THE BRAZILIAN CHARTER FOR SMART CITIES

SHORT VERSION

LF EDITORIAL

MINISTRY OF REGIONAL DEVELOPMENT
Minister Rogério Simonetti Marinho

National Secretary for Mobility and Regional and Urban Development
Secretary Sandra Maria Santos Holanda

Department of Regional and Urban Development
Director Francisco Soares de Lima Júnior

General Coordination of Support to Regional and Urban Management
General Coordinator Laís Andrade Barbosa de Araújo

Technical Coordination
Ana Paula Bruno
Denise Schuler

FEDERAL RURAL UNIVERSITY OF THE SEMI-ARID - UFERSA
TraDUS Project

Author
Ministry of Regional Development

Coordination
Almir Mariano de Sousa Júnior
Erico Przeybilovicz
Hiatiane Cunha de Lacerda
Lauren Cavalheiro da Costa

Title
Brazilian Charter for Smart Cities: Short version

Cover/Layout
Ruth Emny de Lima
Tâmara Nayanne de Oliveira Gomes

Ministry of Regional Development

THE BRAZILIAN CHARTER FOR SMART CITIES

Short version

Almir Mariano de Sousa Júnior
Erico Przeybilovicz
Hiatiane Cunha de Lacerda
Lauren Cavalheiro da Costa

(Technical editors of the short version)

LF EDITORIAL

Directed by
Federal Rural University of the Semi-Arid / Ministry of Education
National Secretariat for Mobility and Regional and Urban Development / Ministry of Regional Development

Scientific Committee
Ana Paula Bruno
Denise Schuler
Fernanda Capdeville Fajardo de Queiroz
Raquel Furtado Martins de Paula
Roberta Pereira da Silva
Sarah Habersack

Edição revisada segundo o Novo Acordo Ortográfico da Língua Portuguesa

International Cataloging Data in Publication (ICDP)
(Câmara Brasileira do Livro, SP, Brasil)

The Brazilian charter for smart cities [livro eletrônico]: short version / organização Almir Mariano de Sousa Júnior ... [et al.]. – São Paulo: Livraria da Física, 2021. PDF.

Outros organizadores: Erico Przeybilovicz, Hiatiane Cunha de Lacerda, Lauren Cavalheiro da Costa
ISBN 978-65-5563–166-1

1. Cidades inteligentes 2. Inclusão digital 3. Sociologia urbana I. Sousa Júnior, Almir Mariano de. II. Przeybilovicz, Erico. III. Lacerda, Hiatiane Cunha de. IV. Costa, Lauren Cavalheiro da.

21-93052 CDD-307.76

Índices para catálogo sistemático:
1. Cidades inteligentes: Planejamento: Sociologia urbana 307.76

Maria Alice Ferreira - Bibliotecária - CRB-8/7964

Editora Livraria da Física
www.livrariadafisica.com.br

CONTENTS

1. INTRODUCTION

The Brazilian Charter for Smart Cities is a democratic political document that expresses a public agenda for the digital transformation of cities. It was done collectively by people from various sectors of society. The objective is to help Brazil take a firm step towards better cities for people.

The Brazilian Ministry of Regional Development decided to propose and lead the process of drafting The Charter. This happened when the federal government understood the need to integrate the sustainable urban development agenda with the digital transformation process. To ensure this integration, The Charter expresses its principles, guidelines, goals, and recommendations around a unified concept for the digital transformation of cities. The drafting of The Charter was also supported by strategic partnerships: with the Ministry of Science, Technology and Innovation; with the Ministry of Communications; and with the ANDUS Project - Support to the National Sustainable Urban Development Agenda in Brazil. The ANDUS Project is the result of technical cooperation Brazil-Germany and is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Launched in March 2019, The Charter formulation process included internal and external discussion and formulation stages. In August 2019, the first workshop was held with the participation of more than 100 people from all sectors of society. These people worked in groups to produce content and recommendations. In November 2019, the groups met again in the second face-to-face workshop. International listening was also carried out, with mayors and specialists. In June 2020, the first consolidated version of the document was presented. In August 2020, the third workshop took place virtually with The Charter Community, and in September the document was placed for public consultation. In December of the same year, The Charter was officially launched.

This collective effort lasted almost two years and made it possible to prepare a document that encompasses multiple views and consolidates:

- A concept for smart cities in the Brazilian context.
- Five guiding principles and six guiding directives.
- Eight strategic goals and 163 action recommendations.

The Charter brings digital transformation into the urban environment and expands what is meant by smart cities. It is common to associate the term only with information and communication

technologies, without making a connection with the concrete problems of Brazilian cities. It is also common to associate it with specific technological solutions to urban problems, which do not seek to solve the real historical causes of these problems.

The heart of the Charter is the Eight Strategic Goals and their 163 Recommendations. But one should avoid reading this section as a formula. We invite people and local institutions from various segments to adjust goals and recommendations according to the context of each municipality. Only concrete actions in cities will improve people's living conditions.

The recommendations are targeted at key audience segments, observing the different competencies of each one. Collaboration is the way to both formulate and implement the agenda.

This short version presents the main ideas contained in The Charter. It is recommended to read the full document in Portuguese for those interested in learning more about the content.

Figure 1 - Overview of the concepts and agenda of the Brazilian Charter for Smart Cities.

Smart Cities in Brazil are:

- Safe, resilient, and self-regenerating
- Environmentally responsible
- Alive and for the people
- Articulators of different notions of time
- Conscious and act with reflection

Committed to sustainable urban development and digital transformation, in their economic, environmental, and sociocultural aspects that act in a planned, innovative, inclusive, and networked manner, promote digital literacy, governance, and collaborative management and use technologies to solve real problems, create opportunities, offer services efficiently, reduce inequalities, increase resilience and improve the quality of life of all people, ensuring the safe and responsible use of data and information and communication technologies.

- Attentive and responsible with their principles
- Inclusive and welcoming
- Diverse and fair
- Economically fertile
- Connected and Innovative

A concept that guides, inform, and inspire...

Five guiding principles

A systemic view of the city and the digital transformation	Respect for Brazilian territorial diversity, in its cultural, social, economic, and environmental aspects
Environmental conservation	
Public interest above all	Integration of urban and digital fields

Six guiding directives

Stimulate community protagonism	Promote sustainable urban development
Collaborate and establish partnerships	Build answers up to local problems
Promote education and digital inclusion	Decide based on evidence

And they structure...

Eight strategic goals

1. Integrate transformation into sustainable urban development policies, programs, and actions, respecting diversities and considering the inequalities present in Brazilian cities
2. Provide equitable quality internet access for all people
3. Establish data and technology governance systems, with transparency, security, and privacy
4. Adopt innovative and inclusive models of urban governance and strengthen the role of public authorities as managers of the impacts of digital transformation in cities
5. Foster local economic development in the context of digital transformation
6. Stimulate sustainable urban development financing models and instruments in the context of digital transformation
7. Foster a massive and innovative movement in public education and communication for greater engagement of society in the process of digital transformation and sustainable urban development
8. Build up means to understand and evaluate, continuously and systematically, the impacts of digital transformation in cities

Which are implemented through 163 action recommendations for key audience segments...

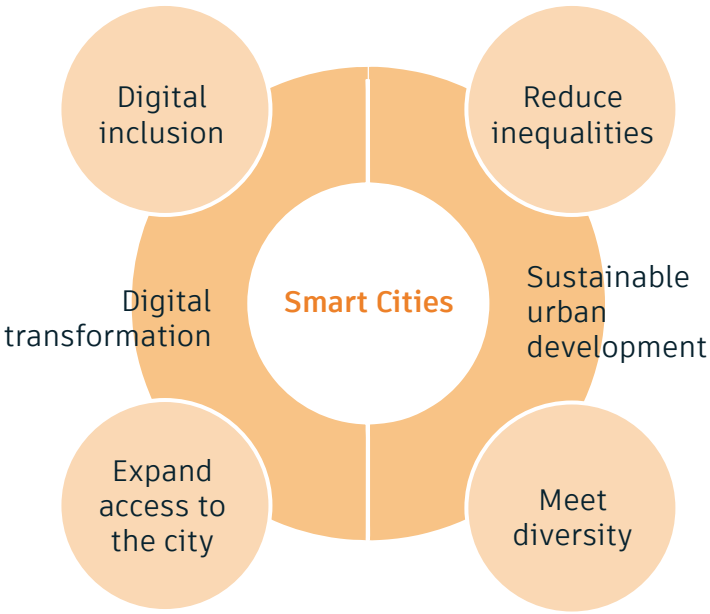
FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
Federal Government	State Government	Municipal Government	Vertical Intragovernmental cooperation	Horizontal Intragovernmental cooperation	Regulatory agency	Utility Companies	Telecommunications Companies	Private sector	Teaching and Research Institutions	Development Financial Agencies	Civil Society Organizations

1.1. WHY A BRAZILIAN CHARTER FOR SMART CITIES?

Cities are economic development poles and have great responsibility for the well-being of the population. They concentrate a large part of job offers, education, cultural facilities, public and private services. These characteristics make today's world face the challenge of generating and distributing the benefits and opportunities that come with urbanization. Only in this way will it be possible to improve the living conditions of all people who live in and need the urban environment. In this context, it is understood that cities and local governments have a decisive role in the global mobilization for Sustainable Development, which should reach all of humanity.

"Leaving no one behind" is the motto of the 2030 Agenda for Sustainable Development. The New Urban Agenda (NUA) took on the same motto for actions in cities and urban settlements. Both are international agreements. The countries that sign agreements commit themselves to implement the decisions, respecting national contexts. When Brazil signed the NUA, it promised to adopt a smart city approach. The Charter is a concrete action in this regard.

Figure 2 - Reasons that led to the elaboration of The Brazilian Charter for Smart Cities



REDUCE INEQUALITIES, MEET DIVERSITY AND EXPAND ACCESS TO THE CITY

About 85% of the Brazilian population lives in urban areas, and each of these areas has its own characteristics. In addition to the great territorial diversity, our cities are marked by socioeconomic and spatial inequalities of historical origin. For example, neighborhoods occupied by poorer people generally have worse living conditions than others.

