

Partnership and technology in urban development

- *extended abstract* -

Farkas Sára

farkas.sara@uni-neumann.hu

In the age of technology, the role of cities is becoming increasingly important, and at the same time, technology is playing an increasingly important role in the life of cities. Given that the basis of the successful cities in the 21st century is increasingly determined by the successful interconnection and networking of the actors interested in development, it is essential to create the adequate frameworks and processes and use the infocommunication tools to effectively manage these processes and connect the right actors to each other. The aim of the article is to offer a theoretical basis and some practical examples with infocommunication solutions for more efficient connection and networking of the actors interested in urban and regional development.

1. Introduction

While the 30 years since 1980 marked the era of globalization, in the 2010 decade we entered a new era, the era of technology (Cséfalvay, 2017). There is a general consensus in the literature and in scientific dialogue that the two most important megatrends of the 21st century are that the world is becoming increasingly complex and rapidly changing, and that changes are primarily driven by technological development. In this context, digitalisation, robotisation and automation solutions are significantly transforming the structure of the world economy, they cause serious transformation processes in the functioning of the private sector, in the perception of the role of the state and, last but not least, in the functioning of cities.

2. In the age of technology the role of cities and partnerships are becoming more important

The disruptive social and economic changes induced by technology can make innovation more open, democratic and massive than ever before (Cséfalvay, 2017), and it is clearly the key driver of the economy. From a territorial perspective, this can unfold through the interaction of three factors (first identified by Professor of Economic Geography Michael Storper in 1997): technology, institutions and organisations, and the internal endowments of the region. Since the 1990s, the cooperation of development actors and institutions, as well as the flow and transfer of knowledge between them, has become more and more important in innovation policy. The identification of the three most important actors in this policy is later linked to the

research of Etzkowitz and Leydesdorff (2000): the academic sphere, the industrial actors (profit-oriented sphere) and the state. At this stage in their research, Etzkowitz and Leydesdorff also state that exploiting the growth potential of innovation is only possible if these actors move forward together. The multiple interconnections of these actors were first marked (2000) with a triple helix and later with the incorporation of a non-governmental organization (NGO) a quadruple helix (2009), and in 2015 it was extended to five elements, to examine the impact of the environment on innovation (and on society).

In an age of economic development based on knowledge-intensive activities and innovation and creativity, the role of territoriality, but especially cities, comes to the fore. Within the framework of endogenous growth theory, the factor of territoriality (local and regional level) in the development of the economy was first incorporated by Paul Krugman (1991). In his new model of economic geography, he interprets it as part of the endogenous factors that determine growth. In this approach, the key factors for development are state measures in general, human capital, and among the endogenous factors technology and territoriality (Farkas - Salamin, 2021).

In his work *Triumph of the City* (Penguin Press, 2011) Edward Glaeser has clearly named urban areas the most successful type of settlement in the 21st century, provoking a great division in the scientific sphere (Farkas - Salamin, 2021). His finding is based on that statement that the promotion of the innovation activities that drive economic and regional development in the 21st century geographical proximity is a significant factor (especially with regard to the geographical proximity and configuration of the development actors indicated in the helix models). He also emphasizes that innovation is traditionally linked to metropolitan areas. In the context of these geographical effects and in terms of innovation, urbanization and agglomeration effects are the most significant, all of which build on the positives of external economic effects from geographical proximity. Thus, contrary to the visions of the pre-1990s, the importance of geographical space does not disappear in parallel with the development of infocommunication technologies, the factors that determine economic development and productivity and its conditions are still significantly influenced by geographical factors (Glaeser, 2011 Farkas - Salamin , 2021). The crucial role of territoriality and cities in the Hungarian literature has also been highlighted by several researchers, such as the Lengyel-Szanyi 2011 or the implementation of helix models in connection with the effects of urbanization and localization (Vas, 2012). Glaeser draws attention to the criteria of diversity, entrepreneurship and education as the three most important factors in the development of cities in the 21st century and in cities that are able to renew themselves.

3. Technology has offered new opportunities for cities, in particular for the coordination of development actors

After nearly a decade of experimentation, smart cities based on infocommunication solutions are entering a new phase. Although smart city solutions are only one of the complete tools needed to develop cities, digital solutions are currently the fastest growing and most cost-

effective option. Although the tools for urban development and spatial development have for many years only been complemented by these technological opportunities, their role is becoming increasingly important. Second-generation smart cities are no longer just about the comprehensive operation and development of the operating systems of settlements, but also about providing a basis for cooperation between planning and development actors. By helping and encouraging commitment and strengthening the local community, bottom-up initiatives are creating more and more local contact platforms and shared digital public services in these cities. At present, they mainly facilitate the consultation of the local government with the residents and the community development of the local population and are usually established in those cities where the opportunities offered by technology can already build on an existing urban development culture based on a broad partnership. Due to the size of the required resources (high capital needs) and the relatively long duration of development, smart city projects in public relations and community involvement are usually established at metropolitan level, on the initiative of a local, regional or state level authority, and the presence of a major technology company is usually observed (Kocsis - Gere, 2021). However, the latter factor is not only a feature of smart city projects supporting social participation or partnership, but it appears also in almost all other urban-level infocommunication developments (such as transport development, safety or other, lifestyle and health support projects etc.). Consultations with stakeholders in the development of the city, as part of the development and planning process of the city, thus with smart solutions, will result in even more effective interventions. A platform for knowledge sharing and communication on data collected in the city, developed and maintained by the city administration (or a stable local community or NGO) with an open database, is a great help, best exemplified by the Amsterdam, Barcelona and Copenhagen exercises. The examples planned to be presented will illustrate how a smart platform that supports local cohesion can serve local community development, innovation, and how can it increase collective knowledge.

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