Digital government and meaningful connectivity: Opportunities and challenges for theory and practice

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Abstract. The panel aims to explore the role of meaningful connectivity in digital government theory and practice, identify existing gaps, and propose future research directions. The meaningful connectivity perspective, which transcends binary Internet access metrics, is generally defined by the presence of infrastructure, affordability, and digital skills—dimensions considered crucial for ensuring that low-income and vulnerable populations can effectively use digital public services. The panel discussion will also showcase practical case studies of meaningful connectivity measurement in Brazil, Chile, the Dominican Republic, and Uruguay, using the methodology developed by the Regional Center for Studies on the Development of the Information Society (Cetic.br), a UNESCO Category II center located in Brazil. By engaging experts and researchers in digital government, the panel intends to provide valuable insights for academics, policymakers, and practitioners aiming to enhance the adoption of digital public services and bridge digital divides.

Keywords. Meaningful connectivity, digital government, digital services uptake.
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1. Theme and Objectives

The theme of the panel "Digital Government and meaningful connectivity: Opportunities and challenges for theory and practice" is related to the uptake of digital government and meaningful connectivity. It focuses on examining the role of meaningful connectivity in the theory and practice of digital government. The meaningful connectivity concept extends beyond mere Internet access, incorporating more dimensions such as infrastructure, affordability, and digital skills to ensure that digital technologies can effectively benefit all, especially vulnerable and underserved populations (Castello, 2024; Macaya, 2024). In this sense, the panel seeks to explore how meaningful connectivity can affect access to digital public services and promote the uptake of digital government.

The panel's objectives are threefold. First, it aims to debate the possibilities of integrating meaningful connectivity into digital government theory and practice, focusing on the population's access to digital public services. Second, it seeks to propose future research directions that can address existing gaps in understanding the relationship between meaningful connectivity and digital government. Third, the panel will present practical case studies of

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meaningful connectivity measurement in Latin American and Caribbean countries, including Brazil, Chile, the Dominican Republic, and Uruguay, showcasing methodologies and insights derived from these experiences.

Through these discussions, the panel intends to promote a debate about the role of meaningful connectivity perspective as a framework for addressing digital inequalities and ensuring that digital public services are accessible and inclusive. The practical cases seek to highlight innovative approaches and methodological frameworks, such as those developed by the Regional Center for Studies on the Development of the Information Society (Cetic.br), offering actionable insights for policymakers, researchers, and practitioners. By connecting theoretical debates with real-world contexts, the panel aims to provide a comprehensive perspective on the opportunities and challenges of integrating meaningful connectivity into digital government initiatives and frameworks.

2. Digital government questions and issues addressed by the panel

The panel explores the gaps in literature and practice concerning the uptake of digital government services, particularly through the lens of meaningful connectivity and its intersection with digital government from an equity perspective. Meaningful connectivity has gained prominence in recent international reports and conferences, such as the ones proposed by the International Telecommunication Union (ITU) (ITU, 2022), the Alliance for Affordable Internet (A4AI) (A4AI, n.d.), the United Nations (UN) Digital Global Compact (UN, 2024), and the discussions held during Brazil's 2024 G20 Presidency (G20, 2024).

Meaningful connectivity is understood as a threshold of connectivity quality encompassing multiple dimensions, such as infrastructure, affordability, and digital skills, rather than a binary measure of access (Alliance for Affordable Internet (A4AI), n.d.). It is proposed to be measured at the individual level, providing a granular understanding that population-wide indicators fail to capture. This construct underscores that merely having Internet access does not equate to meaningful access, especially when considering digital government services (Macaya, 2024). This is crucial for ensuring that low-income and vulnerable populations, who typically experience lower levels of connectivity, can effectively benefit from digital technologies (Belánger & Carter, 2009; Helbig et al., 2009).

The shift towards meaningful connectivity has significant implications for digital government research, policy, and practice. Despite its relevance in addressing digital inequalities, studies of meaningful connectivity through a digital government lens remain limited. Furthermore, comprehensive governmental policies addressing meaningful connectivity are still in early development. In this context, Cetic.br, a Category II UNESCO center and a department of the Brazilian Network Information Center (NIC.br) located in Brazil, developed a methodological framework for measuring meaningful connectivity based on data from its annual ICT Households survey (NIC.br, 2024). This nationally representative probabilistic study, conducted since 2005, identifies the adoption and ownership of information and communication technologies (ICT) among individuals 10 years old or older in Brazil (NIC.br, n.d.). Cetic.br´s methodological model for measuring meaningful connectivity is also being applied in Latin American and Caribbean countries, such as Chile, the Dominican Republic, and Uruguay, with plans for implementation in seven African countries, among other nations. Based on this context, the panel aims to highlight the opportunities and challenges of implementing the meaningful connectivity framework in digital government research and practice by addressing the following questions:

