

**THE COUNTER-HEGEMONIC SMART CITY: FROM THE SDGS TO THE RIGHT TO THE CITY**  
**CIDADE INTELIGENTE CONTRA-HEGEMÔNICA: DOS ODS AO DIREITO À CIDADE**  
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## Abstract

The discourse of smart cities, based on information and communication technologies, is fully inserted in the neoliberal urbanism model, by pursuing gains in efficiency and competitiveness and by advocating the central role of the private sector in the management of urban systems and in the production of urban space, to the detriment of public interest and the expansion of the right to the city. In parallel, planning and management proposals and practices that oppose this now hegemonic model have been adopted by several cities around the world. The paper aims to demonstrate the plausibility and relevance of narratives and practices of counter-hegemonic smart and sustainable cities, based on territorial intelligence and democratic governance, in which the production of urban space is guided by the pursuit of the SDGs and the expansion of the right to the city. For this, the methodology consisted of a recent literature review and the identification, recognition and establishment of theoretical-conceptual relationships in the discourses, narratives and hegemonic and counter-hegemonic practices of smart cities. As a main result, there is the development of the hypothesis that the expansion of the right to the city can materialize to the extent that the SDGs and their goals are partially or fully achieved.

**Keywords:** Smart Cities, Urban Space Production, Democratic Governance, Right to the City, Sustainable Development Goals

## 1 Introduction

Cities are made as a result of complex and intricate relationships between the communities that inhabit them, their built environments, natural ecosystems that surround them and the territories in which they are inserted. Even though the emergence of cities precedes the advent of modernity and the establishment of capitalism as the hegemonic economic system by millennia, it is after these episodes that cities begin to develop certain forms, functions and capabilities more quickly. As a result, we have been witnessing an increasingly urbanized world, characterized by stark socio-spatial inequalities, the widespread use of technological devices and climate changes caused by the rise in global temperature, in turn, a direct result of the models of production and consumption.

If, on the one hand, the Sustainable Development Goals (SDGs) of the UN 2030 Agenda support that cities have to be transformed into more inclusive, safe, resilient and sustainable environments, on the other hand, the technical-scientific and economic-business means suggest that they become more intelligent and connected through the use of Information and Communication Technologies (ICT). The discourses, narratives and practices of smart cities emerged with the fourth industrial revolution, in the midst of neoliberal policies, in which new technologies and large electronic and cybernetic structures became instruments capable of providing greater efficiency in the management of urban mobility, energy and security, for instance. New concepts — even if they seek to insert new themes related to economic, social and environmental issues, among others — do little to advance in terms of expanding the right to the city and changing the production patterns of urban space.

However, simultaneously with the hegemony of neoliberal policies adopted at the local level, planning and management proposals and practices understood as counter-hegemonic (insofar as they emphasize the need for more democracy, social justice and environmental responsibility, opposing current models) have been adopted by cities under the most diverse conditions. In any case, the different realities of cities around the world must be considered, whether due to geopolitical and economic characteristics, or due to scale and administrative and institutional capacities. Brazilian cities — small, medium and large, for example and in general — coexist with deficits in sanitation and housing, transport and mobility, green areas and public spaces, but also with deficits in business, work and employment, health and education. On the other hand, they possess various resources and capabilities, represented by physical-financial, social, human and institutional capital, which are rarely used to solve or reduce such deficits.

Over the last thirty years, Brazil has been substantially improving its legal and political-institutional framework related to cities, originated in the urban policy chapter present in its Federal Constitution of 1988. As part of this process, there must be mentioned the approval of the Statute of the City (Brasil, 2001), several sectoral policies (national policies on housing,

basic sanitation, urban mobility, solid waste, etc.) and the creation of the Ministry of Cities (2003), which, together, provided important instruments for the planning and management of Brazilian cities. However, despite the development of this complex framework, a significant gap between legality and reality still endures. Urban policy does not materialize in the urban planning and management practices of the vast majority of Brazilian municipalities: the master plans are utopian pieces without regulation and, equally or more discrepant, the right to the city remains a concept quite distant from citizen demands.

Faced with this panorama, it is important to confront the discourse and practices of smart cities with the reality of Brazilian cities — from small towns to metropolitan regions. It is not possible to achieve significant results in reducing urban violence, for instance, if investments in new monitoring technologies are not articulated with efforts aimed at reducing poverty, socio-spatial inequalities, lack of adequate housing or expanding opportunities for work, educational and cultural structures, etc. The paper intends to present a research agenda seeking to demonstrate the plausibility and relevance of narratives and practices of counter-hegemonic smart and sustainable cities that are based on territorial intelligence and democratic governance — in addition to the use of ICT — and that aim to expand the right to the city by inserting the SDGs in urban planning and management processes.