Socioeconomic and spatial inequalities are structural results of the way the country developed and was occupied. In other words, they result from actions that took place decades and centuries ago. They appear in many forms and at many levels in the territory. They appear in the imbalance within the urban network, in small isolated locations, and Brazilian municipalities with difficult access. But they also appear in peripheral neighborhoods and informal urban settlements of large cities.

To a greater or lesser degree, all our cities suffer from inequalities in access to opportunities, goods, and services. This especially affects the lives of people and groups that are socially vulnerable: people with disabilities, people with low income, people of different sexual and gender orientations (LGBTQIA+), women, black people, the elderly, the youth, and children.

Inequalities prevent these people and social groups from exercising their full right to Sustainable Cities. In the Brazilian City By-law, the right to sustainable cities is defined as “the right to urban land, housing, environmental sanitation, urban infrastructure, transport, and public services, work and leisure, for present and future generations”.

In the Brazilian urban policy, “leaving no one behind” means guaranteeing the right to sustainable cities for all people. It means committing the city to reduce historical inequalities that make people and socially vulnerable groups lose access to opportunities, goods, and services. At the same time, it means structuring actions suited to the country’s wide territorial diversity, so as to “leave no municipality behind”.

Brazilian Smart Cities initiatives are urban policy actions, so they should adopt this same vision.

DIGITAL TRANSFORMATION, DIGITAL DIVIDE, AND THE POTENTIAL TO IMPROVE SOCIETY

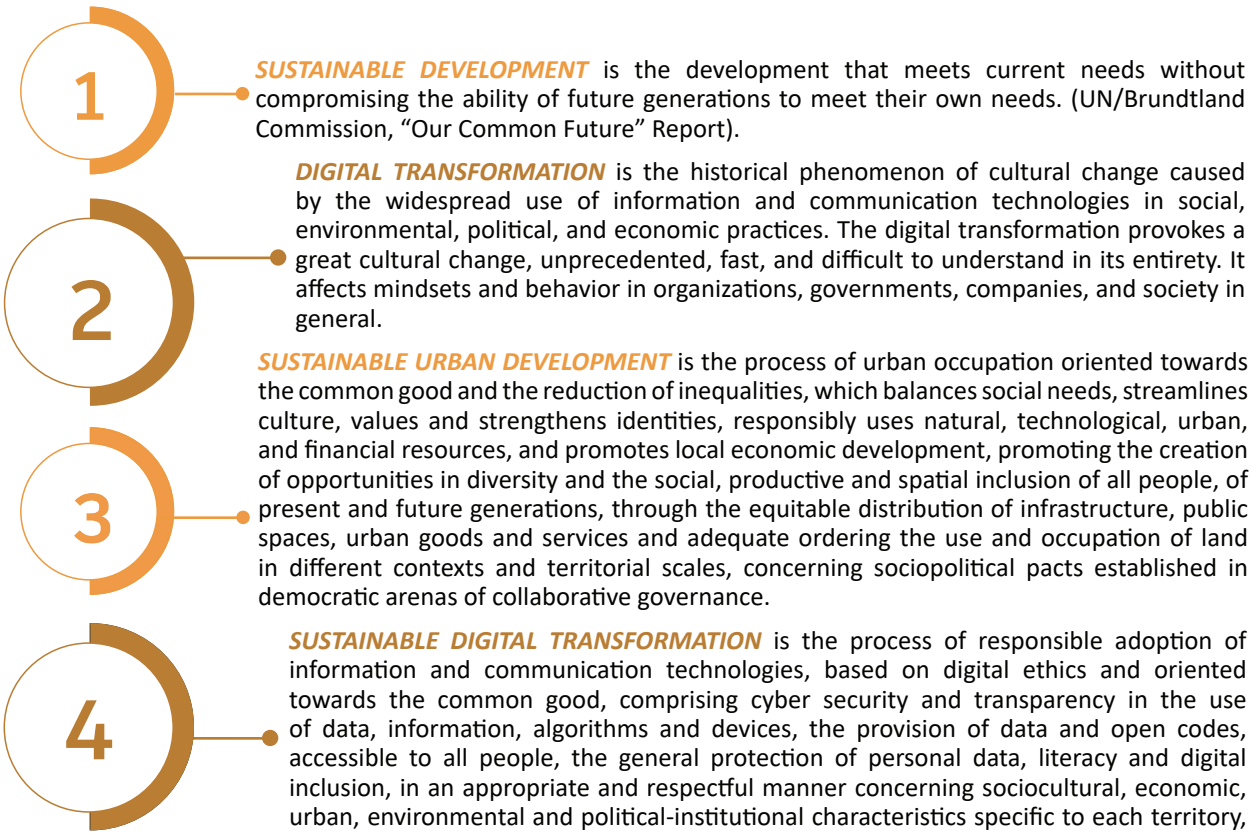
Smart city discussions and initiatives arise in the broader context of digital transformation. Everything is changing: everyday life, business, public and private organizations, dynamics, and territories. Political action, the formulation of public policies, participatory processes, forms of decision making, etc., have also changed. The gateway to this new world is digital connectivity, that is, access to quality information and communication technologies.

Many factors undermine the full right to digital connectivity. For example, distribution of infrastructure for digital inclusion, costs, different capacities to access and interact with digital devices, and different capabilities to understand how the internet works. These factors increasingly impact socioeconomic and spatial inequalities.

1. In the digital age, the right to sustainable cities is also conditional on the right to access the internet (Brazil Civil Rights Framework for the Internet).
2. From the broad perspective of digital transformation, it is necessary to understand the changes that digitalization imposes on urban space. But beyond that, it is also important to pay attention to the ways that urban space responds to these changes.
3. It is necessary to understand how the new relationships are confusing the very concepts and boundaries of the urban. Mainly, it is necessary to know the different aspects of the digital divide.

These are the views that The Charter assumes to present to the country a Brazilian agenda for smart cities. Digital transformation can generate positive impacts or challenges, depending on the context. The reality of each place also influences the potential for using information and communication technologies. It is necessary to consider the wide diversity and deep historical inequalities that mark our territory by reflecting and acting on digital transformation. Only then will it be possible for the digital transformation in Brazilian cities to be positive and sustainable.

Figure 3 - Four important concepts that were adopted in The Charter



1.2. TO WHOM THE CHARTER IS DIRECTED?

The objective is to reach a broad audience that works with urban development and digital

transformation or is interested in these themes. People who work inside or outside the public sector. It includes those who live in cities and are concerned about the impacts of information and communication technologies on their daily lives and the urban environment. In a more targeted way, The Charter addresses different audiences and segments presented in Figure 4. These audiences and segments are indispensable for the implementation and unfolding of this Charter. Therefore, the Strategic Goals and Recommendations of the common Public Agenda presented in this document are addressed to them.

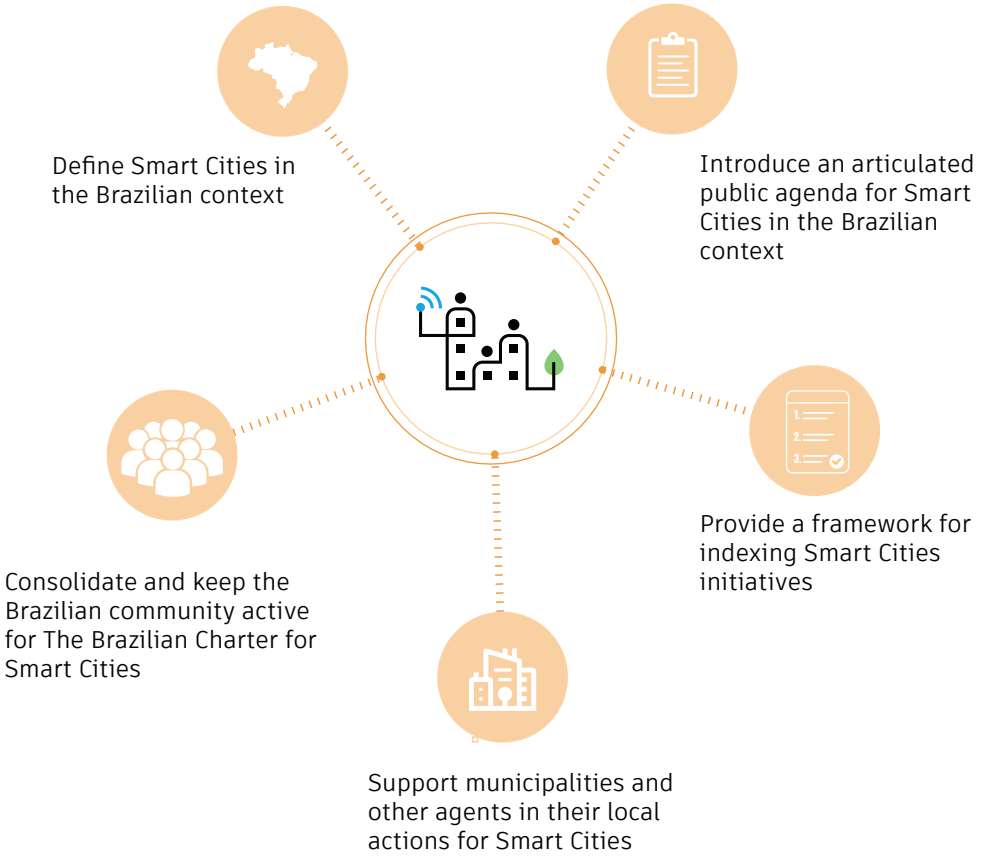
Figure 4 - The key audience segments to which the Strategic Goals and Action Recommendations are addressed to

