



Frontier technologies in smart sustainable cities

The webinar on "Smart sustainable cities and frontier technologies in Latin America" took place on 8 December 2020. It was organized by the International Telecommunication Union (ITU), together with the Regional Center for Studies on the Development of the Information Society (Cetic.br) of the Brazilian Network Information Centre (NIC.br). It was attended by more than 170 participants who joined to hear from representatives from key Latin American governments and organizations.

The webinar was premised on the idea that frontier technologies such as Artificial Intelligence, the Internet of Things, 5G, Digital Twins, Blockchain, Big Data, Drones, Augmented and Virtual Reality, and more, can make the management of urban operations, complexities and infrastructure better and more efficient.

From enhancing cities' and communities' responsiveness, to optimizing energy efficiency, improving access to public services, and enhancing public engagement & participation, frontier technologies are starting to play a visible role in the management of the cities of tomorrow.



These technologies can help cities and communities in their quest to achieve smartness and sustainability in line with the New Urban Agenda and the Sustainable Development Goals, providing opportunity for leapfrogging outmoded modes that may hinder progress.

However, for frontier technologies to be effective in this regard, they must be deployed thoughtfully in a manner that is transparent and accountable. Their use will be most impactful when implemented with universal values in mind as part of strategic policy planning efforts, the results of which are measurable and publicly reported.

Within this context, the webinar focused on the region of Latin America, with special attention paid to the importance of measurement for policymaking and the role of international standards in facilitating smart sustainable cities using standardized key performance indicators (KPIs). The idea is that without indicators and figures, it is difficult to measure future actions.

Smart sustainable cities themselves are a direct response to the growing sustainability challenges due to far the reaching impact of global emergencies such as COVID-19. The need to support their development is, therefore is crucial.



Opening remarks

Master of Ceremony

Tatiana Jereissati | Coordinator,
Sectoral Studies and Qualitative
Methods | NIC.br

This webinar marked the first joint activity of Cetic.br | NIC.br and ITU-T under the scope of the newly signed MoU. It brought together experts to share best practices of smart sustainable cities in implementing frontier technologies in Latin America. Frontier technologies have enabled cities to reimagine urban management and envision alternative approaches to dealing with local challenges and delivering better services and quality of life for the population.

However, smart sustainable city initiatives, including to deploy frontier technologies, must be locally relevant and address the specific needs of the population. Monitoring the implementation of smart sustainable city initiatives is therefore of utmost importance, which is why close attention was paid to the matter of evidence-based policymaking and the role of measuring standards for this process.

The NIC.br Sectoral Studies Publication on the theme of Smart Cities was launched at the webinar. It addresses challenges and complexities in defining and measuring smart cities. It also showcases Brazilian experiences in the development and implementation of indicators in this regard.



Opening Remarks

Demi Getschko | Director | Brazilian Network Information Center, NIC.br

For many years, NIC.br has conducted a range of activities related to the Internet, including data and statistics production. This particular role has been carried out by the Regional Center for Studies on the Development of the Information Society (Cetic.br), which has a long history of collaboration with the ITU. Over the years, Cetic.br|NIC.br has collaborated with the ITU on events and workshops that address ICT-related themes, especially capacity-building initiatives and forums for the discussion of ICT indicators and methodologies.

NIC.br and ITU-T have signed a memorandum of understanding that aims at further joining efforts for conducting activities of common interest, such as producing joint publications of policy & standard briefs and collaborating on joint events, especially under the scope of SSCs and the circular economy, themes which are critical for the Latin American region. Regarding this theme, measurement is of utmost importance for policymaking. Without data, it becomes more difficult to gear action.

Finally, Cetic.br | NIC.br's latest publication: "Information & Communication Technologies in urban management: challenges for measuring smart cities" was launched at the webinar, featuring a prologue from ITU-T.



To further enhance its work, ITU has also signed a new collaboration agreement with UN-Habitat on World Cities Day. It builds on important initiatives like United for Smart Sustainable Cities (U4SSC) and the common work of ITU and UN-Habitat in support of the New Urban Agenda and SDG 11. Preliminary results of the collaboration can already be seen.

