

Redefining the Smart City within the European Digital Society

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Abstract: *Based on the understanding that the EU is building a value-based digital society, this research aims to recapture the narrative of the smart city and to introduce the latter as an actor in EU digital policy. It starts from the acknowledgement that smart cities are reduced to mere business-led strategies and lack direct grassroots engagement that would bring value to the urban landscape. Then, it deconstructs the main pillars of the digital society as proposed by the current Commission and searches for areas of congruence between smart cities and the model for the digital society. To illustrate this congruence, the article analyses policy documents at the European and local level and features a case study of Darmstadt, designated Germany's Digital City in 2019.*

Keywords: *European Union, digital policy, digital society, smart city, governance.*

Introduction

European leaders have actively promoted “the European-style digital society”² in recent years, this being a new narrative focused on principles and values that distinguish the European Union (EU) from other tech powers. This model has evolved and the story is different now. As with many other policies, the national-European balance still has a good grasp on the governance of digital policies, which disregards other valuable actors for the advancement of this new narrative. Aiming to push the digital policy ecosystem further, this article expands the area of relevant actors in digital policies by introducing the local level into the policy mix. In their own microcosm, cities pursue their own digital transformation by means of smart city strategies, essentially local development strategies with digital at their core. The cities are key actors in the narrative of the digital society given their proximity to the citizens. However, the smart city literature focuses too much on business-friendly smart cities, revealing a narrative built around utopian smart cities³. In this sense, the assumption of this research is that the EU digital policy needs to recapture the smart city narrative to translate the principles of the European digital society to the local level.

This article aims to answer the following research questions: what is the congruence between cities and the EU in terms of constructing their digital society models? How can smart cities feed into the value-based digital society? The theoretical

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² European Commission, *Berlin Declaration on Digital Society and Value-Based Digital Government*, March 2021, <https://digital-strategy.ec.europa.eu/en/news/berlin-declaration-digital-society-and-value-based-digital-government>, accessed January 20, 2022.

³ Ola Söderström, Till Paasche, and Francisco Klauser, “Smart Cities as Corporate Storytelling,” *City* 18, no. 3 (May 2014): 307–320.

research is backed up by a case study of Darmstadt, Germany's Digital City in 2019. Darmstadt is a developed city, without any close connections to EU policy or projects. The research will provide valuable insights for translating the principles of the European digital society closer to the citizen, considering the claims that the digital society will be human-centred⁴. This research aims to recapture the narrative of the smart city from a corporate, business-oriented view and bring it closer to the idea of the city as a true community.

Firstly, the conceptual framework of this article is founded on the constructivist paradigm according to which the values and norms of an entity shape the structure of the system. The EU is shaping the digital space by building new values, such as the protection of personal data. Secondly, to address the significance of local actors in digital policies, the research details multilevel governance (MLG). It also reviews smart city literature to highlight the significance of smart cities in digital policies. The article reflects upon the congruence between the model and the EU vision towards the digital society, with the purpose of recapturing the smart city and channelling it in EU policymaking. This congruence is illustrated by the case study analysis of Darmstadt to zoom in on a local digital transformation strategy that mirrors the EU discourse.

A few methodological notes are necessary here. The core of the empirical research is based on document analysis, specifically the policy documents of the digital strategy of the EU and the Digital City strategy of Darmstadt. At the European level, the document analysis is based on documents that help construct the model of the digital society, namely the *Communication on Shaping Europe's Digital Future*, the *Berlin Declaration on the Digital Society and Value-Based Government*, *2030 Digital Compass*, *The European Way for the Digital Decade*, and the *European Declaration on Digital Rights and Principles*. The choice of documents is relevant considering that the EU has crystallized a vision for the digital society for the first time, following the accepted equivalence between the online and the offline worlds. In its push both for internal regulation and harmonization and for external validation as a bona fide player in technology issues, the EU has chosen to pursue the value-based discourse. Its application depends not only on the European level, but also on the other decision-making levels.

To maintain this equivalence of analysis, the local level is studied with the help of Darmstadt's digital city strategy. The city's commitment to a different vision of the smart city has not been influenced by the European discourse, but nevertheless it illustrates the commitment of the local level to a set of values that are congruent with the European discourse and narrative. This is the motivation for the choice of Darmstadt as a case study, as it has no direct affiliation and inspiration from the European policy environment, but it reinforces this narrative at the local level and it can serve as an example.

1. Theoretical framework

This research offers a constructivist perspective on how the EU is shaping the digital society by proposing a value-based discourse and implementing it with concrete policy solutions. In the general agent-structure debate, this paper argues that actors, such as the EU and cities, shape the structure of the digital society by offering a foundation based on values and principles that translate into policies. The EU shapes the structure by

⁴ European Commission, *Europe's Digital Decade: Digitally Empowered Europe by 2030*, March 2021, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_983, accessed 20 January 2022.

means of Europeanisation, building new values, principles, and policies at the local level. The Europeanisation process offers the theoretical foundation so that it can bring together a clear view of how European integration can be fostered at the local level by creating a congruence between the city and the European digital society. The second layer of the theoretical framework refers to MLG. Its utility stems from its initial conceptualization as a shift of EU governance meant to connect to the local level in different policies. A concise description of its key features is necessary to reflect conceptual clarity and to form the foundation for the empirical analysis.