Audience	Key segment
People responsible for making decisions in Brazilian municipalities and the Federal District: Mayors, technical and political agents. They are those who are responsible for implementing strategies and projects for smart cities at the local level. **People who are technical and political agents of national and state public bodies:** They are those in charge of articulating and integrating smart city initiatives, providing technical and financial support to municipalities. **Legislative branches at the three levels of government (federal, state, and municipality levels) and the judiciary branch (when it is their duty to act):** It is up to these bodies to articulate and reconcile general rules that make viable and provide legal security for sustainable urban development and digital transformation actions.	Federal Government (FG) State Government (SG) Municipal Government (MG) Vertical Intragovernmental Cooperation (VIGC) Horizontal Intergovernmental Cooperation (HIGV)
State structure control bodies: They are those who ensure the good execution of public policies, including cost-benefit relations and continuity of actions.	Regulatory agencies (RA)
Professional people from the technical and scientific fields in teaching and research institutes: These people are responsible for generating and disseminating knowledge, in addition to supporting local agents through academic extension activities and research.	Educations and Research Institutions (ERI)
The private sector, in its multiple forms of organization. Its role is to offer creative and innovative solutions so that cities can face relevant public problems, indicated and recognized by the local population and socially legitimized.	Utility Companies (UC) Telecommunications Companies (TC) Private sector (PS)
Civil society organizations. It is their role: to implement innovative projects, to exercise social control over public policies, to participate and ensure the quality of public debate, to fight for civil rights and against all forms of discrimination.	Civil Society Organizations (CSO)

1.3. WHAT WAS THE CHARTER DONE FOR?

The main purpose of The Charter is to support the promotion of sustainable urban development standards that take into account the Brazilian context of digital transformation in cities. For this, it takes on the challenge of integrating the urban development and digital transformation agendas. But not only. Integration must be guided by the perspectives of environmental, urban, social, cultural, economic, financial, and digital sustainability.

Figure 5 - The Brazilian Charter for Smart Cities Purposes



DEFINE SMART CITIES IN THE BRAZILIAN CONTEXT

The debate about smart cities has been around for a long time, but it never came to define a Brazilian concept for this expression. The lack of definition was perceived as a factor that undermines sustainable digital transformation in cities. So, The Charter Community chose to build its definition, instead of following one of the various conceptual lines existing in the country and the world. A convergent definition adapted to the reality, diversity, and complexity of Brazilian cities. (See Figure 1)

INTRODUCE AN ARTICULATED PUBLIC AGENDA FOR SMART CITIES IN THE BRAZILIAN CONTEXT

Digital transformation is so important for the future of cities that it determined the structuring of a common and comprehensive agenda. For this task, The Charter Community brought together various points of view on the diversity of Brazilian cities and existing initiatives. It articulated approaches and action fronts linked to smart cities. The result will make it easier for the actions of different levels of government and different sectors to take place in a coordinated and convergent manner in the territory.

PROVIDE A FRAMEWORK TO INDEX SMART CITIES INITIATIVES

There is a lot of knowledge about smart cities in Brazil and the world. Therefore, it is useful and necessary to systematize initiatives, in a continuous and incremental process. The Charter takes the initial step towards this systematization. It contextualizes the actions and discussions in the Brazilian scenario. It is the first document to bring together initiatives. It should be seen as a "mother product" that will generate "children products" based on the actions of the network of people and institutions linked to the theme. It is important to gather "children products" and make them easy to access. To this end, they should be indexed to the Strategic Goals and Recommendations of the common agenda. This will optimize the consultation, integration, and use of existing knowledge. The main initiatives that exist in the Federal Government are already indexed in The Charter.

"Children products" can have many formats and serve many purposes. Examples of "children products" are explanatory booklets, technical documents, projects, partnership models between the public and private sectors, academic productions, case studies, good practices, methodologies, legislation, and technical standards.

SUPPORT MUNICIPALITIES AND OTHER AGENTS IN THEIR LOCAL ACTIONS FOR SMART CITIES

People's living conditions will only change for the better if this public agenda for smart cities and the knowledge gathered here generate concrete actions. The recommendations of each Strategic Goal of The Charter were directed to the key audiences. This will make it easier for each audience to recognize their part in the effort to ensure a sustainable digital transformation in cities. The objective is to clarify what municipalities, institutions, and people need to do and where they can contribute.

CONSOLIDATE AND MAINTAIN ACTIVE THE BRAZILIAN CHARTER FOR SMART CITIES COMMUNITY

The Charter was drawn up by a large group of people and institutions. They donated time and knowledge to contribute to the country's development. In the process, innovative collective creation mechanisms were used to engage the group in the theme of digital transformation in cities. This process generated a collaborative network called The Brazilian Charter Community for Smart Cities. From now on, the Community must support and provide feedback for The Charter.

The Charter Community is a network open to anyone who wants to participate at any time. It is formed by people and institutions with specialized technical knowledge in different areas, as well as civil society organizations.

2. BRAZILIAN AGENDA FOR SMART CITIES

The Brazilian Agenda for Smart Cities, represented by the Strategic Goals and its respective Recommendations, is a guiding instrument, to be adapted on a case-by-case basis. It helps to understand the impacts and potential of digital transformation in each city. It also helps to decide paths, taking into account the vision of the future defined in each locality.

Digital transformation in cities is a multi-sector responsibility. But the public authorities must lead the political direction of the issue, especially at the local level. Mayors, their teams, and the legislative branch must work together and with the support of Federal and State governments to stimulate the participation of society and make a difference.

The Brazilian Charter Community for Smart Cities believes that a public agenda taken on by the State is capable of facing historical and contemporary challenges in cities and the country. This agenda must be coherent, continuous, incremental, accountable, and transparent. It must be built and implemented by engaging different levels of government, civil society organizations, and social segments.

The agenda is linked to the Brazilian concept of smart cities, is anchored in the principles, and should be guided by the guidelines already presented in this document (See Figure 1). The agenda is linked to the National Regional Development Policy (NRDP) and the National Urban Development Policy (NUDP). The objective of these policies is to reduce socio-spatial inequalities between regions, within regions, between cities, and within cities. Both are formulated, monitored, and evaluated by the Ministry of Regional Development. The Eight Strategic Goals are interrelated and the recommendations are interdependent.

Figure 6 - The Eight Strategic Goals and their respective number of Recommendations

2.1 STRATEGIC GOALS AND RECOMMENDATIONS

Here we present the set of 163 recommendations subdivided into eight Strategic Goals. For ease of reading, in the following diagrams, each column indicates which key audience segments the recommendation is made for. This allows identifying the performance by segment and the ecosystem of other people and institutions that may be involved in each recommendation.

STRATEGIC GOAL 1: Integrate digital transformation into sustainable urban development policies, programs, and actions, respecting diversities and considering the inequalities present in Brazilian cities.

Context: To reduce socio-spatial inequalities, it is necessary to consider territorial development from a broad perspective. This vision must take into account several aspects, especially the location, availability, and access to resources, infrastructure, essential goods and services, education, culture, and information.

Digital transformation brings opportunities to better understand and face Brazilian urban problems, which are historical. But untargeted technology actions can even increase longstanding inequalities, such as the lack or deficiency in access to basic urban services. Governments and society need to act so that technology meets the real needs of cities. Digital initiatives and solutions should be aligned with a strategic vision of sustainable urban development and the improvement of people's living conditions. In addition, they must be in tune with the great Brazilian diversity.

This process requires that society and local institutions are strengthened to take a leading role in adapting the digital transformation to their contexts. To this end, they must adapt urban development policies, programs, and actions to the new context of digital transformation. They should improve infrastructure, tools, and digital systems for the provision of quality public services.

1 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
1.1. Digital inequality and urban policy: Use quality internet access as an indicator of socio-spatial inequality in urban policy. Recognize by the indicator that there is a deficit in connectivity that must be addressed in policies, programs, projects, and actions for sustainable urban development and telecommunications.	✓	✓	✓			✓		✓				
1.1.1. Digital infrastructure as basic urban infrastructure: Plan and implement digital infrastructure as part of the infrastructure.	✓	✓	✓		✓	✓		✓	✓			

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

1 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
1.1.2. Digital divide information: Better understand the factors associated with the digital divide of vulnerable groups in each location.	✓	✓	✓						✓	✓	✓	✓
1.2. Territory vision for sustainable urban development.	✓	✓	✓	✓	✓				✓	✓	✓	✓
1.2.1. Urban typologies: Establish territorial typologies that support the understanding of urban diversity in Brazil. The typologies should help to understand the territory from different levels: municipal, supra-municipal (grouping of municipalities), and regional.	✓			✓						✓	✓	
1.2.2. Instruments e and methodologies for territorial diversity: Develop and adapt information, planning, management, and governance instruments and methodologies for sustainable urban development, considering different degrees of complexity.	✓	✓	✓	✓								✓
1.2.3. Contextual view: Encourage local action with a view of the context, providing tools to make it easier for municipalities to perceive their contexts and regional insertions, for integrated and articulated planning.	✓	✓	✓	✓								✓
1.2.4. A city´s future vision: Build the city's vision of the future in a participatory and inclusive way. Consider the perspective and specific impacts of digital transformation in the city's territory, the regional context, and local characteristics in economic-financial, sociocultural, urban-environmental, and political-institutional aspects. Establish this vision in municipal planning instruments.	✓	✓	✓	✓	✓				✓			✓
1.2.5. Sectoral articulation in the territory: Develop strategies so that urban development policies, plans and programs, and related sectors are integrated into the territory, at all levels of government. Strategies should emphasize the areas of urban planning, housing, basic sanitation, urban mobility, water security, disaster reduction, environment, and information and communication technologies.	✓	✓	✓	✓	✓						✓	
1.3. Digital Transformation and urban sector: Develop a methodology to map specific needs of urban sectoral policies that can be supported by digital solutions. Actions should include infrastructure and digital devices, as well as geo-referenced data and information, considering territorial diversity for the planning and implementation of projects and integrated local actions.	✓	✓	✓	✓	✓						✓	
1.3.1. Sectoral strategies for digital transformation: Develop sectoral strategies for digital transformation in cities, in the areas of urbanism, housing, basic sanitation, urban mobility, water security, disaster reduction, environment, and information and communication technologies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.3.2. Energy efficiency and circular economy: Develop projects, use mechanisms and technologies that increase the energy efficiency of infrastructure and urban buildings. Promote processes and develop solutions that incorporate the logic of the circular economy.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