ITU is also pleased to have contributed to the Urban Monitoring Framework from UN-Habitat, which greatly complements the already successful U4SSC Key Performance Indicators (KPIs) for Smart Sustainable Cities.

The U4SSC KPIs for SSCs have provided over 100 cities worldwide with the tools they needed to measure their smartness and sustainability based on the parameters set in the Sustainable Development Goals.

ITU, with key partners like NIC Brazil and UN-Habitat, will continue to work hard to enhance the digital transformation of cities and communities. Together with these partners, it will continue to provide cities and communities in the Latin American region with even more effective tools to measure sustainability progress and to develop relevant policy based on actual data.



Session 1: ICT for Sustainable Development: Perspectives on Smart Cities in Latin America

Moderator

Cristina Bueti | Counsellor |
International Telecommunication Union

“ITU: enabling smart sustainable cities and communities in Latin America”

Latin America is the planet's most urbanized region. There are roughly 2 000 cities driving Latin America's economy today. Of these, there are more than 55 cities with population of one million or more. So, Latin America boasts some of the largest urban regions in the world, including Buenos Aires, Mexico City, Rio de Janeiro, and São Paulo, each with more than 10 million people. By 2050, it is estimated that 90% of Latin Americans will live in cities. This is remarkable, given that a century ago Latin America was mostly rural.

But while urbanization has delivered several social and economic benefits to cities in Latin America, it has also led to many challenges.

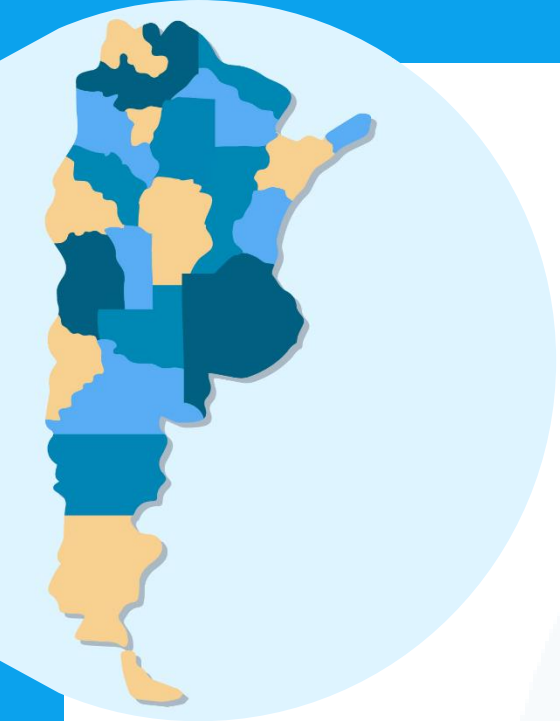


The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies (ICTs). ITU has an important role in establishing the trajectory of, and standardizing the use of ICTs and digital technologies as part of smart & sustainable development in Latin American cities, and to educate on the opportunities but also the issues associated with their uptake.

Through its research activities, standards and publications, global initiatives and projects, networking and partnerships, and awareness-raising activities and events, ITU's work contributes significantly to the implementation of multiple smartness and

sustainability-related commitments, such as the 2030 Agenda and its Sustainable Development Goals, and ITU's Connect 2030 Agenda for Global Telecommunication / ICT Development.

ITU's work is carried out through dedicated study groups and focus groups within its sectors. The ITU Standardization Sector: ITU-T includes, for example, ITU-T Study Group 20 on IoT and Smart Cities & Communities, which studies aspects of big data, e-services and smart services. ITU also leads global initiatives such as United for Smart Sustainable Cities (U4SSC). Several Latin American cities are part of U4SSC, including Esperanza, Santa Fe and Manizales.



Presenter

Martín Olmos | Undersecretary of Information and Communications Technology (ICT) | Argentina

It is important for cities and communities to work with international organizations and initiatives such as ITU and U4SSC. The journey to become a smart sustainable city requires the adoption of a common framework for measuring SSC impact. International standards, such as those developed by ITU-T, offer the tools needed for measuring impacts, which provide the foundation for developing relevant public policy that would facilitate the mass adoption of frontier technologies like the Internet of Things in the transition to smart sustainable cities.