First, MLG considers several types of authorities that interact in a loose manner to achieve an objective. They are organized in levels or in *spheres of authority*, as Rosenau has proposed⁵. The classification of levels is up for debate. Analyses consider that they are mostly territorial, but they can also be functional.

Second, MLG refers to vertical relations among the three levels or spheres within the EU policymaking, considering the context of innovative governance⁶. According to the authors of this theory, these “nested” levels or spheres of authority do not contain a hierarchical component. MLG has a relaxed structure with no real formalities in the sense of top obligations to be implemented by the lower levels⁷. In terms of structure and the top-bottom or bottom-up directions of policies, there is also no obligation that all levels participate, and this is yet another sign of the relaxed nature of MLG. This can be seen as the basis for the greater involvement of local and/or regional actors within EU policymaking.

The slow development of an open policy environment has opened the door for more actors to be involved in various types of policy issues. The most prominent are regional authorities. This brings the discussion to the third feature of MLG, namely its outreach outside the traditional European-national dichotomy in European studies. As it was not developed to settle the debate between the two levels, researchers used it to explain the growing number of actors involved in EU policies, given that integration expanded to new areas. The emergence of structural funds within the regional policy of the EU marked this transition towards MLG, considering that the funds provided were to be absorbed at a regional level. Marks et al. are the first to develop this model by illustrating the reality of regional policy⁸. The commitment to achieve socio-economic cohesion that required a regional approach was the motivating factor for the involvement of the regional authorities in EU affairs. Nevertheless, the concept has evolved beyond this initial conceptualization and has been used to explain various policy areas, such as environmental policy⁹.

Additionally, it has been used extensively with different definitions and approaches. This might cause conceptual confusion for any theoretical or normative

⁵ James N. Rosenau, “Governing the Ungovernable: The Challenge of a Global Disaggregation of Authority,” *Regulation & Governance* 1, no. 1 (2007): 88–97.

⁶ Liesbet Hooghe and Gary Marks, *Multilevel Governance and European Integration* (Oxford: Rowman and Littlefield Publishers, 2001).

⁷ Jon Pierre, “Multilevel Governance as a Strategy to Build Capacity in Cities: Evidence from Sweden,” *Journal of Urban Affairs* 41, no. 1 (January 2019): 103–116.

⁸ Gary Marks, Liesbet Hooghe, and Kermit Blank, “European Integration from the 1980s: State-Centric v. Multi-Level Governance,” *Journal of Common Market Studies* 34, no. 3 (September 1996): 341–378.

⁹ Miranda A. Schreurs and Yves Tiberghien, “Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation,” *Global Environmental Politics* 7, no. 4 (November 2007): 19–46.

analysis. Bache reflects on the fact that there is no single accepted definition of the term within the academic community¹⁰. Stephenson argues that MLG has been used as a “catch-all” term meant to explain new developments in EU policymaking¹¹. At the same time, Scharpf argues for the development of a series of concepts within the ‘multilevel umbrella’ that can capture the interactions between actors situated at various levels, such as joint decision-making, hierarchical direction, or mutual adjustment¹².

The last relevant issues identified for this research refer to the fluid and perceived dual nature of MLG, first its applicability as a theory of European integration or as a theory of public policy¹³ and, second, the focus on territorial and functional governance¹⁴. Tortola references the duality of the MLG definition, but insists that it is useful for explaining policy developments. These all point to the fact that MLG is developing into a theory of public policy, considering the focus on actors, processes, and structures. On the other hand, Bache also references the lack of normative dimension of MLG, considering that it merely explains the emergence of new actors and provides a framework for new types of actors to interact in policymaking, without developing a path for action¹⁵.

This research aims to tackle the fluid features of MLG. First, the congruence between smart city and digital society narratives will reveal that MLG can be a theory of European integration, based on the transfer of the principles of the European digital society at the local level, within a process of Europeanization. In turn, this transfer can translate into coherent digital policies at the local level. Secondly, the usefulness of the concept resides in its flexibility and ability to help explain regular interactions among actors at various institutional levels in policy areas that are growing increasingly, such as digital policy. In this sense, it can help streamline the knowledge about the application of digital policy at various institutional levels.

Summarizing, the theoretical framework makes use of the general constructivist perspective to indicate the focus on norms and values within the digital society and smart city discourses. The MLG perspective contributes to conceptual and theoretical clarity by providing a foundation for the analysis of European and city discourses related to digital policies.

