

## Chapter 9

# Digitalization of Infrastructure Development Based on the Use of Public–Private Partnership Mechanisms: Is Russia in Trend?

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### ABSTRACT

*The author considers the digitalization of infrastructure policy at the global and national levels as an important tool for providing quality infrastructure and promoting sustainable development. The specifics of the author's approach to problems of digitalization of infrastructure development based on the use of public-private partnership mechanisms consists of a combination of "vertical" (analysis of digital and platform solutions in the field of infrastructure investment) and "horizontal" (research of sectoral spectrum of the use of information technologies in the infrastructure of public-private partnership projects) analysis. The author analyses the international experience of developing digital and platform solutions in the field of infrastructure investments. The latest approaches to the development and improvement of the infrastructure complex in the Russian Federation are analyzed. Suggestions and recommendations on ways to further improve the infrastructure complex in Russia based on digitalization and the active use of public-private partnership mechanisms are made.*

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## **INTRODUCTION**

Infrastructure is an essential component of a market economy. It ensures the reproductive process and directly affects the quality of peoples' lives. It is a driver of economic growth, having a powerful multiplier effect on many sectors of the economy. Numerous studies confirm close correlations between the state of infrastructure and its impact on various socio-economic processes in society. According to the IMF estimates, an increase in annual budget expenditures on infrastructure in OECD countries by 1% of GDP reduces the number of unemployed by 0.11% in the short term and by 0.35% in the long term (Abiad et al., 2015). McKinsey experts claim that an increase in annual total infrastructure investments by 1% of GDP will create 3.4 million new jobs in India, 1.5 million jobs in the USA, and 1.3 million jobs in Brazil (Woetzel et al., 2016). The World Bank estimates that reducing infrastructure gaps in sub-Saharan Africa to the level of countries such as Germany and the UK (less than 0.5% of GDP) could lead to annual growth of their GDP by 2.6% (World Bank, 2017).

The impact of infrastructure on the economy is ambiguous. On the one hand, it is an engine of growth and well-being. On the other, it is a source of negative impact on society and the environment. About 60% of greenhouse gases emitted into the atmosphere are the result of the construction and operation of infrastructure, while buildings consume more than 30% of the world's natural resources (UNEP, 2021).

The latter circumstance leads to increased attention to the topic of the quality and sustainability of infrastructure and its ability to meet new challenges – the growth of social problems, including the problem of inclusivity, an increase in anthropogenic pressure on the environment and its pollution, climate change, pandemics, etc.

For Russia, the issues of development and improvement of the infrastructure complex occupy a special place due to the extraordinary geographical features of the country and the low quality of public infrastructure. The country's leaders emphasize the need to accelerate the modernization of infrastructure and note that “the growth of infrastructure investments is a long-term priority of the country's economic policy” (Presidential Executive Office, 2021). Meanwhile, leading Russian experts agree that despite some progress in recent years, in general, the infrastructural “status quo” remains in the regions of Russia (InfraONE Research, 2021). Russia's positions in the world rankings of digital development are quite modest; in terms of business digitalization, Russia is noticeably lagging behind the leading countries (Shuisky, 2020).

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