In the case of Argentina, there are many metropolitan areas in the country, each with different administrative limits and capacity. In order to have a successful smart sustainable city transformation, a common framework for measuring would be crucial, for example the U4SSC KPIs.

There is also increasing need to modernize existing ICT infrastructure. For example, Argentina is working to modernize its national data centers in order to offer better cloud services to remote areas where ICT infrastructure is commonly lacking. The digital capability of the country needs to be greatly improved and expanded in order to accommodate the demand of frontier technologies, particularly 5G.

public investment and regulation need to work hand-in-hand in order to improve the connectivity in the country. Connectivity in Argentina is a federal service; however, local governments & regional organizations need to be involved in the digitalization process as they are play a crucial role in the implementation stage. As the number of connected devices continue to surge, along with increasing demand for other forms of M2M connection and digital capacity resulting from 5G, the wireless spectrum of the country also needs to be expanded.

Argentina is already making progress in this regard as well as undertaking multi-year plans that would ensure Argentinian cities and communities are equipped for success in smart sustainable city transformations.



Presenter

H.E. Katrina Naut |
Ambassador | Dominican Republic

**“Smart Cities in Latin America:
Challenges, Success Stories, and the Way
Ahead”**

Rapid urbanization presents a challenge for Latin American countries and cities, given their economic and social vulnerabilities, such as immense urban agglomerations, poverty, crime and insecurity, pollution and traffic congestion.

The rise of the smart city concept has led some policy makers to believe that their city challenges can be solved simply by applying technology. Indeed, the latest technological applications will be essential to social progress, but non-technical reasons that hinder progress must also be considered.



Furthermore, for many Latin American countries (such as Argentina and the Dominican Republic) and their cities and communities, connectivity is becoming a special pillar to have within any smart sustainable city conceptual framework. Current efforts in Latin America involve development of satellite-based connectivity for remote areas, as well as introduction or reinforcement of fiber optic networks, to connect small to medium sized cities which do not have markets large enough to attract many private carriers. Introduction of the latest Wi-Fi standards are also of utmost interest, given how much connectivity happens

through Wi-Fi connected devices at home, work, schools, etc. Many of these countries are also looking to develop modern centres of data with cloud services, which would allow the provision of such services to cities that cannot have their own infrastructure and could thereby access and leverage frontier technologies in association with their federal government.

The question in Latin America remains: How can it expand beyond the public services management approach to smart cities to a more comprehensive vision for the future of its communities?



Presenter

Ana Maria Meiners | Mayor |
Esperanza, Argentina

“Esperanza: our vision and application context”

A smart city is one that knows how to solve problems along with its neighbors, hopes to improve citizens’ quality of life, and offers opportunities to achieve true human development in harmony with the environment. To this end, Esperanza utilizes software that allows identification of common management topics between departments and offers a unified database reflecting the socioeconomic reality of the municipality. Such a database relies on effective data.

A good place for a city or community to plan its data programmes is to first see what the municipality already has in terms of data. This allows decision makers to understand what information is being generated from the city. Then a complement of data can be generated in an organized manner.

Building strategic alliances with cities that already have this installed capacity can help in planning efforts. Also, working with academia can help to quantify the evolution of broad indicators and tie them to public policy.

This can then help see standards and indicators become mainstays of management process quality assessment and be included in municipal budgets.



Presenter

Javier Torner Ruiz de Temino |
Coordinator of the Urban Lab |
UN-Habitat, Mexico

“Cities and digitalization”

There are more than 4 000 cities in the world with populations exceeding 100 000. 1 billion people live in informal settlements and slums in overcrowded and inadequate housing. 2.4 billion people lack adequate access to safe water and sanitation. Furthermore, over 95 % of total COVID-19 cases are found to be in urban areas.

These challenging trends underscore the need for sustainable urbanization. To this end, excellent guidance is offered by the various UN-Habitat studies and publications on offer on the topic of urbanization and cities. A recent example is the World Cities Report 2020, which calls for the intrinsic value of sustainable urbanization to be harnessed for the wellbeing of all from an economic, social and environmental perspective.



The report calls for effective implementation of the New Urban Agenda, including in matters on innovation and technology, the role of local governments, and targeted investments. It affirms that well planned, managed and financed cities and towns create value that can be harnessed to: build resilient cities that can bounce back from the devastating impacts of pandemics; improve the quality of life of all residents; and leverage in the fight against poverty, inequality, unemployment, climate change and other pressing global challenges.

