax exemptions, which Ceará and Casa dos Ventos lobbied to extend to data centers, set the fiscal terms, converting a global data-processing operation into a tax-advantaged export of services.¹⁶

The facility's energy demand makes the scale of the project visible in relation to the country around it, with projected daily consumption comparable to the residential electricity use of 2.2 million Brazilians and greater than the daily household demand of almost every municipality in Brazil¹⁷. Water tells the same story in sharper relief, where the installation license issued in November 2025 authorized the data center to draw 144,000 liters a day, 7.3 times the 19,700 liters the company had declared in its preliminary application, granted on the firm's own statement of hydric sufficiency through two well permits of 72,000 liters each.¹⁸ Caucaia has declared

¹⁵ Marcelo Cabral, "Data Center Pecém inicia obras e marca maior investimento privado do Brasil," Portal IN, January 19, 2026.

¹⁶ Ana Ribeiro, "Pátria Investimentos e Casa dos Ventos promovem mega data center no Ceará, Brasil," DatacenterDynamics, July 8, 2025. On the federal Redata regime and Export Processing Zone benefits, see also IDEC, *Não somos quintal de data centers* (2025).

¹⁷ Data center do TikTok gastará energia de 2,2 milhões de brasileiros," Intercept Brasil, *A Boiada da IA* series, 2025.

¹⁸ "Ceará autoriza data center do TikTok a usar sete vezes mais água," Intercept Brasil, 2025. The installation license was issued by the Superintendência Estadual do Meio Ambiente do Ceará (Semace) on November 14, 2025.

drought or water-shortage emergencies in sixteen of the past twenty-one years, and the Cauípe aquifers sit in a basin the company's own simplified environmental report admits holds insufficient water for the population.

In August 2025, Cacique Roberto Anacé, backed by five civil society organizations, filed a representation asking the federal and state Public Ministries to investigate the data center and suspend its licensing, on the ground that works had begun beside the aquifer without the free, prior, and informed consultation that Brazilian law and ILO Convention 169 require.¹⁹ The Anacé from "Terra Tradicional" had spent two years building their own consultation protocol, approved in general assembly, setting out how they must be heard before any project touches their territory, and the data center proceeded as though that protocol did not exist.²⁰

In May 2026, the Federal Public Prosecutor's Office and the Federal Public Defender's Office²¹ issued a joint recommendation to the State Environmental Superintendence of Ceará, Semace, and Omnia WN Holding, requiring the licensing process to be adjusted before operation, with consultation of the Anacé and other traditional communities, review of the simplified environmental assessment, and reinforced hydrogeological, energy, archaeological, and socioenvironmental monitoring for a project whose continuous operation, water and energy demand, diesel generators, and cumulative pressures could not be treated as ordinary construction work inside the Pecém Industrial and Port Complex.

The data center enters a territory where the Anacé land claim had already been formally recorded, while official demarcation remained unresolved. By 2004, residents of Pecém communities who identified as Anacé had submitted a land demarcation claim to the Federal Public Prosecutor's Office in Fortaleza and Brasília, with support from the Indigenous Pastoral Ministry, the Land Council, the Archdiocese of Fortaleza, and Tapeba and Pitaguari allies. It produces legal insecurity for the Anacé, as each new licensing process can proceed through the ambiguity created by unresolved recognition. The data center consultation dispute belongs to this longer record, in which administrative delay becomes part of the condition through which land, water, and infrastructure are repeatedly organized before the territorial question is settled.

The Anacé have met that treatment with the reoccupation of land inside the contested perimeter and with a practice their leaders call planting, burying Cacique Antônio in the traditional land in 2019 so that his struggle would germinate in the territory.²² The reoccupations have drawn armed and hooded men into Cacique Roberto's house at Salgadinha, threats that placed his family under the federal human-rights defenders program, and

¹⁹ Pedro S. Teixeira, "Índigenas pedem que MP atue para derrubar licenciamento ambiental de data center do TikTok," *Folha de S.Paulo*, August 26, 2025.

²⁰ Organização Internacional do Trabalho, *Convenção nº 169 sobre Povos Indígenas e Tribais* (Geneva, 1989); and *Protocolo de Consulta e Consentimento Prévio*, *Livre e Informado do Povo Anacé da Terra Tradicional* (2024).