## 2 Neoliberal Urbanism and Smart Cities

The production of urban space has always been an arena of conflicts between public and private interests that are even more intensified in the current stage of capitalist development as the relationship between real estate and financial markets deepens and urban land becomes one of the main means of capital accumulation and reproduction (Harvey, 2014). With the crisis of the welfare states (and of the national-developmental states) followed by the rise of neoliberal governments, first in central capitalist countries and later on a global level, models and projects for the management and redevelopment of urban areas will be conducted under new ideological orientations. Such models will privilege policies in which the role and interests of the private sector will grow in importance, modifying the objectives and decisions regarding land use and occupation, as well as the dynamics of the production of urban space. There will therefore be a whole new context given by the exacerbation or overcoming of modernity that will be reflected in the mode of production and management of urban space and in the very conception of space, making the urban fabric more fragmented, discontinuous and unregulated.

Under this separation between urban space and social processes, a new school of urban planning will emerge based on entrepreneurship and strategic city planning, city marketing and spectacle urbanism. In general, and this is also valid for administrations of socialist and social democratic parties both in Europe and in Brazil, the “entrepreneurialism” of public administration will be present in an environment of economic-financial liberalization and globalization. In this context, urban planning and management will be strongly characterized by efforts towards attractiveness, competitiveness and inclusion of cities in the global economic system, obviously, to the detriment of a focus on managing urban services, improving the quality of life and the right to the city for the general population.

This new model of urbanism characterized as neoliberal must be understood as a representation of neoliberal policies in the planning and management of urban public policies. Such policies, as causes and consequences of a new phase of contemporary capitalism, by praising the practices of the private sector and making it difficult or even unfeasible for public planning and management processes in urban systems, will end up shaping new models of urban intervention in which private economic entities have great influence in the planning and production of urban space (Theodore et al., 2009). Most smart city projects are part of this process.

The term “smart city” arises as a result of the application of innovations brought by the fourth industrial revolution of intelligent automation, artificial intelligence, such as physical-cybernetic systems, big data, block chain, internet of things, cloud storage and a wide range of devices such as smartphones, cameras, sensors, routers, etc. Despite the need for local administrations to make use of computerization for efficiency gains and cost reduction in the management of urban systems, smart city projects have established themselves (and still do so) as marketing strategies in search of competitiveness. As an example, there is the increasing number of rankings of smart cities created and widely publicized in economic media and forums.

Over the last two decades, smart city concepts have evolved and become increasingly popular, as cities and climate change have become the main elements of discussion regarding the challenges of “sustainable” economic and social development. During this period, there has also been a hybridization of meanings and the inclusion of new agendas with different links and

variations, creating terms such as digital, connected, future, sustainable, resilient, liveable, inclusive cities, etc. Let us take two concepts relatively distant in time to understand this evolution. Hall (2000) emphasizes the gains in efficiency and management capacity that digitization adds:

A city that monitors and integrates conditions of all of its critical infrastructures, including roads, bridges, tunnels, rail/subways, airports, seaports, communications, water, power, even major buildings, can better optimize its resources, plan its preventive maintenance activities, and monitor security aspects while maximizing services to its citizens (Hall, 2000, p. 1).

In turn, Bouskela, Casseb, Bassi, De Luca and Facchina (2016) — in a document from the Inter-American Development Bank (IDB) entitled “Path to Smart Cities” — present the following definition:

A Smart and Sustainable City is an innovative city that uses Information and Communication Technologies (ICT) and other means to improve the quality of life, the efficiency of urban operations and services and its competitiveness, while ensuring that the needs of current and future generations are met regarding economic, social and environmental aspects (Bouskela et al., 2016, p. 1, our translation).

As can be seen, the idea of sustainability is used to insert a new feature, but even so, the focus is on gains in competitiveness and attractiveness. In general, this perspective has been widely disseminated and shared by technology companies, local governments and private consultancy firms. Obviously, the use of ICT is essential for improving the planning and management of urban systems, but it is also essential that innovation efforts are contextualized and articulated with the development and implementation of broader urban public policies which are committed to the public interest and with urban populations. In this sense, according to Angelidou (2014), a fallacy of innovative technological instrumentalization was created as a characteristic that transformed the term “smart city” into a very unclear buzzword.