Cities must work to promote effective policies to protect citizen data & empower citizens to understand how to protect their personal data.

Clear, ethical frameworks and institutional arrangements for data collection and data sharing should be put in place.

Technology is most effective when coupled with institutional innovation and is not a substitute for improving governance. Results of smart city experiments are mixed and particularly poor when these efforts are technology rather than people driven. Technology cannot displace engagement in community and city affairs.

The UN-Habitat Strategic Plan 2020-2023 takes these policy considerations into account and aims to address flaws with the typical smart city vision, emphasizing the need for evidence-based decision making.



Presenter

Alexandre Barbosa | Head | Regional Center for Studies on the Development of the Information Society (Cetic.br), Brazil

“Challenges for measuring smart cities & launch of Cetic.br|NIC.br publication”

The rapid dissemination of ICTs in all segments of society has created opportunities of transforming the relationship between municipalities and their residents in an increasingly digitally connected world. At the same time, the fast adoption of ICTs by citizens, organizations and governments poses new demands for timely and policy-relevant ICT data and statistics.

Under this context, Cetic.br produces ICT indicators and statistics to contribute to building inclusive knowledge societies through ICTs in Latin America and Portuguese-speaking countries in Africa.



Better use of better statistics leads to better policies – and improved accountability. In turn, good statistics are critical to measure the impact of evidence-based policies at the local government level.

Thus, measuring the implementation of smart cities in local contexts is essential to monitor the progress made by cities in promoting digital services and ICT-based urban management solutions.

In this scenario, municipalities will be required to increase their capacity to produce specific ICT-related statistics to help policymakers craft better policies. It is not possible to manage or change what

you cannot measure and without data there is no visibility, without visibility there is no prioritization in the political agenda.

Therefore, this webinar has been of great relevance, gathering experts from different countries to showcase successful experiences in implementing and measuring smart cities in different contexts.

Also, the NIC.br Sectorial Study "Information and Communication Technologies in Urban Management: challenges for measuring smart cities" that was launched during this event features several articles that explore the complexities of defining and measuring smart cities.



Presenter

Tania Marcos | Head of Smart Sustainable Cities, Spanish Association for Standardization (UNE) | Vice-chairman, U4SSC

“United for Smart Sustainable Cities (U4SSC) - a UN initiative”

Global initiatives such as United for Smart Sustainable Cities (U4SSC) can help align technologies to cities' and communities' sustainability targets.

U4SSC is coordinated by ITU, UNECE and UN-Habitat, and supported by CBD, ECLAC, FAO, UNDP, UNECA, UNESCO, UNEP, UNEP-FI, UNFCCC, UNIDO, UNOP, UNU-EGOV, UN-Women and WMO to achieve Sustainable Development Goal 11: "Make cities and human settlements inclusive, safe, resilient and sustainable".

It serves as the global platform to advocate for public policy and to encourage the use of digital technologies and ICTs to facilitate the transition to smart sustainable cities.



In particular, U4SSC provides the perfect global platform for leveraging frontier technologies and is currently helping over 100 cities and communities worldwide with tools to measure their smartness and sustainability based on the Sustainable Development Goals. This includes several cities in Latin America that now have the means to produce relevant policy that is rooted in actual data via the U4SSC KPIs. There are close to 100 KPIs that cities can measure and report.

These KPIs provide cities a way to quantify, measure, report and monitor progress along their smartness and sustainability pathways to achieve the UN SDGs, in particular SDG 11: “Make cities & human settlements inclusive, safe, resilient and sustainable”.

The U4SSC KPIs belong to three overarching dimensions of a smart sustainable city. These are: Economy, Environment, and Society and Culture. So, through their comprehensive framework that enables both top-down and bottom-up analysis, the U4SSC KPIs tell the complete story of a city’s smartness and sustainability.

ITU’s implementation of the U4SSC KPIs is resulting in many free resources available on the U4SSC website, such as the City Snapshot, Verification Report, Factsheet, & Case Studies. These reports benchmark and elaborate the findings from the implementation of the U4SSC KPIs in the city - providing useful analysis, important lessons learned, actionable recommendations and other key insights for the city’s future smartness and sustainability.