1 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
1.4. Digital Transformation and the Environment: Develop and use methodologies, data, and indicators that respond to environmental and climate change. Act on the fronts of adaptation, prevention, and mitigation of these changes.	✓	✓	✓	✓	✓				✓	✓		✓
1.4.1. Digital devices in the urban environment: Stimulate the use of methodologies, data, and indicators, digital or not, to monitor and assess the environmental impacts caused by infrastructure and digital devices in urban environments. Promote responsible use of resources in technological modernization solutions for urban services.	✓	✓	✓	✓			✓		✓		✓	
1.4.2. Environmental instruments: Introduce the concept and develop green infrastructure projects in urban areas. Whenever possible, replace gray infrastructure with green infrastructure. Integrate the perspectives of ecosystem services and nature-based solutions into urban policy instruments. Stimulate the development of food-producing regions near urban centers. Use information and communication technologies to encourage responsible patterns of production and consumption and activation of the local economy.	✓	✓	✓				✓		✓	✓	✓	
1.4.3. Risks and vulnerabilities in urban space: Develop methodologies to identify and define risks and vulnerabilities in urban space, subsidize decision-making and develop contingency plans, based on data and information to increase the city's resilience.	✓	✓	✓							✓		
1.5. Digital transformation and urban policy: Develop, use and share digital solutions that help implement information, planning, management, and governance tools aimed at sustainable urban development, at different scales of the territory.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
1.5.1. Data and information for sustainable urban development: Formulate, implement, monitor, and evaluate urban development policies, programs, projects, and actions that are based on public and auditable data and information.	✓	✓	✓	✓	✓		✓			✓	✓	✓
1.5.1.1. Information and communication technologies for urban diagnosis and management: Use geoprocessing tools to better understand urban phenomena and to improve the management capacity of local governments. Incorporate data science engines like Artificial Intelligence and analysis of large amounts of data.	✓	✓	✓	✓	✓	✓	✓	✓			✓	
1.5.1.2. National information system for urban development: Identify, systematize and make available public data and information that are relevant to sustainable urban development.	✓			✓	✓						✓	
1.5.1.3. Data integration for urban policy: Promote the constant integration of sectors and institutions for the exchange of data, such as tax data, urban services, and real estate records.	✓	✓	✓	✓	✓		✓		✓			

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

1 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
1.5.1.4. Mapping of urban green areas and ecosystem services: Support municipalities and inter-federative bodies to map their urban green areas, assign financial value, and responsibly manage their natural resources and ecosystem services.	✓	✓	✓	✓	✓					✓		✓
1.5.1.5. ***Integrated territorial registries:*** Support municipalities and inter-federative bodies to prepare, review and integrate their territorial cartographic bases, real estate registers, or multi-purpose technical registers.	✓	✓	✓	✓	✓					✓	✓	
1.5.1.6. Collaborative mapping: Expand the use of collaborative mapping tools in public management as a strategy to mobilize knowledge and community engagement. They are strategic in the social control of public policies, especially to raise housing needs, common properties, urban and environmental, and cultural assets of collective interest. They should include assistive technologies in order to enable the participation of people with disabilities or reduced mobility. Favor the use of free and open-source platforms and tools, such as OpenStreetMap.			✓	✓	✓				✓	✓		✓
1.5.2. Sustainable urban development planning.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
1.5.2.1. Measures to achieve the vision of the future: Elaborate or review norms, policies, programs, and strategies to adapt them to the city's vision of the future, as established in the municipal planning instruments. Examples: Master Plan, Multiannual Plan, the "PPA".	✓	✓	✓	✓	✓				✓	✓		✓
1.5.2.2. Intersectoriality in urban planning: Build and consolidate an integrated vision of municipal planning based on sectoral planning instruments. Emphasize the areas of urban planning, housing, basic sanitation, urban mobility, water security, disaster reduction, environment, and information and communication technologies.	✓	✓	✓	✓	✓		✓				✓	
1.5.2.3 Inter-federative urban planning: Support integrated and intersectoral urban planning processes in metropolitan regions, conurbation, and municipalities that present interdependent relationships because they share public functions of common interest. These planning processes must be integrated by the elaboration of Integrated Urban Development Plans (IUDPs) or by the joint and simultaneous elaboration of Municipal Master Plans (MMPs).	✓	✓	✓	✓	✓		✓				✓	✓
1.5.2.4 Planning at the scale of urban projects: Develop, consolidate and disseminate methodologies to design projects at the intermediate scale of the city, such as regions, neighborhoods clusters, or other groupings of areas that are smaller than the municipal territory.	✓	✓	✓	✓	✓				✓	✓	✓	
1.5.3. Management and governance for sustainable urban development: See Strategic Goals 3 and 4.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 2: Provide equitable quality internet access for all people.

Context: Integrating the urban and the digital into public policies and territorial planning instruments is important, but this action must be accompanied by connectivity. Sustainable development depends on everyone having access to the internet and quality digital tools. Good digital connectivity determines social and productive inclusion and the fair distribution of opportunities. As a result, governments and the private sector should know the territories where access is precarious and correct this distortion, in addition to promoting people's digital literacy.

2 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
2.1. Right of access to the internet: Recognize and make effective the right of access to the internet for all people. Develop and implement infrastructure policies, programs, and projects. Include in these actions support infrastructure projects for telecommunications networks, essential for the provision of telecommunications and internet services. Also, include other aspects related to digital inclusion.	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓
2.2. Digital infrastructure for all people: Make possible the installation and maintenance of infrastructure for digital inclusion in regions of the country that lack this infrastructure and in municipal areas with low connectivity. Ensure digital inclusion in all cities and emphasize informal urban centers and remote locations.	✓	✓	✓	✓	✓	✓		✓				
2.2.1. Frequency bands notices: Predict compensation for the expansion of infrastructure for digital inclusion in frequency bands notices for telecommunications services. Prioritize service to areas that lack quality infrastructure and service to all cities and communities in the country. Municipalities should monitor and enable deployments resulting from the auction for frequency bands.	✓	✓	✓			✓		✓	✓			
2.3. Various means of internet access: Encourage and support the establishment of shared and community networks and other alternative means of connecting and accessing the Internet. These actions should be done including the use of digital radio and TV, local networks, and small Internet providers.	✓		✓			✓			✓	✓		✓
2.3.1. Local connection initiatives and digital solutions: Establish mechanisms with regulatory agencies to carry out studies, experiments, and tests on the allocation of electromagnetic spectrum bands for open use. The objectives are to democratize access to wireless communication, enable the development of local connection initiatives and enable the local development of digital solutions to community problems.	✓	✓	✓			✓		✓	✓	✓		
2.4. Confronting the digital divide: Promote solutions for the different factors of the digital divide in the universalization and democratization strategies of access to the internet and digital technologies	✓	✓	✓									

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

2 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
2.4.1. Digital inclusion of people with disabilities: Create and use solutions, develop and disseminate norms and procedures to increase the accessibility of people with disabilities to computing and the internet, in the provision of digital public services and other digital government initiatives.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
2.4.2.Digital inclusion from a gender perspective: Meet national goals to ensure gender equality in access, in skills use, and in production of information and communication technologies. Also, in the access and production of scientific knowledge, and information, communication, and media content.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
2.4.3. Digital Literacy: See Strategic Goal 7.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2.5. Urban-digital integration: Plan and implement municipal actions for digital transformation in articulation with local territorial planning.	✓	✓	✓	✓	✓			✓				✓
2.5.1. Sustainable urban development in national information and communication technology strategies: Integrate sustainable urban development and the challenges of digital transformation in cities in the National Strategy for Science and Technology and the Brazilian Strategy for Digital Transformation (E-Digital).	✓				✓							
2.5.2. Transparency in digital connectivity data: Provide digital connectivity data, such as broadband, mobile devices, and satellite internet, at intra-municipal scales, within municipal boundaries, and intra-urban, within urban areas. Provide data and statistics on access and complete services to the population related to digital public services. Ensure that the data made available can be georeferenced, in inclusive language, in a transparent and easy-to-use manner.	✓	✓	✓			✓		✓	✓			
2.5.3. Typologies for smart cities: Recognize the different characteristics of Brazilian cities even regarding access to information and communication technologies. Based on this recognition, treat municipalities differently in smart city initiatives.	✓	✓	✓	✓	✓							
2.5.4. Planning for "smart cities": Consider the determinations of the Master Plan when developing municipal strategies and plans for digital transformation. Consider the determinations of the Integrated Urban Development Plan. Align planning for "smart cities" with The Charter's recommendations and their developments in terms of norms, guidelines, and standards.	✓	✓	✓	✓	✓				✓	✓	✓	✓
2.5.5. Digital connectivity and integration of public facilities: Strengthen initiatives that integrate institutions and public facilities for teaching and research. To do this, form partnerships between institutions in order to provide digital infrastructure networks. Expand the model of Community Education and Research Networks to institutions and public facilities that serve other purposes.	✓	✓	✓	✓	✓				✓	✓	✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