### **3 The Right to The City in the Midst of the Production of Urban Space and the Smart City**

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Cities — as already mentioned, since the advent of modernity and capitalism as the hegemonic economic system based on private property and free market — have been going through successive phases and revolutions (Ascher, 2010) having arrived at the present time laden with the most profound and diverse contradictions depending on their scale, position in urban networks and on the map of world geopolitics. As a result of this process, a dialectical relationship between the city and the society that inhabits it, between the built space and the culture that gives it concreteness, ends up creating a whole new imaginary with new meanings and new ways of existing, thinking and living in urban areas. This new imaginary — supported by post-Fordist economic restructuring, the intensification of globalization and financial capitalism, the new ICT, the deterritorialization of identities and cultures, the renewal of urban forms and the emergence of new social structures — places us before an increasingly complex reality. This imposes an urgency on urban planners and managers to respond to social, economic and environmental challenges, intervene and regulate the production and reproduction of urban space (Soja, 2000).

In other words, the current stage of development of the world economic system — characterized by the intensification of capital mobility resulting from deregulation and financial innovations and by the reduction of barriers to investment in real estate assets — will provide a deepening of the relationship between financial and real estate capital. Cities, therefore, will be transformed into one of the main means for capital accumulation and reproduction and into a concrete space of class struggle, clash and political action (Harvey, 2014). However, even if the production of urban space is severely influenced by this movement of capital, at any time, it will be characterized as a result of the actions of various socioeconomic actors, groups and sectors in addition to the private sector. The State is also active in this process (through its various public entities) with a whole set of practices and procedures related to the elaboration and implementation of urban public policies and a diversity of social actors and groups that formally and informally affect the urban space, whether through dwelling, work activities and/or living in public spaces.

Nevertheless, how can we envision the materialization and instrumentalization of the right to the city and relate it to public interests? Even if implicitly, the right to the city is represented in the Brazilian Federal Constitution of 1988 and in other legal

statutes both by civil and political rights, by the right to democratic management of cities, by human, economic, social, cultural and environmental rights. In practice and conceptually, the right to the city has been built over the last fifty years, politically manifesting the positioning and claims of various social actors in the urban space and in the public sphere. This right refers to issues such as the spatial dimension of life, the experience of human habitat in the urban environment, the globalization-localization process and political decentralization, the demands of vast populations to enjoy the benefits of the city, as well as the search for a fairer, democratic and politically more participatory society (Jaramillo et al., 2008).

In other words, it is a concept that eminently manifests a political character that is under construction as an object of positioning and mobilization by various social actors in the public sphere and space. It is done as a synthesis, as a complete right in a spatial and societal way. As an ideal, complaint and demand (Lefebvre, 2001; Harvey, 2014), the right to the city is, in a sense, more of a claim than a legally enforceable right. From another angle, the right to the city can be understood as the quest to guarantee the effective fulfillment of human rights to all citizens in the urban space — to their respect, protection and promotion. It is clear, however, that the concept of the right to the city needs to be better developed, mainly with regard to its design and legal application. The materialization of civil, political, economic, social, cultural and environmental rights over urban space still leaves the term very vague in relation to the right to private ownership of space, which is already a very common object in the legal field.

A possible way of materializing the right to the city will be the internalization of the principles and guidelines of the development agendas (not disregarding the use of new technologies) in the processes of urban planning and management. In this sense, the concept of a smart city cannot be an end in itself, but must include systems, instruments and indicators (linked to the New Urban Agenda and the SDGs, for example) to achieve the goals proposed by the different plans. New technologies, in turn, can and must become an inseparable part of public policies for security, mobility, sanitation, housing, economic development, education, health, but they cannot only occasionally affect a given urban system.

Faced with the need for joint solutions to complex urban problems, the discourse and debate on smart cities cannot be based on the notion of “solutionism” (Morosov; Bria, 2019) but on the use of such technologies to improve the processes of urban planning and management built politically and institutionally by various social actors over time. On the other hand, the insertion of such technologies, their management and ownership, as well as the data they generate, need to occur in a regulated manner and as part of a sustainable, multisectoral and multidimensional development strategy. In Barcelona (Spain), according to the aforementioned authors, a plan was launched in 2017 with citizen participation (and an articulation between several multisectoral actors) based on the ideas and processes of a democratic digital city, open data and common goods built from the bottom up. With the aim of generating very well-defined social benefits and public returns, the city encourages the involvement of micro and small companies, in addition to innovation agents, with a view to developing “digital services and solutions that meet the needs of citizens” (Morosov; Bria; 2019, p. 99, our translation).