²¹ Ministério Público Federal. "MPF e DPU pedem adequações em licenciamento ambiental de data center antes do início da operação no Ceará." *Procuradoria da República no Ceará*, May 20, 2026, <http://www.mpf.mp.br/o-mpf/unidades/pr-ce/noticias/mpf-e-dpu-pedem-adequacoes-em-licenciamento-ambiental-de-data-center-no-ceara-antes-do-inicio-da-operacao>.

²² Queiroz Lima, doctoral thesis (2023); and Mota Filho, Siqueira, and Nóbrega, "E foi como um estrondo do mar."

still the villages hold. Their toré²³ carries the refrain “It sways, but does not give way”²⁴, meaning that the people sway but do not fall, and they speak of themselves as firm and strong on the land, a self-description that records four decades of pressure without collapsing into it. The struggle is carried by the assembly, not by the cacique alone.

What meets the asset time machine at Pecém, Caucaia, Ceará, Brazil is people with a four-decade record of holding ground on what the state keeps trying to clear. The financial logic that prices the aquifer and the land as inputs to a yield runs up against a territory whose value the Anacé and communities refuse to render in those terms, whose demarcation no discount rate can settle and whose governance authority no licensing shortcut can dissolve. The computation can model the water it will draw, yet it cannot compute the relation the indigenous Anacé holds to the land it draws from, a relation sustained through cosmos, singing, and the steady refusal to be relocated once more.

FINAL CONSIDERATIONS: SLOWING DATA CENTER EXPANSION FOR PLURIVERSAL FUTURES

The Intercept’s series “A Boiada da IA” carries forward a political memory from the Bolsonaro years, when Ricardo Salles, then Minister of the Environment, described a method of government as using a moment of distraction to push the herd through. The phrase condensed a technique of administrative speed, regulatory relaxation, institutional fatigue, and public inattention, through which environmental safeguards could be weakened and Indigenous and territorial rights made easier to bypass. In Caucaia, Ceará, that method returns through the way the data center moved through the state before the people most affected could know the project in its full form. Casa dos Ventos appeared in the licensing record, while ByteDance TikTok remained outside public view.

The licensing file, grid authorization, water permit, tenant secrecy, and investment announcement place the ByteDance TikTok hyperscale data center under construction in Caucaia, Ceará, inside an ownership chain before any server comes online. Cooper (2024)²⁵ reads the present as a return of patrimonial capitalism, in which shareholder dispersal gives way to founder-led firms, dual-class control, private credit, and asset managers that join family wealth protection to entrepreneurial command, allowing founders to settle into what she calls miniature oligarchies answerable to no public. The hyperscale data center expansion carries that ownership form

²³ Toré is a ritual and political practice associated with several Indigenous peoples in Northeastern Brazil. João Pacheco de Oliveira describes toré as a ritual that, in interethnic situations, makes visible diacritical signs of Northeastern Indigenous identity and marks boundaries between Indigenous and non-Indigenous worlds. In the Anacé indigenous context, Luciana Nogueira Nóbrega identifies toré, alongside the São Gonçalo dance and relations with the enchanted spiritual beings, as part of the practices through which Anacé identity, collective memory, and territorial belonging are affirmed. João Pacheco de Oliveira, “Uma etnologia dos ‘índios misturados’? Situação colonial, territorialização e fluxos culturais,” *Mana* 4, no. 1 (1998): 47–77; Luciana Nogueira Nóbrega, “O povo indígena Anacé e o Complexo Industrial e Portuário do Pecém, no Ceará: desenvolvimento e resistências no contexto da barbárie por vir,” *Revista de Ciências Sociais*, Fortaleza, 51, no. 2 (July–October 2020): 165–211.

²⁴ “Bambeia, mas não arreia”.

²⁵ Cooper, “Patrimonial Capitalism,” 11.

into infrastructure, through a founder-controlled platform firm, such as Pátria Investments, through Omnia, supplies the capital vehicle, and Casa dos Ventos turns renewable generation into a long duration contractual income projection.

Something in the elements of nature and livelihoods exceeds this asset form calculation, the incomputable that Parisi and Ferreira da Silva (2021) name, the surplus no model captures and no price resolves, which they read through a techno-poethics of refusal, a withdrawal from the grammar that would render life as value.²⁶ The Anacé gives this remainder a concrete form, their refusal states what will not be rendered as an asset, and it marks the edge where the machine's reach ends, the point past which the future cannot be priced in advance of the people who will live it.

