Alena Myshko
Research Fellow
Ca' Foscari university of Venice/
University of Bologna, Italy

Extended Abstract

Digital platforms for participatory smart cities: some insights from the institutional approach

The lockdowns and restrictions conditioned by the pandemic, on the one hand, have deepened the separation of nodes of many supply chains and, on the other hand, accelerated their shift to digitalisation. However, digital transformations in various sectors are aggravated by their degrees of fragmentation and remaining dependency on physical supply chains. Business transactions, relations, networks and activities were enabled by and occurred on digital platforms. The "new normal" is characterised by the permanence of these new arrangements and by a mesh of traditional and novel digital supply chain setups. Digital multi-sided platforms promise to increase the efficiency of transactions, to optimise logistics, to decrease the environmental impact caused by the transit of people and goods.

In general, the global spread of digitalization and so-called smart revolution in perceived beneficial for nations, as well as their urban and regional development. However, the new form of urban organization requires to widen economic stakeholders and third parties' participation. Digital or platform urbanism transforms usual ways of public participation in a number of ways through providing access to various social groups and wider coverage of both territories and actors (stakeholders). Digital platforms can unite not only those, who often cannot physically participate but also those who would have not considered being connected previously. The phenomenon of platform urbanism gathers increasing attention by going beyond the academic and policymaking spheres. For example, it was manifested as the theme of the Austrian pavilion at the Venice Architecture Biennale 2022 (Italy), which investigated the digital platforms and disconnects of platform urbanism. The theme focused on digital platforms as 'elevated structures' and their ability to 'open up a space for new forms of exchange that suspended the protocols of previous forms of social interaction, communication, mobility and trade' (Mortenbock and Mooshammer, 2022, p. 14).

At the same time, platforms and digital technologies are not so widely presented in different socio-economic spheres, especially in the Italian context. In general, there is a shortage of urban platforms which collect and coordinate participatory processes and their actors in one digital space, with shared logic and logistics of flows. The so-called new normal calls for not simply

a digital platform but platform strategy, which combines business, technology, and data strategy (Barns, 2020). In the local and regional development perspective, a need for a (local) platform which represents a particular territory or area and includes its variety of networks: social, economic, cultural/ educational, and others, is growing significantly. Digital multi-sided platforms promise to increase the efficiency of transactions, to optimize logistics, to decrease the environmental impact caused by the transit of people and goods. Moreover, 'smartness' in smart cities and regions is built upon, among other technologies, digital platforms which integrate tools and technologies for data management and e-participatory planning. To put in other words, a major part of smart cities' infrastructural capacities is based on the use of digital platforms. Although, only their use for participatory activities, which engage various groups of actors by transforming them into stakeholders, can serve the idea of participatory smart cities. In this context, smart city can be defines as 'a city that prospectively performs its activity in the industrial, educational, citizen participation, and technical infrastructure fields, combining them intelligently to serve its citizens' (Chamoso et al., 2018). The important aspect of our research is not just combination of those fields but also their coordination, provided by the functioning capacities of a smart or software based city.

One of the crucial advantages of digital platforms' application in local and regional development is its potential of integrated data collection, analysis and exchange. While data has already become an (economic) resource itself, at the same time it brings up more issues - social, ethical, economic. Moreover, use of data for decision making gives an advantage not only for economic but also ecological efficiency. Although, only certain actors (for example, firms and enterprises) have capabilities to collect data and even less - to analyse it. Agricultural data is often analysed by the third parties, which exchange and sell it back to stakeholders and actors. This situation disrupts connectivity and trust formation, leaving farmers and enterprises often biased against the use of digital technologies and data collection in particular. In short, inclusion of data ethics' regulations in agricultural digital platform and its operation is a way to extend trust and, in a longer run, to boost sustainability in the sector as a whole. This is one of the grand challenges our project is interested in since we believe it is an integral part of the research in digital technologies and transformations.

However, the digital economy, which is based on the added value brought by the integration of digital technologies, does not appear simply because of their use; and the digital technologies' employment does not bring the efficiency by itself and not uniformly in all spheres of economic activities. Simply an introduction of any digital technologies, including digital platforms, does not lead to a new state of urban form per se. As Auzan underlines, for the creation of digital

economy, novel technologies have to, firstly, overcome cultural barriers existing in the society. And secondly, the realisation of their economic effect requires the shift in the existing business models in particular and institutions in general (Auzan, 2019, p. 13).

Moreover, digitalisation and the applications of smart technologies is not spared evenly throughout regions and within particular territories. The general technological application and in particular efficient and adequate integration in various operations and interactions in local and regional processes are framed and often limited by a number of factors. In such a way, our research focuses on investigating of those factors, which act as barriers or enablers of technological integrations in smart city operation and functioning. With the framework of the institutional approach applied to smart cities concept, the research aims at identifying and mapping the potential advantages and challenges brought by an integration of a platform. In particular, we aim at investigating issues related to data, its power and ownership, and related transactional costsm but not limited to those.

The institutional approach is probably one of the most interdisciplinary frameworks in economic theory. It is rooted in several theoretical flows, among which the major ones are economic sociology (in particular, the theory of fields (Fligstein and MacAdam, 2012)) and the economics of conventions (Thevenot, 1984, 2001; Young, 1996). The main grounds are, however, the institutional economics or institutionalism (T. Veblen), and the new institutional economics (D.North, 1991; Olstrom, 1990; Williamson 2000, and others). The latter one concentrates majorly on how formal and informal institutions constrain or enable the behaviour of individuals and groups (DiMaggio, 1998). The approach, grows out of theoretical foundations and has been applied to policy making comparatively recently. At the heart of the approach's understating social interactions and economic transactions are institutions.