2 Recommendations	FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
2.5.6. Free Wi-Fi: Provide free, secure, and quality Wi-Fi networks in equipment and public spaces, especially in remote and low-income areas. Seek to enable access to platforms and applications for essential services without consuming mobile data. This action should be aimed at vulnerable people and social groups, as a tool for social inclusion. Ensure the expansion of the frequency spectrum of use for new Wi-Fi networks with more capacity, faster, and more efficiency.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
2.6. Soil, subsoil, and airspace, urban furniture, and implementation of information and communication technology infrastructure: Establish norms and standards for the planning, use, and management of subsoil, soil, and airspace in municipalities. Also, establish norms and standards for the location and sharing of infrastructure for digital inclusion in cities.	✓	✓	✓	✓	✓	✓	✓	✓				✓
2.6.1. Integrated actions in the territory: Establish inter-institutional and inter-federative agreements for joint regulation, when it is the case. Establish as an independent public service the management of the undersoil, soil, urban furniture and air space, with a view to its occupation shared by the companies and responsible bodies for the public and private services that demand its use.	✓	✓	✓	✓	✓	✓			✓			
2.7. Expansion, structuring, and urban requalification projects: Predict and implement infrastructure for digital inclusion in specific urban expansion projects and urban requalification projects. Coordinate urban expansion, structuring, and requalification processes with actions to implement telecommunications infrastructure of mobile cellular and fixed broadband service operators. Strengthen the relationship between municipalities and telecommunications companies.			✓	✓	✓			✓	✓		✓	
2.8. Public lighting projects: Promote equal access to public lighting services in cities. In projects for the expansion and modernization of public lighting networks, prioritize public spaces of intensive use, neglected and unsafe urban areas, with rates of urban violence above the city average.	✓	✓	✓	✓	✓		✓		✓			
2.8.1. Sustainability in public lighting: Raise energy efficiency standards in projects to modernize and expand the public lighting network. On these projects, seek to reduce light pollution. Promote efficient service management through the adoption of digital solutions integrated into the network.	✓	✓	✓				✓	✓		✓		
2.8.2. Public lighting infrastructure use: Consider the potential use of the public lighting network as a support infrastructure for the provision of digital services. Seek this use, especially in projects for the modernization and expansion of the public lighting network. Ensure sharing under fair, reasonable, and non-discriminatory access to electricity distribution poles.	✓		✓			✓	✓	✓				

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

2 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
2.9.Internet of Things (IoT) Projects: Ensure cyber security and personal data protection standards across all components of the Internet of Things projects in urban areas. Ensure the origin and quality control of devices connected to the network through official certification procedures. Emphasize the guarantee of transparency, control, and alternative in automation processes. Also emphasize the guarantee of the right to privacy through data anonymization and other procedures, especially when there are video surveillance activities.	✓	✓	✓			✓			✓		✓	
2.10. Technical and financial support for connectivity: Offer solutions to deploy and maintain infrastructure for digital inclusion. This should be done through technical and financial support or other essential public service delivery mechanisms. Consider the governing capacities of Brazilian municipalities. Also, consider the socioeconomic conditions and location of the beneficiary population's housing. Foster and facilitate the articulation of municipalities and supra-municipal entities with telecommunications service providers.	✓	✓	✓	✓	✓			✓			✓	

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 3: Establish data and technology governance systems, with transparency, security, and privacy.

Context: Public policies and connectivity are basic elements, but insufficient for equal opportunities in the context of digital transformation. It is necessary to structure data governance systems and information and communication technologies suited to each context. Only from these systems will it be possible to integrate infrastructure, systems, tools, and digital solutions in the urban development of all cities.

Different governments and sectors of society must cooperate for the systems to work in an integrated, responsible, and innovative manner. With cyber security and personal privacy assurance. They must cooperate to provide an ethical digital environment that ensures shared and open data whenever possible and that guarantees legal protection for people.

3 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
3.1. Cyber security: Ensure cybersecurity on digital infrastructure, devices, systems, data, and information. Establish guidelines, standards, and procedures that assess, improve and validate the reliability of hardware, operating systems, personal access devices, and individual tools. General Personal Data Protection Law.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.2. General protection of personal data: Ensure the protection of personal data by fully adhering to the General Personal Data Protection Law (GPDPL). Respect the natural person's ownership of their personal data, while guaranteeing the fundamental rights of freedom, intimacy, and privacy. Ensure that the sharing of personal data complies with the principles of purpose and transparency. To enable these actions, establish standards and procedures that enable the safe and ethical development of innovative data-based businesses.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3.2.1. Local rules for the protection of personal data: Support municipalities in adapting rules and procedures to the General Personal Data Protection Law (GPDPL). Regulate with priority data processing in essential public services and records in digital services**.**	✓	✓	✓			✓						
3.3. Transparency in technology companies' algorithms: Encourage digital information and communication technology companies to have high standards of transparency about the criteria and assumptions they use in their algorithms. Enable and strengthen algorithmic auditing processes and foster the use of open-source or free software.	✓			✓	✓				✓			✓
3.4. Interoperability: Ensure interoperability when implementing information and communication technology solutions in governments, in inter-institutional initiatives, including public-private.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
3.5. Open Data Policies: Implement open data policies at all levels of government.	✓	✓	✓	✓	✓							

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

3 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
3.5.1. Administrative records: Collect, systematize, digitize, geo-reference, and make available data and information generated by executing public policies and providing public services, at all levels of government. Treat and anonymize sensitive data to enable its opening. All steps must comply with open data policies and existing interoperability standards for the level of government taking action.	✓	✓	✓	✓	✓							
3.5.2. Geospatial Data: Strengthen the National Spatial Data Infrastructure as a platform that facilitates the exchange of geospatial data. Establish the National Geoinformation Policy and consolidate a uniform and specific vocabulary in urban geographic information systems.	✓	✓	✓	✓	✓					✓		
3.5.3. Standardization for the elaboration of territorial records: Articulate government initiatives that elaborate or contribute to elaborate real estate records. This articulation should focus on standardizing concepts, nomenclatures, methods, and means of implementation. This will optimize efforts and ensure data interoperability.	✓	✓	✓	✓		✓	✓	✓		✓	✓	
3.6. Digital Government: Formulate and implement state and municipal digital government strategies that are adequate to each reality.		✓	✓		✓					✓		
3.6.1. Expand access to public services and social rights through ICTs: Use information and communication technologies to promote the right to the city and to expand social rights. Focus on urban areas with a lack of public services and vulnerable people and social groups. To make these rights effective, ICTs must help simplify access to health, education, housing, transportation, basic sanitation, telecommunications, leisure, and cultural services.	✓	✓	✓	✓	✓				✓		✓	✓
3.6.2. Optimization and improvement of administrative processes: Establish an electronic administrative process system. Adhere, preferably, to the collaborative public infrastructure of the National Electronic Process and its actions, such as the Electronic Information System (EIS).	✓	✓	✓	✓	✓							
3.6.3. Analog services and digital transitional measures: Maintain and improve analog and face-to-face procedures when offering digital public services. These actions should also be taken when implementing transitional measures, especially when it is an essential service.	✓	✓	✓				✓				✓	
3.6.4. Digital Identity: Adopt and support the implementation of the "digital identity to the citizen", as stated in the Digital Governance Strategy.	✓	✓	✓									
3.7. Public Procurement: Promote partnerships between the public and private sectors to review and adjust public procurement processes, including procurement processes involving innovative solutions. Seek support from the Public Prosecution Services and the Courts of Accounts, update legislation and adopt administrative procedures.	✓	✓	✓			✓		✓	✓			

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

3 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
3.7.1. Government contracting of ICTs: To institute, test, and standardize new models of governments contracting for information and communication technologies. These actions must be carried out jointly, in intergovernmental cooperation. New contracting models must be based on the use of free software and open code. Ensure the hiring of institutions, entities, and companies that are committed to human rights, commitment to freedom of expression, unblemished reputation, proven experience in the area, and responsibility and commitment to public affairs. Prioritize the contracting of local institutions, entities, and companies. Use collaboration mechanisms to share experiences and best practices.	✓	✓	✓	✓	✓				✓			
3.7.2. Regulation of data ownership: Precisely define ownership rights and conditions for using data in public contracts and regulatory public performance. The same should happen in inter-institutional initiatives that involve the generation and sharing of data, including public-private initiatives.	✓	✓	✓						✓			✓
3.8. Integrated territorial management: Use integrated planning and integrated territorial management systems based on interoperable georeferenced data platforms, at all levels of government. Systems must be adapted to the different scales of public policies and respect the protection of personal data. They must also meet local specificities, demands, and capacities, in the case of municipal systems.	✓	✓	✓	✓	✓							
3.8.1. Inter-municipal data governance: Establish inter-municipal cooperation institutions to implement, manage and operate databases, digital systems, and shared information and communication technology solutions. Examples of inter-municipal cooperation institutions are public consortia, metropolitan governance bodies, and municipal associations.		✓	✓	✓	✓							
3.8.2. Integrated Management Centers: Deploy integrated information centers and public protocols to support real-time decision making. Prioritize emergency management and disaster response and that these centers link up with Education and Research Institutions and with the local innovation ecosystem.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
3.9. Public Data Sharing Platforms: Make data and public information available in an inclusive language, in an organized, understandable and, whenever possible, geo-referenced manner.	✓	✓	✓	✓	✓				✓	✓	✓	✓
3.10. Budget Transparency in Public Administration: Standardize data and information related to public accounts of all powers and levels of government. Ensure the quality and interoperability of such data and information. Include mechanisms that allow the geolocation of public investments. Implement active transparency, adopting organized public portals that facilitate the understanding and handling of data and information by non-specialized people.	✓	✓	✓									

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 4: Adopt innovative and inclusive models of urban governance and strengthen the role of public authorities as managers of the impacts of digital transformation in cities.

Context: Information governance addressed in the previous goal is part of broader urban governance, which stimulates collaboration and creates territorial intelligence based on systems and information that guide evidence-based strategic decisions to plan, execute, manage and monitor actions in the territory. People and institutions need to talk, discuss problems and build solutions that serve the collectivity.

In this sense, digital transformation can improve traditional participation models, making them more innovative and inclusive. It can create environments that bring together and reconfigure the relationship between the State and sectors of society. Or that bring together and reconfigure the relationship between urban sectors, such as housing, sanitation, and mobility, and between entities of the federation, the Union, the States, the Federal District, and Municipalities. Innovative and inclusive governance encourages collaboration, as this is a way to identify real urban problems based on evidence and develop solutions.

The municipal public power is the protagonist of the execution of urban policy, one of the guardians of the collective interest. Hence its strategic role in promoting and facilitating urban governance actions. And it must coordinate the processes that decide on the promotion, regulation, or disincentives of instruments arising from the digital transformation, such as data, information systems, and business models.