Whether the first hall opens on the schedule the contracts have fixed depends on things the schedule cannot settle, the suspended license, consultation still owed, grid condition unmet, each of which returns time the asset had assumed it already held. The machine's power lies in pricing the future before the people who will live it can act, so every intervention that slows the hyperscale buildout, a filing, a refusal, a delayed licensing, a demarcation pressed forward, takes back some of that future from the discount rate. Slowing the expansion contests the speed at which futures are enclosed and on a terrain where the asset moves by fixing the future early, each intervention counts for the time it gains, and the time it gains is the ground on which pluriversal futures stay possible.

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²⁶ Parisi and Ferreira da Silva, "Black Feminist Tools, Critique, and Techno-Poethics"; and Parisi and Goodman, "Golemology, Machines of Flight, and SF Capital."

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BETWEEN SECURITY MODERNIZATION AND RACIALIZED SURVEILLANCE: THE USE OF FACIAL RECOGNITION IN PUBLIC SECURITY

Maria Vitoria Pereira de Jesus¹

INTRODUCTION

Ensuring the efficiency of police operations and strengthening security – these were the main arguments cited by public officials and decision-makers who opt to use facial recognition in public security. In the city of São Paulo, Mayor Ricardo Nunes recently unveiled the “prisômetro” (arrest counter), a display panel that projects data on the number of arrests made using smart cameras integrated into the Smart Sampa project (Passarelli, 2025). Meanwhile, in Rio de Janeiro, Governor Cláudio Castro highlights not only the hundreds of arrests achieved through the facial recognition system but also the technology’s importance in combating crime (Freire, 2025). Facial recognition systems in public security are known for their speed and efficiency in identifying criminals and fugitives, thereby aiding police in search and apprehension operations.

However, in recent years, various news reports (Gomes, 2019; Lee, 2019; Alencar, 2025; Araújo; Vespa, 2025) and studies (Stark, 2019; Nunes, 2022; Silva, 2022; Ruback; Carvalho; Ávila, 2022; Nunes; Lima; Cruz, 2023) have highlighted the possibility of wrongful arrests and the presence of racism and prejudice within this technology, which repeatedly identified Black people as criminals. In Rio de Janeiro, a survey conducted by CESeC (Center for Security and Citizenship Studies) between 2018 and 2022 found that 90% of the people arrested through the use of facial recognition were Black (Nunes, 2022). Thus, we ask ourselves: what is meant by the efficiency of using facial recognition in public security? Or, furthermore, upon which arguments or worldviews do initiatives opting to use this technology in public spaces rely? Our research makes it clear that the adoption of facial recognition by Brazilian cities rests on sociotechnical imaginaries (Jasanoff, 2015) that envision public security through the use of artificial intelligence technologies.

We propose to analyze the use of facial recognition systems in public security-systems increasingly being implemented in Brazilian cities to assist police in locating and apprehending criminals and fugitives, as well as to strengthen security in public spaces. Can facial recognition provide greater security for the general population? Could it reduce the incidence of erroneous police stops involving Black people?

METHODOLOGY

We draw upon Surveillance Studies to understand the controversies surrounding the adoption of technologies such as facial recognition. Furthermore, we consider Social Studies of Science and Technology to be funda-

¹ Graduate in Social Sciences. Master in Scientific and Cultural Disclosure for the State University of Campinas (Unicamp). Email: maria.vi.toriap959@gmail.com

mental to understanding the contradictions inherent in the implementation of Artificial Intelligence systems. We also consulted studies by Simone Browne (2015), Tarcízio Silva (2022), and Joy Buolamwini (2019), which address biometric technologies—and facial recognition systems in particular. These analyses enabled us to understand how this technology operates and the racial perspectives reflected in some of its outputs. Finally, to examine the worldviews underpinning initiatives that opt for the use of facial recognition in public security, we consulted news articles, reportage, and reports that provided relevant data on the key arguments used by public managers who decide to deploy this technology in major Brazilian cities.

MAIN RESULTS

Facial recognition systems are an application of Artificial Intelligence (AI) used to identify and recognize human faces. Identification occurs in real-time via algorithms that, based on facial biometric analysis, verify a match between the face captured by surveillance cameras and images stored in a database. During this analysis, the algorithms examine the characteristics of an individual's face to determine whether or not the person is wanted by the police. Therefore, the results are considered highly accurate and reliable, enabling the technology's use in police operations to locate and apprehend criminals and fugitives.