2. Deconstructing the EU digital society

The European Commission has chosen digital transformation for one of its political priorities for the 2019-2024 mandate. Previously, the Commission completed the Digital Single Market (DSM) by focusing on regulatory reform. The discussions around the DSM were technical, from data protection reform to interoperability or cross-

¹⁰ Ian Bache, *Multi-Level Governance in the European Union* (Oxford University Press, 2012), <https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199560530.001.0001/oxfordhb-9780199560530-e-44>.

¹¹ Paul Stephenson, “20 Years of Multilevel Governance: Where Does It Come From? What Is It? Where Is It Going?” *Journal of European Public Policy* 20 (2013): 818.

¹² Fritz Scharpf, “Multi-Level Europe – The Case for Multiple Concepts,” in *Handbook on Multi-Level Governance*, Elgar Original Reference Series (Edward Elgar, 2010), 66–80, <https://books.google.de/books?id=afODmAEACAAJ>.

¹³ Pier Domenico Tortola, “Clarifying Multilevel Governance,” *European Journal of Political Research* 56, no. 2 (May 2017): 237.

¹⁴ Bache, *Multi-Level Governance in the European Union...*, 585.

¹⁵ *Ibidem*.

border commerce¹⁶. The benefit to the citizen was clear, but the policies had a European and a national outlook, with legislation on copyright, data protection or interoperability. During this time, the Commission undertook policy initiatives to boost uptake of technologies at the local level, with the *Digital Cities Competition* or the current *Intelligent Cities Challenge*¹⁷. Currently, the Commission is supporting the *Smart Cities Marketplace* as a “a major market-changing undertaking that aims to bring cities, industries, SMEs, investors, researchers and other smart city actors together”¹⁸. These are examples of network governance encouraged by the European Commission, as they are places where best practices, services or data are shared amongst the cities participating in the project. Nevertheless, the approach is focused on solutions and not on principles and values underpinning them.

The current Commission shifted the discourse towards principles and started the discussion around a model for a digital society with clear benefits for the citizens. This section deconstructs the European digital society that may serve as a model for smart cities.

In 2020, the Commission revealed its vision for digital transformation by presenting a model for a digital society based on principles and values where technology would play a role in enforcing and not in challenging them. Unlike the DSM Strategy, which had a clear regulatory focus with an economic outlook, the Communication entitled *Shaping Europe’s Digital Future* unveils a different vision, as the EU claims its choice to “pursue digital transformation in its own way”. It announced a new model for the digital society with the three pillars: technology that works for the people, a fair and competitive economy, an open, democratic, and sustainable society¹⁹. Trust is the centre pillar of this model, as the Communication enforces the idea that citizens need to trust digital solutions so that they can make use of them properly. For this purpose, technology used in the EU must respect the “democratic values, respect fundamental rights, and contribute to a sustainable, climate neutral and resource-efficient economy”²⁰. Other values, such as fairness or empowerment, are at the centre of this strategy, but up to this point, the concept is rather vague.

In late 2020, the member states signed the *Berlin Declaration on Digital Society and Value-Based Digital Government*, whose principles shed a light on the foundations of the European digital society, as follows:

- Fundamental rights and democratic values – the rule of law, human dignity, right to autonomy, ethical values, freedom of expression, transparency, privacy
- Social participation and digital inclusion to shape the digital world
- Empowerment and digital literacy – protection of personal data, digital-

¹⁶ European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and to the Committee of the Regions. A Digital Single Market Strategy for Europe*, May 2015, <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0192&from=EN>, accessed 20 April 2022.

¹⁷ Intelligent Cities Challenge, *Intelligent Cities Challenge*, 2020, <https://www.intelligentcitieschallenge.eu>, accessed 20 April 2022.

¹⁸ European Commission, *Smart Cities Marketplace. About This Site*, 2022, <https://smart-cities-marketplace.ec.europa.eu/about>, accessed 20 April 2022.

¹⁹ European Commission, *Communication. Shaping Europe’s Digital Future*, February 2020, 3, https://ec.europa.eu/info/sites/info/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf, accessed 20 April 2022.

²⁰ *Ibidem*.

by-default, citizen autonomy, “lifelong learning and development of digital skills”

- Trust and security in digital government interactions
- Digital sovereignty and interoperability
- Human-centred systems and innovative technologies in the public sector – responsibility and accountability in the use of AI, elimination of social and economic biases
- A focus on well-being in the digital society²¹

Finally, the puzzle of the European digital society is completed by the *Declaration on European Digital Rights and Principles*, as well as the *2030 Digital Compass: the European way for the Digital Decade*. They highlight the long-term vision of the digital society and the concrete policies to achieve it. The Declaration clarifies the list of digital rights and principles, as follows:

- Putting people and their rights at the centre of the digital transformation
- Solidarity and inclusion
- Freedom of choice online
- Participation in the digital public space
- Safety, security, and empowerment of individuals
- Sustainability of the digital future²²