Several other cities have been developing projects and programs based on the use of ICT (such as applications and digital platforms) seeking to provide greater civic engagement and popular participation in urban planning and management processes, as is the case of Belém (in northern Brazil), Bogotá (Colombia) and Nanterre (France). In these terms, multisectoriality should manifest itself through efforts that presuppose technical-political arrangements between governments, population (communities and organized civil society), academia and the private sector to diagnose, design and implement better and more intelligent public policies. Hence, the concept of sustainable development — built over the last few decades and expressed in the commitments and action plans of the 2030 Agenda, in the New Urban Agenda and in the Paris Agreement — must be translated, at the local level, into public policies for human, social, economic, urban and regional development.

Quite different ideas, although not competing, from the proposals to incorporate artificial intelligence, automation, internet of things and a set of electronic devices to optimize the municipal management of urban systems. Or rather, not competing insofar as intelligent systems do not perform functions and roles proper to the political-democratic apparatus and do not use the data generated for non-public purposes. Therefore, an accurate analysis of the set of discourses, narratives and practices of smart cities, their intentions and results in relation to the improvement of the quality of life of urban populations, the appropriation of technologies and the benefits generated is needed. At the same time, it also urges the consolidation of

counter-hegemonic positions that propose new objectives and new indicators for smart cities, such as expanding the right to the city, strengthening territorial intelligence and democratic governance, and using the SDG tools as indicators of process.

#### **4 Collective Territorial Intelligence and Democratic Governance as Assumptions of the Smart City and Sustainable Development**

Territorial intelligence and democratic governance are two complementary processes that tend to feed back and that are established as *sine qua non* conditions for the structuring of a smart city and its sustainable development project. Territorial intelligence refers to the management of the knowledge necessary to understand the dynamics and territorial structures to guarantee and boost the development of such territory (Ortoll, 2012). Democratic governance, in turn, presents itself as a process and as a capacity for articulation and organization of the territory, leveraging internal resources and taking advantage of external opportunities in favor of the development of the city and its territory. For Esteve (2009):

Democratic governance is the art of governing the territories of the new relational government, typical of the knowledge society, whose object is the organization and action capacity of a society; its main means is relational or interdependence management and its purpose is human development (Esteve, 2009, p. 60, our translation).

Territory is understood as a section of the earth's surface that presents at least three attributes: i) as a natural territory represented by the primary elements of nature; ii) as an equipped territory, the result of human intervention, characterized by productive and infrastructure systems; and iii) as an organized territory in which a community recognizes itself as such and regulates itself through legal-institutional and political-administrative frameworks (Boisier, 1999). In turn, intelligence (in its multiple meanings in the fields of cognitive, psychological, biological, sociological, economic, geopolitical and scientific) — as a set of information, knowledge, protocols and procedures specific to a given territory — can express diverse and even contrasting notions. González Arellano (2014) suggests the idea of collective intelligence as a set of cognitive attributes shared by a group and that is strengthened as its skills are mobilized, which, for us, refers to different conceptions of social capital.

Miedes Ugarte (2009) understands that the concept of territorial intelligence emerges in parallel with the changes that have occurred in the capabilities of territorial governance resulting from the processes of globalization and political decentralization and the transition to the knowledge society. With the knowledge society and the development of ICT, the idea of “hybrid territories” arises as a result of the fusion of a physical-geographical dimension and a digital dimension (Bertacchini; Depréz; Rasse; 2014) that greatly expands the possibilities of communication and collective collaboration now remotely. Such an idea allows us to imagine “a new territorial paradigm based on knowledge, learning and new technologies” (Fernandes, Gama, 2009/10, p. 1, our translation). For these last researchers, it is urgent to create an organization model for local and regional knowledge systems that explore the concept of “intelligent territory”.

In another way, Girardot (2009) states that territorial intelligence expands the scope of economic intelligence by covering all dimensions of sustainable development (social, cultural, economic, environmental, among others) aimed at promoting objectives of “democratic territorial governance”. This, according to González Arellano (2014), can be defined by three basic components: i) a cognitive component, as a way of understanding the territory; ii) a sociopolitical component, which encompasses negotiations in the political arena; and iii) a technological-organizational one, composed of networks of actors and tools that operate in the territory. We could also explore other related concepts of public governance and collaborative governance very close to the sociopolitical aspect, but we would extend beyond the objectives of the paper, meaning that collective territorial intelligence and democratic governance, for the wide range of studies, are placed as assumptions for the organization of an intelligent territory — and as a consequence of an intelligent city — that seeks sustainable development.