It is assumed that the database used for biometric analysis consists solely of images of criminals and fugitives. However, following a rise in the number of innocent people arrested via facial recognition, it became evident that the image database is not always kept up to date, resulting in individuals who have already been arrested still appearing as wanted (Albuquerque, 2019; Souza, 2024). Furthermore, studies reveal that wrongful arrests can also occur due to biases within the databases (Buolamwini, 2018; Silva, 2022), causing algorithms to flag people who share facial characteristics similar with the individuals whose images are stored in the database. In São Paulo, for instance, an 80-year-old man was arrested in 2025 after being mistaken for a fugitive rapist while tending the garden at a Basic Health Unit (Araújo; Vespa, 2025). This way, in light of such errors and embarrassment, the argument that facial recognition enhances public safety can easily be challenged, given that the failure to update databases and the phenotypic resemblance between certain individuals could leave some individuals feeling insecure, knowing there is a possibility of being unjustly arrested while going about their daily travels across the city.

Despite being aware of the potential for wrongful arrests, Brazilian cities and states continue to adopt and expand the use of facial recognition systems in public security. In the city of São Paulo, for example, the number of cameras equipped with facial recognition already exceeds 40.000². Meanwhile, in the state of Bahia, a video surveillance project plans to expand the use of facial recognition cameras not only in the capital but also into the state's interior. In both instances, public officials argued that using

² We aggregated the number of cameras in each region of the city and arrived at a total of approximately 50.000 facial recognition cameras distributed across the city of São Paulo. The design was based on figures found on the Smart Sampa website, in the "Map" section (find out where the Smart Sampa cameras are located). Available at: <<https://prefeitura.sp.gov.br/web/smart-sampa/#mapa>>. Accessed on June 15, 2026.

facial recognition would help reduce crime and violence. The technology is viewed as an ideal, efficient solution for bolstering security, yet this perspective overlooks the risks it poses to people moving through the city—particularly Black individuals.

The majority of people arrested via facial recognition are Black. They constitute the majority both among those wrongfully detained and among those who actually have outstanding arrest warrants. By all indications, the understanding regarding the technology's efficiency overlooks the possibility that its errors and biases can cause harm to Black individuals. However, in Salvador³, for example, a man lost his job after being unjustly imprisoned for 26 days due to a misidentification by the facial recognition system (Alencar, 2023). In our analyses, the recurring wrongful arrest of Black people is identified as algorithmic racism (Silva, 2022), stemming from biased databases and automated image analysis. Furthermore, we believe that in many cases, algorithmic racism may not only reinforce the racism present in our society but also perpetuate a “carceral imagination” (Benjamin, 2020)—one that consistently casts the same individuals (Benjamin, 2020) as suspects and wanted persons.

Thus, we believe that the use of facial recognition has been adopted by Brazilian cities without due consideration of the technology's potential errors and biases, or its safety for the general population. We understand that the implementation of this technology in Brazil represents the materialization of a sociotechnical imaginary (Jasanoff, 2015)⁴ of public security grounded in surveillance cameras and facial recognition. This imaginary presupposes the technology's neutrality while disregarding the risks it poses to the Black population. Consequently, we believe that the use of facial recognition—in the context of strengthening public security—can and should be challenged, given that it presents potential harms and embarrassment for Black individuals navigating the city. In light of this, we believe that a Critical Internet and Artificial Intelligence Governance can play a crucial role in ensuring that such questions are raised with due regard for human rights and individual well-being in the face of technological innovations.

CITATION DIVERSITY STATEMENT

Through this declaration, we join a collective effort to undo the structural epistemological erasure in academia against women, genderqueer people, Black people, people from the global South, and other social groups, whose voices are less heard due to bias in citations. We believe that transparency in relation to our bibliographies is essential to understand the present, and to change this structural condition in a joint and consistent way. In this paper, citations are distributed as follows: female names (47,05%), male names (41,18%), female-male names (11,77%), and institutional sources (0%).

³ Capital of Bahia.

⁴ For Sheila Jasanoff (2015), sociotechnical imaginaries “perform desirable visions of the future [...] achieved through advances in science and technology” (p. 4).

⁵ The concept of facial recognition as the realization of a sociotechnical imaginary of public security was developed in my dissertation, in which I analyzed the implementation of facial recognition cameras in Sao Paulo. The dissertation is available in the Unicamp Intellectual Production Repository. Available in: <<https://repositorio.unicamp.br/>>. Accessed on June 15, 2026.

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