According to the *Digital Compass*, “the European way to a digitalised economy and society is about solidarity, prosperity, and sustainability, anchored in empowerment of its citizens and businesses, ensuring the security and resilience of its digital ecosystem and supply chains”²³. This definition reflects the principles previously mentioned. The strategy focuses on the concrete steps on four major areas of policy intervention for 2030, namely skills, businesses, infrastructures, and government. Each point provides a concrete target to be achieved, such as a target of 80% of the population that should have basic digital skills by 2030 or that all key public services should be online by 2030. All these targets reflect and reinforce vision expressed by the Commission. For instance, the 80% target points to the empowerment of citizens, as well as making sure that they understand and control the use of their personal data, that they can use digital public services and are not excluded from the digital society.

Policies at the European, national, and local level are necessary for these targets to be achieved and, conversely, for the values to be internalized. The Cohesion Policy priorities for 2021-2027 and the Resilience and Recovery Framework (RRF) are set to implement these values and norms into policy and projects. For instance, the one of the five priorities of the Cohesion Policy is *a more competitive and smarter Europe*²⁴. Such a priority sets the tone for the national and regional efforts for accessing funds. Romania’s regional development planning includes priorities, such as *A region with smart towns and*

²¹ European Commission, *Berlin Declaration on Digital Society and Value-Based Digital Government...*

²² European Commission, *European Declaration on Digital Rights and Principles*, January 2022, <https://digital-strategy.ec.europa.eu/en/library/declaration-european-digital-rights-and-principles>, accessed 18 February 2022.

²³ European Commission, *2030 Digital Compass. The European Way for the Digital Decade*, 2021, 2, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=75375, accessed 20 February 2022.

²⁴ European Commission - Regional Policy, *Priorities for 2021-2027*, 2021, https://ec.europa.eu/regional_policy/en/policy/how/priorities/, accessed 21 April 2022.

cities or *A digital region*, with proposed actions that emulate major challenges of the smart city²⁵. Similarly, the particularity of the RRF is that it requires that 20% of the national funding be spent on digital transition priorities and this has set in motion plans for digital transformation across the European Union. The governance and monitoring mechanism of the Digital Decade states that cohesion programmes and the RRF are sources for the implementation of the changes required by the abovementioned programme. Hence, not only does the EU aim to set the norms and values for the digital society, but it ties them together with funding to ensure that they are materialised.

The discourse on the value-based digital society aims to provide a shift from the tech-led digital society, marked by digital divides, loss of autonomy of citizens, and cybercrime. In this sense, it is a constructivist discourse. At the same time, the concrete steps meant to achieve this vision mirror the interaction of different decision layers or spheres of authority theorized by MLG. The European level creates the vision and collaborates with the national level to achieve it. At the same time, the national level may create its own roadmap for the completion of the policy objectives, but the European level supervises its implementation. Since achieving these objectives and enacting this vision are wide-ranging and have deep implications for society in general, other actors need to be involved in the process. The next section reflects on smart cities as additional actors that can help implement the vision of the European digital society.

3. Deconstructing the smart city. Narratives and governance

Smart city analyses focus on this “fuzzy” concept and lament over a missing unifying definition²⁶. Meta-analyses assume certain features of smart cities from the variety of definitions and discourses²⁷. Instead of addressing the same claims, this section works towards integrating the city and its smart city governance into the architecture of multi-level digital policies in the European Union. To do so, it will focus on two aspects, the narratives that shape the smart city and smart city governance.

Narratives help build up goals and means to achieve them, shaping the power structures tasked to pursue them²⁸. Once the administration establishes the required outcomes for the smart city, it looks towards actors who can fulfil them. In the spirit of technocratic governance and entrepreneurialism²⁹, their autonomy allows them to shape the smart city, but in collaboration with information and communication technology (ICT) companies who are in possession of the tools to achieve this vision. Since other

²⁵ The Romanian Regional Development Planning has changed as of the 2021-2027 period. Each NUTS II region, the development region, has drawn up its own Regional Operational Programme. See for instance: <http://regio-adrcentru.ro/wp-content/uploads/2022/01/POR-Centru-21-27-noiembrie-2021.pdf> or <https://www.nord-vest.ro/regio-2021-2027/>, accessed 21 April 2022.

²⁶ Annalisa Cocchia, “Smart and Digital City: A Systematic Literature Review,” in *Smart City. How to Create Public and Economic Value with High Technology in Urban Space* (Cham: Springer, 2014), 13–45; Andrea Caragliu, Chiara Del Bo, and Peter Nijkamp, “Smart Cities in Europe,” *Journal of Urban Technology* 18, no. 2 (April 2011): 65–82; Margarita Angelidou, “Smart City Policies: A Spatial Approach,” *Current Research on Cities* 41 (July 2014): S3–S11.