#### **5 The Paradigm of Sustainable Development and the Smart Cities**

The “sustainable development paradigm”, in its broadest meaning, emerges as a reaction and criticism of the consequences of environmental degradation, unregulated urbanization and the increase in socio-spatial inequalities and is made as a result of a series of conferences, declarations, protocols, letters and agendas carried out over the last fifty years. As a response to the worsening of the negative effects of human actions on the environment and the maintenance of poverty at a global level,

from the 1970s onwards, the international community — led by the UN and some of its subsidiaries — would carry out a series of debates and studies criticizing the current development model. Since 1972, with the publication of the report “The Limits to Growth” and the United Nations Conference on the Human Environment, the international community has been improving its commitments and establishing objectives, targets and indicators with a view to modifying and/or adapting the standards from production and consumption to a new matrix that is socially fairer, culturally more diverse and has less impact on ecosystems and the global climate.

As a result of the improvement of principles, guidelines, analysis and management instruments, the economic, social, environmental and urban agendas have been embodied, in recent years, in the 2030 Agenda with its Sustainable Development Goals (2015), in the Paris Agreement (2015) and in the New Urban Agenda (2016). The 2030 Agenda is an action plan that aims to: i) eradicate poverty and hunger; ii) protect the planet from environmental degradation and restrain climate change; iii) ensure prosperity through economic, social and technological progress; iv) promote peaceful, just and inclusive societies; and v) mobilize the necessary means to establish global partnerships for sustainable development. Its seventeen SDGs with targets and indicators have the function of specifying and instrumentalizing public policies and private actions seeking to improve current conditions by 2030.

The Paris Agreement was established as a commitment of one hundred and ninety-five countries at COP21 (Conference of the Parties on Climate Change) to retain the temperature increase by a maximum of two degrees Celsius (compared to pre-industrial levels) by reducing the generation of greenhouse gases through public actions and policies. In turn, the New Urban Agenda proposes adapting cities to be more livable, healthy, safe, inclusive, sustainable and resilient to natural phenomena through planning processes, legislation and local economic policies. It is important to note that the New Urban Agenda, being subsequent to the two other commitments, incorporates its principles and considerations, in particular those relating to SDG 11 of making cities and human settlements inclusive, safe, resilient and sustainable. The same happens with the preparation of the Brazilian National Urban Development Policy, now in progress, which led to the establishment of a national agenda for the formulation of the Sustainable Urban Development Goals as a way of creating a political agenda in search of a Brazilian model for sustainable urban development (GIZ, 2021).

So, we question the plausibility and relevance of using the SDGs with their goals and indicators by cities that intend to be smart as a subsidy to planning and management instruments in search of expanding the right to the city. This is because the SDGs and the set of development agendas cover a variety of topics related to the fulfillment of this right, as well as internalize the guidelines and principles of sustainable development beyond SDG 11. Although such agendas and commitments work with defined goals and deadlines, it is highly likely that they will be renewed or improved when opportunities arise to insert demands that are little considered and to strengthen territorial capabilities — intelligence and governance —, as stated by González Arellano (2014).

## 6 Final Considerations

Cities — municipal governments, communities, structures, systems and territories — are produced and reproduced as a result of private interests, public policies and planning and management processes that, in turn, are guided by discursive-ideological constructs and development paradigms. It is essential, then, that the hegemonic discourse, narratives and practices of smart and sustainable cities now in vogue are critically analyzed as well as encouraging the elaboration of alternative proposals.

Based on the assumptions presented throughout the paper, it is possible to develop the hypothesis that the expansion of the right to the city can take place to the extent that the SDGs are partially or fully achieved. It is also worth considering that the adjective “intelligent” for the city puts it under the responsibility of solving urban problems and/or problems that occur in the city and its surroundings. Therefore, territorial intelligence as a concept and as a set of knowledge accumulated in the territory and about the territory is immanent to the intelligence, sustainability and democratic governance of the city. The intelligence accumulated and practiced in the city, in addition to the use of ICT, will manifest itself in its social and economic practices that are increasingly aligned with sustainability, and the management and monitoring of the SDGs become fundamental in this process.

In these terms, it is necessary to establish narratives and practices of counter-hegemonic smart and sustainable cities based on territorial intelligence and democratic governance in which the production of urban space is guided by the expansion of the right to the city and the pursuit of the SDGs to the detriment of the reproduction of capital and the efficiency of the real estate, financial, technology products and services markets. More than the attribute *per se*, counter-hegemonic smart cities — as shown in Barcelona and other cities that accompany it — have sought to advance in the democratization of information, goods and services, questioning the neoliberal logic and reversing priorities and benefits produced by urban public policies.

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