Presenter

Daniela Naufel Schettino |
General Coordinator of
Telecommunications Infrastructure
Projects | Ministry of Communications
(MCOM), Brazil

“Smart Sustainable Cities”

Brazil’s Digital Cities programme started in 2012 and consists of the implantation of local digital communication networks in Brazilian municipalities, interconnecting public agencies, with the offer of access points in public spaces. It has been deployed in 176 cities and has led to further development of public policy for smart cities.

As part of this effort, Brazil started to capture its current state of smartness and sustainability by piloting the ITU Smart Sustainable Cities Maturity Model (SSC-MM) published in the international standard, Recommendation ITU-T Y.4904. Brazil’s aim is to understand the maturity level of its key cities and the kind of action that is needed from the relevant level(s) of government.



In implementing the standard, however, Brazil realized that it still needed adjustment in application, so the country developed an assessment system to determine what the right indicators would be for the Brazilian context. As a result of this assessment, it added two new levels on compliance and engagement to the SSC-MM for Brazil. Of the total proposed KPIs, it chose 80 to apply in Brazilian cities and communities.

The initiative is currently building a web-based platform in partnership with CTI Renato Archer for cities and communities to

provide their relevant data and documents. These, combined with already known data, will then be used to assess various cities and communities for different levels of SSC maturity.

Through greater use of smart technologies, Brazilian municipalities will be able to achieve, more quickly, their objectives for urban development in a sustainable manner, which will generate wealth, strengthen the economy and enable new forms of work and income for citizens in Brazil.



Presenter

Pere Fuset | Counsellor for Digital Agenda and Electronic Administration | València, Spain

The city of València, Spain has many practical examples to offer related to how it instituted its smart sustainable city projects, the many partnerships it cultivated and the initiatives it joined to measure its SSC progress, including the U4SSC initiative. In particular, València has benefitted significantly from its VLCi smart city platform (which is also being studied in the U4SSC Thematic Group on City Platforms).

In 2014, València began the process of becoming a smart city and was one of the first European cities to have a city platform based on open and interoperable standards. The process followed was aligned with a roadmap for integrated city management. Therefore, the VLCi Platform has been the basis of the integration of key services of the City Council.

València is currently in the process of implementing the "VLCi Impulse" initiatives. In addition, València is deploying "Connecta VLCi", which will allow easy creation of new services for citizens and information between public and private entities.



Conclusions and next steps

In conclusion, the webinar demonstrated that there is potential for frontier technologies to help develop smart sustainable cities in Latin America for a broad spectrum of use cases, including within smart government, smart environment, smart economy, smart mobility and smart citizenry, to name a few key areas.

Use cases themselves include projects to reduce the digital divide, facilitate education of students (who, for example, cannot go to school during the COVID-19 pandemic), provide internet access to rural communities, foster public-private alliances to tackle urban issues (such as through smart garbage collection or public transport modernization

initiatives), expand high-end services and promote cultural institutions and practices.

Urban representatives agreed that the pillars of municipal management should include accountability of administrations and transparency (especially in regulatory frameworks), capacity building, strengthening of institutions, public-private partnership, integration of different stakeholders, and effective urban planning. Looking at the city as an integrated set of systems is key to planning the generation and use of data.

However, the journey to become a smart sustainable city is a unique experience that is different from city to city. It is important that local and regional context are being taken into consideration.



A relevant question that was explored during the webinar is: What can be done from the national perspective to develop Smart sustainable cities?

Countries can promote the concept of standardized KPIs and adoption of a smart sustainable city conceptual framework nationally. However, for many countries, the journey is not just about indicators to measure public policy. Standards are another factor in the equation, being important so that when there is mass adoption of SSC measures, general goals can be set from an informed place & coordination of cities can happen smoothly. Such goal setting and coordination is especially important in large metropolitan areas, which need common frameworks & KPIs.



Also, it is important to remember that the deployment of technology alone may not provide complete solutions in Latin American cities and communities, as there are certain non-technical challenges holding urban Latin America back with respect to quality of life, resilience, efficiency and even happiness of citizens. In Latin America, cities are integral to countries, being platforms for not just economic activity but also of the countries' social and cultural identities.