²⁷ Simon Joss et al., “The Smart City as Global Discourse: Storylines and Critical Junctures across 27 Cities,” *Journal of Urban Technology* 26, no. 1 (January 2019): 3–34.

²⁸ James A. Throgmorton, “Planning as Persuasive Storytelling in a Global-Scale Web of Relationships,” *Planning Theory* 2, no. 2 (July 2003): 125–151; Leonie Sandercock, “Out of the Closet: The Importance of Stories and Storytelling in Planning Practice,” *Planning Theory & Practice* 4, no. 1 (January 2003): 11–28.

²⁹ David Harvey, “From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism,” *Geografiska Annaler. Series B, Human Geography* 71, no. 1 (1989): 3; Rob Kitchin, “The Real-Time City? Big Data and Smart Urbanism,” *GeoJournal* 79, no. 1 (February 2014): 1–14.

actors are part of this vision, the power structure grows more complex, and a particular governance structure is necessary. Narratives help shape the governance of the smart city.

There are two main narratives that shape the smart city perspective. The mainstream discourse focuses on business-related aspects. In this vision, companies create the narrative of a utopian city whose problems have all been solved through technology³⁰. The city is a system working efficiently by means of ICT innovations³¹. Concerned with a skewed perspective, the literature has fought back with critical perspectives that challenge this overly optimistic view. Researchers describe an alternative view towards smart cities, which should consider citizens equally when introducing technology in the city. Citizens are not only at the receiving end of technology, but they are also partners in decision-making and implementation. For that matter, the search for the smart city should start from an exploration of social problems, social groups, and struggles in urban places³², which does not happen in a business-led smart city. The contrast with the previous narrative is clear, in the sense that citizens share the same concerns and aspirations, needs, and resources in the utopian city. Based on this assumption, technology is likely to solve everybody's problems just because they are the same for everyone. The ignorance of diverse citizen experiences is the main critique of the mainstream view.

This research elevates cities from being passive entities that merely apply innovations designed by others and await significant changes. Cities shape the local community with technology by enabling transformations based on principles and true collaboration with local actors. In this narrative, the smart city is a fully-fledged actor with a deep understanding of the community it represents and with a balanced vision of digital transformation. The model of the European digital society fits with this vision. Based on this understanding, it sets principles for the use of technology and creates governance structures, mechanisms, and processes to put its vision in practice. The governance of the smart city is significant for this analysis, considering that it can and should respect the principles of inclusion, openness, and transparency, announced by the literature³³. The model of the digital society emphasizes these principles as well.

The governance pillar is a significant part of the smart city agenda³⁴. Authors view it as 'smart governance' that comprises political participation, e-government services or how the administration works³⁵. Its components may include participation in decision-making, public and social services, transparent governance, and political strategies³⁶. The role of governance is, hence, to support decision-making, implementation, and evaluation of policies at the local level³⁷. As opposed to the traditional view of government,

³⁰ Robert G. Hollands, "Critical Interventions into the Corporate Smart City," *Cambridge Journal of Regions, Economy and Society* 8, no. 1 (August 2014): 61–77; Ola Söderström, Till Paasche, and Francisco Klauser, *Smart Cities as Corporate Storytelling...*

³¹ Ola Söderström, Till Paasche, and Francisco Klauser, *Smart Cities as Corporate Storytelling...*

³² Colin Mcfarlane and Ola Söderström, "On Alternative Smart Cities: From a Technology-Intensive to a Knowledge-Intensive Smart Urbanism," *City*, June 2017, 2.

³³ Joss et al., *The Smart City as Global Discourse: Storylines and Critical Junctures across 27 Cities...*

³⁴ Rudolf Giffinger et al., "Smart Cities. Ranking of European Medium-Sized Cities," October 2007, http://www.smart-cities.eu/download/smart_cities_final_report.pdf, accessed 22 April 2022.

³⁵ *Ibidem*, 11.

³⁶ *Ibidem*, 12.

³⁷ Andrea Caragliu, Chiara Del Bo, and Peter Nijkamp, "Smart Cities in Europe," *Journal of Urban Technology* 18, no. 2 (April 2011): 65–82.; Margarita Angelidou, "Smart City Policies: A Spatial Approach," *Current Research on Cities* 41 (July 2014): S3–S11.

governance also entails variety in terms of actors, regardless of their interests.

Several smart governance approaches exist in literature. Meijer and Bolívar designate three types of smart cities, with a focus on technology, on smart people, and on collaboration³⁸. Smart cities with a governance focus are only as smart as the collaboration between stakeholders³⁹. Also, the focus is on the citizen, while their interaction should result also in innovation⁴⁰. Smart cities need more than open channels of communication with various actors – businesses, academia, the civil society – they also need to take advantage of the benefits offered by technologies enabling their communication and decision-making process. In this sense, there should be a synergy between the use of technology and the governance cycle, aimed at tackling diverse challenges⁴¹.