4 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
4.1. Intergovernmental articulation: Strengthen the articulation between governments to consolidate multilevel urban governance, which acts at various levels - national, regional, state and local, inter-federative. With cooperation between different entities of the federation - Union, States, Municipalities, and Federal District. And intersectoral with cooperation among different areas of public policy. Establish the role of state and federal governments in supporting the adaptation of recommendations and policies to local contexts together with the municipalities.	✓	✓	✓	✓	✓							
4.1.1. Inter-ministerial Chamber: Strengthen institutional governance space at the federal level for smart cities, with open participation to interested sectors.	✓	✓	✓	✓	✓				✓	✓		✓
4.1.2. Inter-federative cooperation in digital government: Promote the exchange of information in digital government. Implement joint measures of a collaborative nature through cooperative arrangements between governments.	✓	✓	✓	✓	✓							

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

4 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
4.2. Networking and State-Society collaborative platforms: Mobilize knowledge from different segments of society, people and institutions, to build creative solutions to contemporary urban problems more quickly.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.2.1. Digital network for urban collaboration: Stimulate the formation of a network for sustainable urban development. The network must be multilevel, interinstitutional, and intersectoral. The network must offer digital and inclusive resources to carry out collaborative work, including the implementation and feedback of The Brazilian Charter for Smart Cities.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
4.2.2. Remote technical assistance network for actions in the territory: Expand and adapt the remote technical assistance model based on digital resources that was pioneered by the Telemedicine University Network. This remote technical assistance network should support official inter-federative bodies and municipalities to implement sustainable urban development policies, projects, and actions, including smart city initiatives. Support mainly municipalities with lower institutional capacity.	✓	✓	✓	✓	✓				✓	✓	✓	✓
4.3. Building environments for innovation: Promote governance and urban management processes that are inter-institutional and collaborative. The objective is to build political-legal-institutional environments that are favorable to innovation and adapted to the territorial context and the level of action of the institutions.	✓	✓	✓						✓			✓
4.3.1. Innovation policies: Stimulate and integrate innovation forums in the public sector that are inter-federative and open to the broad participation of interested people, institutions, and sectors. The objective is to exchange experiences, build strategies, policies, and programs, and formulate proposals for improving legislation and legal mechanisms. These proposals should reduce bureaucratic obstacles to innovation in the public sector, including government relations with society and conducting business and contracts with innovation companies.	✓	✓	✓	✓	✓				✓	✓	✓	✓
4.3.2. Collaboration in legislative processes: Stimulate the use of participatory processes to prepare infra-legal laws and norms, at a regulatory level, subordinated to laws - decrees, ordinances, resolutions, normative instructions, etc., guidelines, parameters, and forms of public action. Stimulate especially in cases of disruptive technologies and innovative issues not yet regulated. Use information and communication technology tools and assistive technologies. The use of these technologies should increase the engagement of people and institutions.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4.3.3. Dialogue with control bodies: Establish regular forums for dialogue between public institutions that formulate and implement public policies, control bodies of the executive, legislative and judiciary branches, the Public Prosecution Services, involved sectors, and civil society organizations. These forums must have a strategic character in the task of jointly building paths and support for decision-making on the digital transformation in cities.	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

4 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
4.3.4. Regulatory Agencies: Align norms, techniques, and operations related to public services that require the installation of infrastructure in urban space. To this end, establish permanent governance space among regulatory agencies of these public services.	✓	✓	✓	✓	✓	✓	✓	✓		✓		
4.3.5. Innovation fostering programs: Promote training processes and programs to foster innovation and technological development. The objectives are to guide actions in the public and private sectors, and support sustainable urban development and digital transformation, in line with local and regional needs and priorities.	✓	✓	✓						✓	✓	✓	
4.4. Capacities in public administration for the digital transformation: Develop capacities and competencies in Public Administration that are focused on acting in the context of digital transformation and its territorial developments. Implement and strengthen institutional development programs at all levels of government.	✓	✓	✓	✓	✓					✓	✓	✓
4.4.1. Technical support for municipalities: Develop and implement federal and state training and technical assistance actions for municipalities. These actions should be accessible to all interested people in the national territory, preferably through a single platform that integrates different resources and initiatives. They must be in line with the respective local government capacities. They must also be in accordance with the typologies of municipalities.	✓	✓	✓	✓	✓				✓	✓	✓	✓
4.4.2. Government competences, information, and communication technologies: Strengthen local data processing agencies. Develop government skills in information and communication technologies for civil servants from different several areas of knowledge. This should be done at all levels of government and through inter-federative cooperation.	✓	✓	✓	✓	✓				✓	✓		
4.4.3. Innovative methodologies for solutions design: Use innovative methodologies and mechanisms to design and implement sustainable urban development policies and solutions to urban problems.	✓	✓	✓	✓	✓		✓		✓	✓		✓
4.4.4. Valuing innovative civil servants: Establish mechanisms to identify innovative public servants at all levels of government. Offer incentives and opportunities for the development and use of government employees' potential in institutional work and in the improvement of public policies.	✓	✓	✓							✓		
4.5. Adoption of innovative management and governance processes at the local level.	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

4 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
4.5.1. Democratic management of cities: Encourage engagement and inclusive public participation in the preparation and revision of the Master Plan and other municipal planning instruments, in everyday aspects of urban janitorial and management, and in government-people interaction. This stimulus must be given through innovative mechanisms and digital solutions, and with the use of assistive technologies. Actions must be in accordance with local demands and needs and must be appropriate to the organizational and institutional characteristics of the municipality.	✓	✓	✓						✓			✓
4.5.2. Intersectorality at the local level: Establish institutional spaces for cooperation and intersectoral action, cooperation between different areas of public policy, including between agencies of different municipalities. The objective is to facilitate that urban development policies, plans and programs, and related sectors are implemented in an integrated manner in the territory. Include actions from different sectors: for example, housing, sanitation, urban mobility, water security, disaster reduction, environment, health, education, and urban security. Take a continuous and incremental approach to achieve integration.	✓	✓	✓	✓	✓					✓		
4.5.3. Innovative solutions for local problems: Map concrete local demands and offer innovative solutions to raised problems. For this mapping, mobilize the local ecosystem and establish forms of cooperation.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
4.5.4. Urban Experimentation Laboratories: Encourage the emergence of innovative urban solutions, creating cross-disciplinary collaborative spaces for smart cities. These actions should consider the broad vision of digital transformation in cities. To ensure that solutions are achievable, focus on research and experimentation in real environments. For this, articulate teaching and research institutions and other sectors involved in the production of knowledge, with institutional and legal support from the Municipal Public Administration.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
4.5.5. Disruptive urban services: Structuring management and governance spaces and using agile methodologies to ensure evidence-informed decision-making and the regulation of urban solutions at the right time.	✓	✓	✓	✓	✓		✓		✓	✓		✓

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 5: Foster local economic development in the context of digital transformation.

Context: A well-structured, collaborative and inclusive governance makes cities more livable and strengthens the local economy. The same happens when decisions are made based on data and scientific evidence.

Digital transformation can generate value, jobs, and income for people in cities. The sharing economy, the creative economy, and the circular economy can potentialize these opportunities. But different sectors and people must come together to prevent a poorly conducted digital transformation from causing more social inequality.

5 Recommendations	Key-Audience											
	FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
5.1. Alternative and Innovative Economies for Diversity: Support the development of green, fair and innovative local economic models. Include solidary, shared, creative, circular, and collaborative economy initiatives. Use these initiatives to create solutions that address different local realities and generate opportunities for all people, especially to include vulnerable people and social groups.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
5.1.1. Degrowth and zero-emissions economy: Include perspectives for degrowth, decarbonization, and other innovative sustainability variables in exploring new alternatives for social and economic organization. Introduce the reduction of socioeconomic inequalities and the distribution of wealth in the discussion of green, fair, and innovative economic models. The objective is to deal with the scarcity of natural resources and the precariousness of the working world.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
5.2. Green, solidary and sustainable economy: Promote environmental economic incentives, such as payment models for environmental services, use of green bonds, sustainable public purchase, and programs for the acquisition of sustainable agricultural production.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
5.2.1. Sustainable patterns of production and consumption: Use information and communication technologies to stimulate responsible patterns of production and consumption and activation of the local economy.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
5.3. Platform Economy: Use platform economy mechanisms, economic and social activity facilitated by platforms, to bring local producers and consumers closer together. The objective is to strengthen community and territorial bonds, such as neighborhood relations, urban-rural relations, and relations with individual micro-entrepreneurs.	✓		✓	✓					✓		✓	✓
5.4. The Economy and data market: Implement policies, laws, regulations, and other instruments to establish an ethical and inclusive data market.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

5 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
5.5. Digital Payments for Public Services: Facilitate the use of digital payments for public services by developing and sharing tools that are aligned with the Digital Citizenship Platform. Adopt the PIX, instant payment from the Brazilian Central Bank, as a form of payment for public services.	✓	✓	✓	✓	✓		✓				✓	
5.6. Competitiveness in urban digital services: Seek ways to ensure competitiveness to urban digital service ecosystems. For this, practices that avoid monopolies and promote the free choice of users must be used.	✓	✓	✓	✓	✓		✓		✓			
5.6.1. Credit for small technology companies: Facilitate access to special credit conditions for individual micro-entrepreneurs and small businesses in this sector. Establish financial and technical incentives for the operation of small Internet providers in order to ensure the provision and sustainability of Internet access initiatives in partnership with the government.	✓	✓	✓	✓					✓		✓	
5.6.2. Support for productive and digital inclusion: Create subsidies and other mechanisms for the productive and digital inclusion of micro and small businesses, entrepreneurs, or people who work informally. These mechanisms should make it economically viable for these people and companies to access the internet, quality digital devices, such as smartphones, tablets, and notebooks, and platforms for e-commerce.	✓	✓	✓	✓					✓		✓	✓
5.7. Information and communication technology for urban poverty reduction: Using information and communication technologies to reduce urban poverty, contributing to objective 1.4 of Sustainable Development Goal 1.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.7.1. Access to financial services and microfinance: Promote the financial inclusion of vulnerable people and social groups. For this, these people and groups must have access to financial services, microfinance, and other forms of economic participation. These actions must be carried out with the support of digital products and services.	✓	✓	✓	✓					✓		✓	✓
5.7.2. Access to regular urban land: Use information and communication technologies to facilitate land regularization in low-income informal urban centers. Land regularization must take place with the support of technical assistance programs for communities.	✓	✓	✓	✓					✓	✓	✓	✓
5.7.3. Social businesses for the expansion of services and rights: Stimulate partnerships and social businesses that expand access to essential services and ensure rights, including for people who are drivers and delivery people using apps. Also encourage partnerships and businesses that promote the social and productive inclusion of vulnerable people and social groups, generating income and employment. Inclusion actions must be supported by ongoing training and digital inclusion processes.	✓	✓	✓	✓	✓				✓		✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