In a broad way, the institutional approach understands institutions, both formal and informal, as cultural formations based on traditions and customs. One of the founders of the institutional economics and research in economic and institutional change D. North defined institutions as 'the humanly devised constraints that structure political, economic and social interaction', which 'consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)' (North, 1997, p. 97). Hodgson (2006) has expanded the approach to institutions by defining them as 'durable systems of established and embedded social rules that structure social interactions'. Thus, institutions are systems of formal and informal rules, which set the boundaries and organise the interactions within them. Moreover, it incorporates a system of measures to ensure the implementation of rules, or an (external) enforcement mechanism (North, 1990).

One of the central concepts of the approach is institutional environment, which generally refers to ‘a series of legal systems, government governance, economic and social environment used to establish the basis of production, exchange and distribution’ (Du, 2018, p. 1942). Institutional environment includes political and economic institutions, as well as socio-cultural institutions such as informal norms (Henisz and Delios, 2015, p. 340). Culture and cultural institutions can stimulate or inhibit economic development through the structure and level of transaction costs. In turn, ‘the emergence of growth due to a decrease in transaction costs allows us to interpret the totality of sociocultural factors as a social and cultural capitals’ (Auzan, 2021, p. 18). And one of the major types of social capital is education.

In a broad way, cultural factors consist of such key elements as culture, language, religion, and education. It is important to underline that some research differentiates between institutional and socio-cultural fields on the basis of different effects produced by them. In contrast, our approach follows an undressing of institutions as cultural structures in the first place; therefore, it does not seem prospectively to attempt to distinguish them.

The institutional approach to platform urbanism and integration of digital platforms focuses majority on the role of institutions and institutional mechanisms to transform the existing practices. Within the institutional approach, ‘institutions constitute and legitimise political actors and provide them with consistent behavioural rules, conceptions of reality standards of assessment, affective ties, and endowments, and thereby with a capacity for purposeful action’ (March and Olsen, 1996, p. 249). In such a way, economic, political and other actors do not exist outside the institutional field and are institutional actors at the same time. Relations between institutions and policies Shearer at at. (2016) explain that ‘institutions, which include policies themselves, shape policy change primarily through the ways in which they create and distribute incentives and learning’ (p. 1201).

Therefore, institutions play a twofold role in the technological transition towards digital planforms in particular and smart cities in general: on the one hand, they frame the implementation and effectiveness of the novel principles and innovations. On the other hand, the existing institutional environment is changing under the new conditions. Olstrom (2009) underlines that ‘the long-term sustainability of rules devised at a focal social-ecological systems’ level depends on monitoring and enforcement as well their not being overruled by larger government policies’ (p. 422). Moreover, formal and informal institutions within the institutional environment affect this development in different ways, which are framed by the stage and regime of their functioning, reproduction, effectiveness of enforcement mechanisms

and other. In such way, the process of digital technological implementation exists in a certain institutional environment and is affected by its institutions and various factors.

Our project focuses on the digital transformations in general and digital platforms in particular, their benefits and challenges within smart cities in the Italian context. The research methodology is based on systematic literature review, qualitative document analysis, and interviews. The systematic literature review follows guidelines developed by Fink (2010) and Tranfield et al. (2003) for conducting an evidence-informed systematic literature review with a high level of transparency and reduced distortion. Following the steps in this review, the research questions and bibliographic database were selected, then at the conceptualisation step research terms were defined. Web of Science (WoS) was selected as the main database to investigate the relevant literature for the analysis, with a parallel search carried out using the same keywords on Google Scholar. This investigation focused on terms related to, firstly, digital or smart platforms, and, secondly, smart technological development and smart city in particular. The search was performed in September, 2023 and was limited by the topic parameter (title, abstract and keywords) and the WOS social-science index. The institutional approach as an analytical framework was applied to analyse the final dataset (those concepts were not a part of the key search). We have also applied both practical and methodological quality screens (Fink, 2010).

Another method which was employed alongside the systematic review is document analysis. Document analysis 'involves skimming (superficial examination), reading (thorough examination), and interpretation'; and this process 'combines elements of content analysis and thematic analysis' (Bowen, 2009, p. 32). The target documents are those related to policymaking and regulations in the sphere of smart cities on the EU level. They were found on the websites of various policymaking bodies, including the European Commission. The documents were analysed according to the same categories developed for literature review. The main objective of conducting the document analysis along with systematic literature was to bring insights into possible differences and even gaps between the policymaking presentation and approach to smart cities, and digital platforms in particular, on the hand, and its reflection in the academic debate (presented in the literature review), on the other hand. This investigation can inform not only the policymaking discourse regarding the development of smart cities, but also the possible measures to be applied to address the challenges of the increasing integration of digital platforms in cities' operations.

Interviews are planned to be conducted with several groups of participants in several selected urban participatory digital platforms in Italy, including platform designers and main

stakeholders, as a forthcoming stage. The vision of the project is that an effective, accessible and fair platform is a crucial new tool for open policy-making and citizen-responsive urban planning.

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