Civic participation can be considered of high importance for governance, for two reasons. First, the relaxed governance structure would bring other social categories to the decision-making table, making it more democratic. Second, the accumulation of grassroots information is valuable for the development of smart governance processes⁴². In terms of smart governance, the adjective ‘smart’ refers also to the inclusion of ‘grassroots’ intelligence that only citizens can provide. Citizens are also producers and owners of data, as well as active actors within the life of the city⁴³. They are not passive recipients of the innovative technology; they interact actively with it and the goal is to help them create new digital routines in the relation to the city. Hence, technology should be used both to enhance decision-making processes and to improve citizens’ interactions with the city. This comprises a wide array of mechanisms, from the mere possibility to pay taxes online to connectivity across the territory or e-health policies.

Nowadays, the literature trend is to emphasize the role of the citizens in the smart city governance⁴⁴. In this sense, a city is as smart as its citizens⁴⁵. However, this does not refer only to digital skills, but also to their active engagement with the smart city process, which is the basis for the alternative smart city⁴⁶. The city can become smarter if the citizens become an active part of the process, while the authorities adopt a ‘learning’ culture, being able to integrate the locals’ experience into the process. A key value is significant in this respect, namely trust, identified also by the European Union in

³⁸ Albert Meijer and Manuel Pedro Rodríguez Bolívar, “Governing the Smart City: A Review of the Literature on Smart Urban Governance,” *International Review of Administrative Sciences* 82, no. 2 (June 2016): 392–408.

³⁹ Karima Kourtit, Peter Nijkamp, and Daniel Arribas, “Smart Cities in Perspective – a Comparative European Study by Means of Self-Organizing Maps,” *Innovation: The European Journal of Social Science Research* 25, no. 2 (June 2012): 229–246.

⁴⁰ Karima Kourtit, Peter Nijkamp, and Daniel Arribas, “Smart Cities in Perspective – a Comparative European Study by Means of Self-Organizing Maps,” *Innovation: The European Journal of Social Science Research* 25, no. 2 (June 2012): 229–246.

⁴¹ Zsuzsanna Tomora et al., “Smart Governance for Sustainable Cities: Findings from a Systematic Literature Review,” *Journal of Urban Technology* 26, no. 4 (October 2019): 4.

⁴² Zsuzsanna Tomora et al., *Smart Governance for Sustainable Cities...* 3.

⁴³ Sofia Ranchordas and Abram Klop, “Data-Driven Regulation and Governance in Smart Cities,” in *Research Handbook on Data Science and Law* (Edward Elgar Publishing, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3126221.

⁴⁴ Walter Castelnovo, Gianluca Misuraca, and Alberto Savoldelli, “Smart Cities Governance: The Need for a Holistic Approach to Assessing Urban Participatory Policy Making,” *Social Science Computer Review* 34, no. 6 (November 2015): 724–739.

⁴⁵ Meijer and Bolívar, *Governing the Smart City...* 397.

⁴⁶ McFarlane and Söderström, *On Alternative Smart Cities: From a Technology-Intensive to a Knowledge-Intensive Smart Urbanism...*

its digital strategy. One key to developing the trust of citizens in technology, as well as in authority, is to have them involved in the process. The choice of governance structures, mechanisms, and processes reflects the prioritization of the citizens or the lack thereof. In turn, citizen involvement in governance reflects towards the European digital society. This paper investigates this alignment of views to recapture the narrative of the smart city.

Congruence between smart city and EU digital society

This section aims to provide an answer to the main research questions, namely what the congruence between the smart city and the European digital society is, and whether the latter can provide insights for a better model for the smart city in the European Union. Two layers provide the answer to these questions, first the theoretical analysis and, second, a small case study on Darmstadt, Germany's Digital City of 2019.

Firstly, the European digital society offers a model for redefining the smart city discourse based on the human-centred approach. The European model underlines this approach, both in its overall vision and in its policy programme and governance. One of the priorities of EU digital strategy stresses that technology needs to work for the people and not the other way around. A closer look at smart cities and the narratives around this concept sees congruence with the so-called alternative approach to smart cities, which is not tech-led, but rather aims to contribute socially as well. A similar model developed in the smart city literature is the human-centric smart city, defined as a collaborative city that practices smart governance and whose ultimate focus is the creation of public value by boosting well-being⁴⁷. Well-being and public value are significant in this conceptualization, and they mirror the vision of the European digital society.

Secondly, the European model for the digital society stresses the importance of trust in technology and the institutions developing and deploying it. Building trust requires openness, transparency, as well as co-design and co-creation of policies in terms of governance. However, the mainstream smart city narrative focuses more on the inevitable positive results that technology will bring and, in this case, trust is self-evident, given that the result of implementation of the smart city strategy will yield only benefits for the citizen. Considering that issues related to autonomy, loss of control or confidentiality have gained more attention along with the deployment of increasingly complex technology, trust is not self-evident. Trust must be built in the smart city, as well. Applying the principles mentioned in the EU declarations should be a prerequisite for the development of smart city strategies, so that citizens can feel empowered, for policies to succeed and truly solve the challenges brought about by technological development at the local level.