Given the importance of cities in the region, this webinar was just one of the many activities that ITU planned together with the Brazilian Network Information Centre to support cities in the Latin American region in adopting frontier technologies to achieve sustainability targets.



Biographies



Chaesub Lee | Director | Telecommunication Standardization Bureau, ITU

Dr. Chaesub Lee was elected Director of the ITU Telecommunication Standardization Bureau at the ITU Plenipotentiary Conference 2014 in Busan, Republic of Korea, and re-elected to this post for a second four-year term at the ITU Plenipotentiary Conference 2018 in Dubai, United Arab Emirates. Dr. Lee has contributed to ICT standardization for over 30 years, specializing in areas such as integrated services digital networks (ISDN), global information infrastructure (GII), Internet protocol, next-generation networks (NGN), Internet protocol television (IPTV) and cloud computing.



Demi Getschko | Director | Brazilian Network Information Center (NIC.br)

Dr. Demi Getschko, CEO Brazilian Network Information Center (NIC.br), has been a member of the Brazilian Internet Steering Committee (CGI.br) since its creation in 1995. From 1972 through 1986, Dr. Getschko held a variety of positions at the University of São Paulo, then becoming technology director at Agencia Estado, and followed in 2000 and 2001 as Chief Technology Officer and Vice-President of Technology for iG (Internet Group). He holds BSc, MSc and PhD degrees in Electronic Engineering, and is Associate Professor in Computing Architecture at Pontifícia Universidade Católica de São Paulo.



Tatiana Jereissati | Coordinator, Sectoral Studies and Qualitative Methods | NIC.br

Tatiana Jereissati is the coordinator of Sectoral Studies and Qualitative Methods at the Regional Center for Studies for the Development of the Information Society (CETIC.br), department of the Brazilian Network Information Center (NIC.br), linked to the Internet Steering Committee in Brazil (CGI.br). She holds a post-graduate degree in Social Sciences with special mention to Gender and Public Policies from the Facultad Latinoamericana de Ciencias Sociales Argentina, a Bachelor's degree in Literature and Languages: Portuguese-French from the University of São Paulo (USP) and a Bachelor's degree in International Relations from the Fundação Armando Alvares Penteado.



Cristina Bueti | Counsellor | International Telecommunication Union

Ms. Cristina Bueti is the ITU Focal Point on Environment and Smart Sustainable Cities. She is also the Counsellor of ITU-T Study Group 20 "Internet of things (IoT) and smart cities and communities (SC&C)" at the International Telecommunication Union (ITU). She also serves as TSB/ITU focal point for Latin America. Ms. Bueti completed postgraduate studies in International Cooperation & Telecommunication Law in Europe. She also holds a specialization in Environmental Law with a focus on Telecommunications. As part of the International Women's Day 2016, Ms. Bueti was named one of 20 Geneva-based inspirational women working to protect the environment.



Martín Olmos | Undersecretary of Information and Communications Technology (ICT) | Argentina

Martin Olmos is the Undersecretary of Information and Communication Technology of Argentina. He has a degree in Political Science and a Masters in Public Policy. Before his present position he has served as a public official in several areas both for the national government and the local government of Buenos Aires and as a consultant on public policy and data science for public, private and international development organizations.



H.E. Katrina Naut | Ambassador | Dominican Republic

H.E. Dr. Katrina Naut holds a Doctorate in Law, a Master's Degree in International Trade, a second Master's in Economics, with Specialization in International Economics and International Trade, and a third Master's in Public Management. Currently, she is Ambassador, Permanent Representative of the Dominican Republic to the International Telecommunications Union (ITU) and Other International Organizations to the United Nations (WTO, WIPO, UNCTAD, UNITAR and UNRISD). Previously, she was Executive Director of Dominican Institute of Telecommunications (INDOTEL) from August 2016 to September 2018 and was Director General of the Foreign Trade and International Trade Management Administration (DICOEX) of the Ministry of Industry and Commerce of the Dominican Republic from 2006 to 2012. She has been a panelist and lecturer in Africa, Central America, the Caribbean, Europe, Asia and the United States, on key topics in telecommunications, foreign trade, investor-state dispute resolution, and matters relating to the World Trade.