5 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
5.8. Regional and local economic development: Support production chains and innovation ecosystems in territories, in order to reduce socioeconomic and spatial inequalities. Strengthen local productive arrangements, offer economic incentives, and implement infrastructure and social support technologies, such as technology parks, specialized laboratories, and incubators.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
5.8.1. Local Productive Arrangements: Develop, use and share digital solutions to identify and strengthen Local Productive Arrangements. Disseminate methodologies and expand initiatives for activation and productive articulation in the territory.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
5.8.2. Electronic waste production chain: Stimulate Research & Development projects aimed at the economic use of electronic waste. These projects should encourage the national industry to adopt circular economy principles.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5.8.3. Match digital solutions to urban demands: Make selections and public consultations to identify and systematize municipalities' needs related to improving information, planning, management, and urban governance.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
5.8.4. Startups e digital transformation in cities: Bring the startup ecosystem closer to municipal needs related to improving urban information, planning, management, and governance. Articulate funding lines for startups of an incremental or disruptive nature.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
5.8.5. Professional training and market: Stimulate professional training in the area of information and communication technology, through vocational training and higher education. Foster the labor market for the allocation and retention of graduates through the articulation of local strategies that respond to the demands of cities, supported by the network of National Institutes of Science and Technology.	✓	✓	✓					✓	✓			✓
5.9. Business environment in cities: Improve, harmonize, and widely publicize municipal norms and procedures. Standardize bureaucratic processes, making them clearer and more efficient.	✓	✓	✓	✓	✓		✓					
5.9.1. Classification of economic activities: Use the codes of the National Classification of Economic Activities-Tax (CNAE-Tax) of the Brazilian Institute of Geography and Statistics in administrative records at all levels of government. Establish flows for the creation of new activities in the CNAE-Fiscal as needed. The objective is to create a unifying measure of a national character and keep it updated with new economic activities.	✓	✓	✓	✓								
5.9.2. Release of economic activity: Make it easier to do business in cities. For this, simplify the processes and public acts for the release of economic activity, according to the risk levels of the activities. When defining risk levels for economic activities, observe the principle of reasonableness and proportionality, physical and sanitary security, and the constitutional competence of municipalities in the planning, use, and occupation of land.	✓	✓	✓									

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

5	Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
	5.9.3. Municipal urban planning rules: Make municipal urban planning rules compatible, simplify procedures and institute a digital urban and building licensing service. Comply with the general rules and guidelines issued by the Union, including those related to telecommunications services and their respective support infrastructure. Establish reasonable deadlines for analyzing and issuing the necessary public acts. Make the rules and licensing processes accessible to people, organize and make available information clearly and in simple and inclusive language. Seek to make this information available on a public georeferenced data gateway relating to the municipality's land use planning.			✓		✓							

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 6: Stimulate sustainable urban development financing models and instruments in the context of digital transformation.

Context: Financial resources enable, accelerate, and enhance sustainable economic and urban development processes. Resources are needed to implement environments that encourage innovation, research, and infrastructure deployment.

State and society must work together, moving in the same direction. Joint action must include public banks, private investors, financial and development institutions, research and innovation support agencies. The collaborative work will identify, systematize, create and make available instruments, diversified lines of financing, and self-financing solutions for the digital transformation. All actions must be associated with sustainable urban development.

6 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
6.1. Information and communication technologies in the public budget: Include digital transformation in the public budget at all levels of government. The budget should be used to make investments in technological modernization, data digitization, digitization of public services, and infrastructure for digital inclusion.	✓	✓	✓									
6.2. Telecommunications Universalization Fund and other funds for internet access: Reformulate the legislation of the Telecommunications Universalization Fund (TUF) to allow it to be applied in the expansion of internet access, by different means. The reformulation should also expand the use of TUF in urban environments and rural and remote areas. Use sectorial funds, such as the Telecommunications Inspection Fund (TIF) and the Fund for the Telecommunications Technological Development (TTD), to increase the access of all people to the internet.	✓			✓		✓	✓	✓				
6.3. Financial and tax strategies to expand digital connectivity: Encourage state governments to implement tax burden reduction policies. The objective is to bring the coverage of the Personal Mobile Service networks and broadband offer services to the interior. In addition, encourage state governments to provide both costly and non-costly resources to provide and expand digital connectivity.	✓	✓		✓	✓						✓	✓
6.4.Use of information and communication technologies to improve municipal revenue.	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
6.4.1. Municipal registers: Provide technical assistance and costly or non-costly financial resources to municipalities to prepare and update municipal registers, such as georeferenced cartographic bases, municipal territorial registers, and generic value plans.	✓	✓	✓	✓	✓				✓	✓	✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

6 Recommendations	Key-Audience											
	FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
6.4.2. Information and communication technologies and extra tax collection mechanisms: Use information and communication technologies to enable or improve the implementation of instruments to capture and recover urban capital gains, land valorization due to public actions.	✓	✓	✓		✓			✓				
6.5. Partnerships with financial and development institutions: Establish partnerships with financial and development institutions to develop lines of financing for smart cities that are associated with The Charter's recommendations.	✓	✓	✓	✓					✓		✓	
6.6. Fundraising for smart cities projects: Provide technical support for municipalities to raise costly and non-onerous funds from financial and development institutions. Provide information on financing lines and transfers of available resources and support the preparation of smart city projects.	✓	✓	✓	✓					✓		✓	
6.7. Concession Projects and Public-Private Partnerships: Develop feasibility studies for innovative modeling provided by digital transformation. Consider the inclusion of new lines to develop innovative models in the Fund to Support the Structuring of Public-Private Partnerships and Concessions (FSP).	✓	✓	✓	✓					✓		✓	✓
6.8. Compensation for the use of public space: Stimulate mechanisms to establish compensation and charge from innovation and information and communication technology companies that use urban infrastructure, public spaces, and street furniture.	✓	✓	✓		✓	✓						
6.9. Fostering innovation by the private sector: Map and bring together industry and the information and communication technology sectors around actions that stimulate innovation in favor of sustainable urban development.	✓	✓	✓	✓					✓		✓	
6.10. Innovative financing strategies: Carry out exploratory studies to identify possibilities for taxing private digital services. Studies should also identify possibilities for using distributed logging technologies to value public or common assets. The assets to be valued must have the potential to generate revenue and must be able to be used to compose new business models in the context of sustainable urban development.	✓	✓	✓	✓	✓					✓	✓	✓

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 7: Foster a massive and innovative movement in public education and communication for greater engagement of society in the process of digital transformation and sustainable urban development.

Context: People, collectivity, and organizations must transition from passive users to agents of transformation. They must be conscious agents and creators of their own realities. This requires new skills, abilities, and attitudes.

It is a collective and challenging task. Therefore, it must be supported by a massive educational movement about digital transformation in cities. This task also requires a qualified communication process to engage, synchronize, coordinate and articulate different public and private agents around the goals of The Charter. Among the agents, there must be civil society organizations, communication vehicles, teaching and research institutions.

7 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
7.1. Sustainable use of the internet: Carry out educational communication actions to encourage sustainable patterns of internet usage.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7.2. Inclusive and accessible public communication: Use simple, inclusive language, without a gender marker and with accessibility features in public communication and the dissemination of The Charter. Messages must be clear, respecting gender and ethnic-racial diversity. These communication actions must guarantee the right of people with disabilities to access reading, information, and communication.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7.3. Digital transformation and urban education: Promote inclusive and accessible public communication actions that are aimed at focused on sustainable urban development and sustainable digital transformation.	✓	✓	✓	✓	✓							
7.3.1. Educating city: Use the city as a support for urban education. For this, people and institutions should be encouraged to value natural resources, green areas and public spaces, equipment, and urban furniture. The public should also be informed about the history and meaning of the places. These actions must be associated with the use of collaborative mapping tools that survey and record subjective aspects related to urban spaces.	✓	✓	✓						✓	✓	✓	
7.3.2. Public communication campaign: Carry out a public communication campaign to promote and inform about sustainable urban development. The campaign must use different digital or analog media, formats, and methods. The objective is to reach children, young people, and adults of different races, ethnicities, educational levels and social roles, and different cities and contexts.	✓	✓	✓									

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

7 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
7.4. Dissemination of the Brazilian agenda for smart cities: Develop and implement The Charter's public communication strategy in simple and inclusive language, with the participation of segments that adhere to digital culture. The objective is to reach society broadly and sensitize it, particularly regarding the existing relationships between cities and information and communication technologies and people's digital rights.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7.4.1. Practical Guide to The Charter: Develop and make available a Practical Guide to implement The Charter aimed at technicians and municipal managers, written in simple and inclusive language.	✓											
7.4.2. Linking Smart Cities initiatives to The Charter: Strengthen The Charter as a political instrument tool to articulate a national agenda for digital transformation in cities. To this end, links must be established between the Strategic Goals and Recommendations of The Charter, on the one hand, and the corresponding initiatives of existing or future smart cities, on the other (indexation of child products). As a result of this process, a set of knowledge about smart cities and their evolution will be registered.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
7.5. Digital literacy: Stimulate actions to promote digital literacy and increase the number of people participating in digital transformation.	✓	✓	✓							✓		
7.5.1. Digital literacy in school curricula: Observe, comply with and expand the proposals contained in the Common National Curriculum Base to integrate digital culture in school curricula.	✓	✓	✓						✓	✓		✓
7.5.2. Digital culture in the school community: Stimulate training and learning processes in digital technologies for the entire school community. Develop specific educational actions for the digital literacy of educators, enabling them to act as multipliers of digital inclusion.	✓	✓	✓						✓	✓		✓
7.5.3. Digital resources in formal education: Promote the technological equipment of educational institutions through laboratories, equipment, programs, tools, software, and other digital resources.	✓	✓	✓						✓	✓		✓
7.6. Urban community practices: Articulate integrated communication actions, with campaigns planned and elaborated in cooperation between sectors and institutions and that convey a unified message, in simple and inclusive language. Increase social engagement on platforms that mobilize and develop sustainable urban community practices in the context of digital transformation.	✓	✓	✓					✓		✓		✓
7.6.1. Community communication: Adopt community strengthening and the State-community interface as a strategy for transforming the territory and valuing local belonging, identity, and memory. Stimulate community-based digital educommunication projects for content production.	✓	✓	✓					✓	✓	✓		✓

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

STRATEGIC GOAL 8: Build up means to understand and evaluate, continuously and systematically, the impacts of digital transformation in cities.