Thirdly, inclusion and equal access to the opportunities offered by technology are major priorities of the European digital society, stemming from the human-centric vision. At the local level, as well as the European level, citizens do not share the same opportunities and the same problems. In this sense, smart cities should also target societal issues, such as the digital divide, while making sure citizens are not left out by the sweeping changes in local digital public services, for instance. The alternative vision of smart cities presented in the previous section has based its criticism on the lack of societal outlook of traditional smart city strategies focused mainly on technological deployment

⁴⁷ Keegan McBride, Luciana Cingolani, and Gerhard Hammerschmid, *Policy Brief: Human Centric Smart Cities*, Hertie School, January 2022, <https://www.hertie-school.org/en/digitalgovernance/news/detail/content/policy-brief-human-centric-smart-cities>, accessed 15 February 2022.

regardless of its societal impact.

In addition, the model for the digital society and the smart city includes other dimensions such as sustainability and respect for the environment and even the push towards climate neutrality⁴⁸. This is an acknowledgment of the idea that digital transformation can be an enabler for other transformations, such as the green transition. Moreover, it is proof that digital transformation is not a sectoral policy area, but rather a horizontal one with vast ramifications. The European discourse on the digital society acknowledges this idea, as well as the fact that it does not bring only positive effects, but that it also comes with challenges in various areas. The mainstream view of smart cities relinquishes this balanced view and chooses to focus on the efficiency of the city powered by technology, regardless of what efficiency might mean⁴⁹.

The four dimensions provide a foundation for the transformation of the smart city discourse in the European Union to include the values, norms, and principles proposed by the policy documents.

Case study: Darmstadt

The connection between the smart city and the digital society seems to be a given, since both are concepts shaped by the deployment of digital technologies. This is not necessarily a debatable issue, but what is debatable relates to the different narratives about these concepts. Narratives are based in values and principles, and they shape strategies and policymaking. This case study will highlight the idea that cities can and do focus on a value-based smart city strategy by illustrating the areas of congruence identified above, even if the EU is not the direct inspiration.

Located in the Land of Hessen, Darmstadt is a part of the metropolitan region Rhein-Main⁵⁰. The city focused its post-war reconstruction on the development of a science and culture city, earning the title of City of Science. It has a growing population and a booming economic sector, ranked 4th in Germany and 16th in Europe in terms of the regional gross national product per capita in PPS⁵¹. The economy reflects the title of City of Science, with a major focus on aviation and space engineering, mechatronics, or pharmaceuticals. The three universities contribute to a flourishing partnership with the local business sector and the administration. In 2019, the city won a national competition for mid-sized cities to be selected as the Digital City. Its vision mirrors the value-based discourse developed by the EU, even if they have not been directly inspired by the European level.

First, the vision of Darmstadt can be circumscribed to the idea of human centric smart cities since its approach is collaborative and encourages citizen involvement. Das StadtLabor, the city's Living Lab, is the venue in which cities can test out and interact with the applications developed for the city, based on their stated vision that "more people should be able to profit from the benefits of digitalization" and that it has the task of

⁴⁸ European Commission, *EU Mission: Climate-Neutral and Smart Cities*, 2021, https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/climate-neutral-and-smart-cities_en, accessed 22 February 2022.

⁴⁹ Robert G. Hollands, *Critical Interventions into the Corporate Smart City...*: 61–77.

⁵⁰ Darmstadt, *Stadtportrait: Darmstadt*, September 2019, <https://www.darmstadt.de/standort/stadtportrait>, accessed 15 April 2021.

⁵¹ Darmstadt City of Science, *Business Facts*, 2019, https://www.darmstadt.de/fileadmin/Bilder-Rubriken/Standort/Wirtschaft/pdf_downloads_dt-eigene_publicationen/Broschuere_Business_facts_1019.pdf, accessed 22 April 2022.

“making the difficult-to-grasp digitalization tangible, understandable, and participatory”⁵². By bringing technology closer to the citizens and making it more understandable, the authorities aim to boost trust in the digital solutions implemented that might easily be misconstrued as intrusive or highly complex.

Second, the local administration has developed several other measures meant to boost public participation and create a trustworthy environment. The city’s data platform provides details with regards the major indicators of the city and it is improved with requests and feedback from citizens⁵³. Most notably, the governance structures include an ethics council, which advises the local administration on potential ethical issues regarding the use of certain technologies and has developed an ethical code to be followed by the public company that oversees the projects. The stated purpose of the Ethics and Technology Advisory Board is to help in the implementation “of the project and to avoid the danger of an almost complete digital control of people, as is the reality in part in the People’s Republic of China”⁵⁴. The reference to the digital surveillance system implemented by the Chinese Government has also been used by the European Commission in its strategy on Artificial Intelligence, as well as in its proposed legislation on the same technology⁵⁵.