- What are the key dimensions and indicators of meaningful connectivity, and how do they impact the uptake of digital government services?
    - Exploring the relationship between meaningful connectivity and digital government service adoption.
    - Examining the implications of meaningful connectivity dimensions, such as infrastructure, affordability, and digital skills.
- How can meaningful connectivity be effectively measured and operationalized in diverse contexts, particularly in Latin America countries?
    - Discussing the methodological approaches and challenges in measuring meaningful connectivity.
    - Presenting case studies from Brazil, Chile, the Dominican Republic, and Uruguay.
- What policy recommendations can be derived from a meaningful connectivity approach to improve digital government services theory and practice?
    - Proposing actionable policies and scientific strategies to enhance meaningful connectivity frameworks in both literature and practice.
    - Identifying best practices and lessons learned from countries, especially Latin American initiatives.

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By addressing these questions, the panelists hope to foster a deeper understanding of meaningful connectivity's role in digital government and inspire future research and practical applications to enhance the adoption of digital public services, and bridge digital divides.

3. Benefits of discussed topics for attendees and research

Conference attendees will have the opportunity to explore the intersection of digital government and meaningful connectivity, including current debates and identifying gaps in both literature and practice. Additionally, they will be introduced to the methodology developed by Cetic.br for measuring meaningful connectivity and its results in Latin American and Caribbean countries.

The panel aligns with the conference theme "Digital government fostering social cohesion for reducing inequalities", as panelists seek to discuss strategies to enhance meaningful connectivity in the context of digital inequalities and its policy implications for ensuring equitable access to online public services. It also fits with both conference tracks 8 (Digital Government for Stronger Society) and 23 (Dialogues about Latin America).

4. Format

The panel is structured as an interactive session. The planned format is a plenary with short presentations from each expert and Q&A from the audience. The schedule is presented below:

• Session Introduction (Session moderator – up to 10 minutes)

• Short presentations from panelists (up to 10 minutes per panelist)

• Q&A from audience and moderator

• Closing comments and session summary (moderator and panelists)

3. Panel composition

The moderator is Manuella Maia Ribeiro, ICT Research Projects Coordinator from Cetic.br (Brazil). She is a digital government and public administration specialist coordinating the Brazilian ICT Electronic Government survey since 2013. She holds a PhD and Master's degree in Public Administration and Government from the Getulio Vargas Foundation (Brazil), a bachelor's degree in public policy management from the University of São Paulo (Brazil), and Law from the Mackenzie Presbyterian University (Brazil). She is a visiting expert at the United Nations University Operating Unit on Policy-Driven Electronic Governance (UNU-EGOV).

Professor Maria Alexandra Cunha, from Fundação Getulio Vargas (Brazil), brings her extensive background in digital government, ICT governance, and smart cities. Her work focuses on how governments can leverage technology to enhance public service delivery, reduce inequalities, and foster inclusive digital transformation. At FGV, she also leads the IT and Government area in the Center for Public Administration and Government (CEAPG).

The panel also features Professor Elsa Estevez, Universidad Nacional del Sur (Argentina). She is an internationally recognized researcher in digital government. She has consulted for governments, taught public managers and policymakers, and organized events about digital government in over 30, mostly developing countries. Her research interests cover structuring the information technology function in government, the digital transformation of government-citizen relationships, and the impact of such transformation on nations' and cities' capacity to pursue sustainable development. She has a PhD in Computer Science from Universidad Nacional del Sur.

The panellists include J. Ramon Gil-Garcia. Gil-Garcia is a professor at the University at Albany, SUNY, and Director of the Center for Technology in Government (CTG). His research focuses on digital government, inter-organizational collaboration, and digital inclusion. He has published extensively on smart cities, AI in public administration, and data-driven decision-making. With his experience, Professor Gil-Garcia has contributed to discussions on technology's role in public sector transformation.

Together, the panellists and the moderation will provide a multifaceted perspective on the role of meaningful connectivity in digital government, drawing from their extensive research and practical experience in many countries. Their contributions aim to bridge gaps in theory and practice, offering actionable insights for advancing inclusive and effective digital government.

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