Context: Finally, we need to assimilate and learn from the transformations as they happen, as they are new, dynamic, unprecedented, and still little studied facts. It is necessary to understand and assess the systemic impacts, impacts on our social, environmental, economic, political systems that the digital transformation process causes in cities. This must be done in a continuous and structured way, based on a complex and systemic approach.

Impact assessment is an essential task to identify new challenges and correct the course of this agenda throughout its implementation. Such a task will only be possible with the union of different people and with the appreciation of local and community knowledge.

8 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
8.1. Information and communication technologies and human rights: Reduce the negative impacts of digital transformation by creating technologies and processes centered on human rights and the sustainable use of natural resources. The focus on human rights must include digital law perspectives.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.1.1. Impact assessment: Build up means to understand and assess, in a continuous, systemic, and transparent way, the impacts of policies, plans, programs, projects, activities, and actions for digital transformation in cities. Use reliable and comparable data and indicators. Give publicity and disseminate the methodologies adopted and the results obtained in the evaluations.	✓	✓	✓							✓	✓	✓
8.1.2. Monitoring of public actions: Establish and disseminate mechanisms for monitoring policies, plans, programs, projects, activities, and actions for digital transformation in cities. Engage all levels of government in these initiatives. Use information and communication technologies and standardized mechanisms to promote active transparency and facilitate social control.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.1.3. Human review: Ensure and facilitate human review in automated decision-making processes or those based on Artificial Intelligence, in respect of human rights.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.2. Observatory for Digital Transformation in Cities: Integrate the theme of smart cities into the Observatory for Digital Transformation, considering smart cities in the broad perspective of digital transformation in cities. Encourage this Observatory and other official forums related to digital transformation to seek to understand and assess the impacts of digital transformation in cities. Also encourage the implementation of this Charter and foster, articulate, integrate, and disseminate the experiences from the Urban Experimentation Laboratories.	✓		✓	✓	✓				✓	✓		✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

8 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
8.3. Maturity for Smart Cities: Develop and make available a Brazilian Maturity System for Smart Cities in a digital platform of its own to be created and maintained by the federal government. The System should use methodology and indicators appropriate to the Brazilian reality and municipal typologies.	✓		✓	✓						✓		
8.4. Local impacts of digital transformation and social control: Stimulate urban development and digital transformation issues to be discussed in an integrated manner. To this end, institutional articulation of councils or forums that debate these themes and that act in the social control of public policies should be encouraged. These institutions should monitor, assess and support the municipality's actions on the impacts of digital transformation in the territory. Actions with municipalities must consider the specific political-institutional conditions of each city.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.5. Science, Technology and Innovation for Digital Transformation and Sustainable Urban Development: Mobilize different sectors of society to broaden understanding of the impacts of digital transformation in cities. Impacts on economic-financial, sociocultural, urban-environmental, and political-institutional aspects should be considered.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.5.1. Research lines: Encourage research lines and funding grants that favor transdisciplinary projects. The objective is to continuously produce cutting-edge scientific knowledge about the digital transformation in cities and its impacts.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
8.5.2. "Cyberinfrastructure" for knowledge generation on sustainable urban development: Support research, development, and innovation projects that need "cyberinfrastructure", the infrastructure of operating systems, data management, and processing, large-scale advanced instruments, and visualization environments.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.5.3. Integration of disciplinary fields: Promote technical and scientific events and lines of research that bring together people and institutions in the areas of urban development and information and communication technologies. These events and research lines should advance the understanding of the phenomenon of digital transformation and the relationships that this phenomenon has with different disciplines. The objective is to consolidate a transdisciplinary approach to research and action.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.5.4. Understanding and acting on negative impacts: Understand and quantify the negative impacts of innovative products, services, and processes linked to communication and information technologies in Brazilian cities. The objective is to propose mechanisms to prevent and, when unavoidable, reduce and offset these negative impacts, as well as monitor their evolution.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

8 Recommendations	Key-Audience FG	SG	MG	VIGC	HIGV	RA	UC	TC	PS	TRI	DFA	CSO
8.5.5. Assistive Technologies: Stimulate research, development, innovation, and dissemination of assistive technologies, resources that expand the access and participation of people with disabilities, which aim to expand the access of people with disabilities to information and communication technologies and social technologies. Also, increase the autonomy of people with disabilities in cities and their engagement in urban issues related to digital transformation.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8.6. Reverse logistics of electronic products: Accelerate and make transparent the structuring and implementation of reverse logistics systems, collect and return solid waste to the business sector or dispose of it correctly. Companies should offer people who consume the items the possibility of returning their waste, without using public urban cleaning services or solid waste handling.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

To be continued

FG Federal Government
SG State Government
MG Municipal Government
VIGC Vertical Intragovernmental Cooperation
HIGV Horizontal Intragovernmental Cooperation
RA Regulatory Agency
UC Utility Companies
TC Telecommunications Companies
PS Private Sector
TRI Teaching and Research Institutions
DFA Development Financial Agencies
CSO Civil Society Organizations

3. CONSIDERATIONS AND FUTURE PERSPECTIVES

The future of Brazilian cities depends on understanding that digital transformation is a dynamic, unprecedented, and manageable process. And understand the impacts that this transformation has on cities and people.

It is important to understand that this process must be sustainable. This requires pursuing sustainable urban development, including old and new challenges. Where must assume the vision that digital transformation and urban development are processes that feedback into each other.

Building The Charter took nearly two years. Authors came from different areas of knowledge and sectors of activity, such as information and communication technology, urban development, and public policies. It was challenging to bring together so many perspectives, concepts, policies, and guidelines. It was a profound learning experience.

The Charter Community built proposals based on visions common to all and found ways to share principles and guidelines in the midst of diversity.

The Charter Community hopes that the comprehensive look proposed by The Charter will generate positive and continuous impacts on Brazilian cities and people's lives. It hopes that the recommendations will be implemented and that the collaborative network set up during the elaboration will be strengthened.

The launching of The Charter ("mother product") is an invitation to other institutions and people to join the network, to implement the recommendations, and to identify, elaborate, and index "child products" that fulfill the recommendations.

The first step is to identify and elaborate materials and instruments in a shared way. And, mainly, to organize an implementation plan, indicating priorities and its respective responsible people.

The Charter Community takes on the conciliatory view that digital transformation can boost the sustainable development of cities. And it can improve people's quality of life, streamlining and expanding relationships.

The Charter presents itself as a document with the political agenda to face the real and immense challenges of Brazilian cities. The Charter looks to the present and the future. It understands that each individual can and should take on an important role on the path to a broad, positive and effective transformation.

Institutional Support

MINISTRY OF SCIENCE TECHNOLOGY AND INNOVATION
Minister Astronaut Marcos Cesar Pontes

Secretary of Entrepreneurship and Innovation
Paulo César Rezende de Carvalho Alvim

Department of Science, Technology and Digital Innovation
Director José Gustavo Sampaio Gontijo

General Coordination of Digital Transformation
General Coordinator Eliana Cardoso Emediato de Azambuja

Participating team
Cristina Akemi Shimoda Uechi
Eliana Cardoso Emediato de Azambuja
Karina Domingues Bressan Vidal

MINISTRY OF COMMUNICATIONS
Minister Fábio Faria

Telecommunications Secretary
Vitor Elísio G. O. Menezes

Director of the Telecommunications and Broadband Infrastructure Projects Department
Wilson Diniz Wellisch

General Coordination of Infrastructure Projects for Telecommunications
Coordinator Geral Daniela Naufel Schettino

Participating team
Rodrigo Cruz Gebrim
Diogo Santos de Godói
Ricardo Mesquita Muniz

GESELLSCHAFT FÜR INTERNATIONALE ZUSAMMENARBEIT (GIZ) GMBH

National Director of GIZ BrazilNacional da GIZ Brasil
Michael Rosenauer

Project "Support to the National Sustainable Urban Development Agenda in Brazil" (ANDUS)

By charge
Federal Ministry of Environment, Nature Protection and Nuclear Safety of Germany (BMU);
Federal Ministry of Interior for Construction and Homeland (BMI)

Project Director
Sarah Habersack

Technical Coordination
Ana Luísa Oliveira Silva

Technical review
Bolívia Priscila Soares de Sá
Ana Luísa Oliveira da Silva
Manuela Reinhard
Marcella Menezes Vaz Teixeira

Participating team
Cecília Martins Pereira
Thomaz Ramalho
Günter Wehenpohl (in memoriam)

traDUS

UFERSA

cooperação alemã DEUTSCHE ZUSAMMENARBEIT

Por meio da: giz

ANDUS

MINISTÉRIO DAS COMUNICAÇÕES

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E INOVAÇÕES

MINISTÉRIO DO MEIO AMBIENTE