Third, the Digital City project has also emphasized the need to develop digital skills of citizens, with projects, such as *Bleib Wachsam, Darmstadt*, aimed at building the awareness of citizens regarding cyber security and the protection of their personal data⁵⁶. We see a parallel with the empowerment dimension from the EU policy documents analysed in the previous section, all of which stressed the need for citizen empowerment in the online environment. Additionally, the narrative of the alternative smart city looks at the idea that citizens have different needs online and, for this reason, the Digital City project has developed digital skills training for the elderly, as well as tools for adults with learning disabilities in the project entitled *Digital für alle*⁵⁷.

Last, sustainability sits at the core of the Digital City strategy, along with the aim to be participatory, prepared for the future, valuable for the citizens, and secure⁵⁸. All major directions of the strategy should be striving for these core aims, as they underpin the entire vision of the project. In this sense, sustainability is not a simple buzzword, as care for the environment influences all the solutions that are developed within the project. A parallel can be drawn between the core principles of the European Commission strategy for the Digital Decade and this approach, considering that all policymaking and projects must be grounded in these principles.

⁵² Digitalstadt Darmstadt, *Das Stadtlabor*, 2021, <https://www.digitalstadt-darmstadt.de/stadtlabor/das-stadtlabor/>, accessed 22 April 2022.

⁵³ Digitalstadt Darmstadt, *Datenplattform Darmstadt*, 2021, <https://datenplattform.darmstadt.de/>, accessed 22 April 2022.

⁵⁴ Digitalstadt Darmstadt, *Beiräte*, 2019, <https://www.digitalstadt-darmstadt.de/digitalstadt-darmstadt/beiraete/>, accessed 22 April 2022.

⁵⁵ European Commission, *White Paper - on Artificial Intelligence - a European Approach to Excellence and Trust*, February 2020, https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf, accessed 22 April 2022.

⁵⁶ Digitalstadt Darmstadt, *Bleib wachsam, Darmstadt!*, 2020, <https://darmstadt.bleib-wachsam.de/./index.html>, accessed 22 April 2022.

⁵⁷ Digitalstadt Darmstadt, *Story: Digital Für Alle*, 2020, <https://www.digitalstadt-darmstadt.de/story-digital-fuer-alle/>, accessed 22 April 2022.

⁵⁸ Digitalstadt Darmstadt, *Strategie der Digitalstadt Darmstadt*, October 2020, https://www.digitalstadt-darmstadt.de/wp-content/uploads/Strategie_Digitalstadt_Darmstadt.pdf, accessed 22 April 2022.

Conclusions

This research has offered a constructivist perspective into the development of the European digital society, given that the EU aims to shape its structure by emphasizing the need for a foundation of values. This model is benchmarked against the local level.

The first research question aimed to identify areas of congruence between cities and the EU related to how they construct their digital society models. By analysing policy documents and the literature on smart cities, the research has found four areas where the smart cities narratives and discourses can be enriched by the European model: the human centred approach, the focus on building trust in society by involving citizens and developing open and transparent frameworks for digital transformation, the focus on digital inclusion, stemming from the human centred approach, and the perception of technology as an enabler for other transformations, such as the green transition. These areas are illustrated in the case study of Darmstadt, Germany's Digital City, seen as a model for a human-centred smart city, focused on ethics, civic participation, and sustainability. The second research question aimed to identify how smart cities can feed into the value-based digital society. The answer relates to the dichotomy in narratives related to smart cities. By adopting a human-centred vision, focused on collaboration, explainable technology, and building trust in innovations, smart cities, such as Darmstadt can contribute to the implementation of the vision for the European-style digital society, where citizens are empowered.

The ideas included in this paper contribute to the empirical development of *human centric smart cities*, where the focus is on well-being, citizen involvement, and the creation of public value. The literature on smart cities laments the mainstream view of smart cities as they are seen as business-led, missing the human approach and are solely focused on building efficiency. In terms of the contribution to the literature, this research aims to build upon the critical literature on smart cities, as well as to create yet another building block to the conceptualization of human centric smart cities.

Considering the research results, policy recommendations can be formulated to enhance the European digital society imagined at the European level and implemented locally. Smart city strategies should base their vision on the model for the European digital society explicitly. If they aim to implement this vision using European structural funds and resilience funds, they should provide arguments for how their projects will help implement the digital society model.

This research has limitations, as well. The deconstruction of the smart city narratives and governance is performed by appealing to the literature and, especially, several meta-analyses on discursive practices of smart cities. It does include a case study for further exploration, but a multiplication of the number of case studies and strategies analysed could deepen the avenues of research. Additionally, further exploration could be warranted into the governance of smart cities and how it could feed into the digital policymaking.

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