Ana Maria Meiners | Mayor | Esperanza, Argentina

Ana María Meiners is the current Mayor of Esperanza, Santa Fe, Argentina. Before that, she had been elected a member of the deliberative council for the period 2005-2009. Among other positions, Mayor Meiners was President of the Alma Juniors Athletic Club of the City between 1996 and 2005 and President of the Advisory Council of the City of Esperanza between 2001 and 2005. Under her Mayorship, the Government of the City of Esperanza was recognized as one of the best administrations in the country, according to the 2017 ranking prepared by the Ministry of the Interior, Public Works and Housing of the Nation.



Javier Torner Ruiz de Temino | Coordinator of the Urban Lab | UN-Habitat, Mexico

Javier Torner has worked since 2014 in the Urban Planning, Finance and Economics Section of UN-Habitat as an Urban Development Specialist and Program Management Officer. Mr. Torner has written and participated in the implementation of urban programs, projects and plans, such as territorial and urban development strategies, planned urban extension projects, urban regeneration, urban restructuring initiatives post-disaster and adaptation to climate change, having carried out projects for the Adaptation Fund and the Green Climate Fund. He has also coordinated strategies for participation and involvement of actors as well as training on urban development at a global level and with a specific focus on Latin America and the Caribbean. Since January 2020, he is also the Coordinator of the UN-Habitat Urban Laboratory in Mexico.



Alexandre Barbosa | Head | Regional Center for Studies on the Development of the Information Society (Cetic.br), Brazil

As Head of Cetic.br at NIC.br, Dr. Alexandre Barbosa is responsible for survey projects to produce ICT statistics for the monitoring of national policies and international goals, such as the Sustainable Development Goals (SDGs). He coordinates capacity building programs in survey methodologies in Latin America and Portuguese-speaking countries in Africa. Dr. Barbosa was Chair of the Expert Group on ICT Households indicators at ITU from 2012 to 2017, expert at an OECD working party on Measurement and Analysis of the Digital Economy, member of the International Advisory Group of Experts on the Global Kids Online project at UNICEF and LSE, member of the Council Board of The Innovation Center for Brazilian Education and member of the master's program council at Fundação Dom Cabral. Dr. Barbosa holds a PhD and Master's Degree in Business Administration, an MSc in Computer Science and a BSc in Electrical Engineering.



Pere Fuset | Counsellor for Digital Agenda and Electronic Administration | València, Spain

Pere Fuset is the Counsellor for Digital Agenda and Electronic Administration for València's 2019-2023 mandate. Mr. Fuset has led many smart city projects, helped the creation of the Smart City Office and has helped position València among the leading city councils in this field. He has also worked for other civic entities and an international healthcare NGO, and various jobs in the field of digital communication and social media management.



Tania Marcos | Head of Smart Sustainable Cities, Spanish Association for Standardization (UNE) | Vice-chairman, U4SSC

Tania Marcos serves as Manager of the Standards Committee CTN178 “Smart cities” at UNE and acts as the national focal point for the development of Standards for Local Governments. She is Vice-Chair of the U4SSC initiative, where she participates in the Thematic Group on City Platforms. She is also Vice-chair of ITU-T Study Group 20 on IoT and smart cities and communities, on behalf of the Spanish Secretary of State for Telecommunications and Digital Infrastructure within the Ministry of Economic Affairs and Digital Transformation. Ms. Marcos Tania was Representative of the CEN-CENELEC-ETSI Sector Forum on Smart and Sustainable Cities and Communities, towards the European Innovation Partnership on Smart Cities and Communities (EIP-SCC) of the European Commission. She has acted as secretary, relator, expert or convenor to different European, LATAM and International structures, dealing with Quality & Sustainability for public and private sectors.



Daniela Naufel Schettino | General Coordinator of Telecommunications Infrastructure Projects | Ministry of Communications, Brazil

Dr. Daniela Naufel Schettino is a member of the Brazilian National Telecommunications Agency (Anatel) since 2007, and working at the Ministry of Communications since 2019, with projects related to Telecommunications Infrastructure and Digital Inclusion Programs. She has a PhD and MSc Degree in Telecommunications Engineer and a BSc in Electrical Engineering.



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