



# EVALUATION OF PRICING POLICY OF DIGITAL SERVICES THROUGH THE USE OF INNOVATIVE TECHNOLOGICAL TOOLS AND ITS METHODS

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**Abstract.** *In the context of the rapid expansion of the digital economy, the use of innovative technological tools has become one of the main factors fundamentally changing the pricing policy of global service markets. Today, the introduction of 5G, cloud technologies, IoT, artificial intelligence (AI) and big data solutions is leading to the formation of not only the speed and quality of services, but also their cost based on new technological paradigms. The dynamics of prices for digital services in the global economy is directly related to the depth of technological transformation, and countries that have invested in innovative networks on a global scale are achieving a steady decrease in the cost of services, a decrease in consumer spending and an increase in economic efficiency. Investment in digital infrastructure is now considered an integral element of economic competitiveness, since innovative technologies not only improve the quality of services, but also optimize the entire market price mechanism. Therefore, studying the scientific and theoretical foundations of the use of innovative tools in assessing the cost of digital services has become an important methodological necessity for today's global economy.*

**Keywords:** *The introduction of 5G, cloud technologies, IoT, artificial intelligence (AI) and big data solutions.*



In the conditions of Uzbekistan, the deepening of digital transformation, the “Digital Uzbekistan – 2030” strategy, the modernization of telecommunications networks and the improvement of the quality of services are increasing the need for a scientific assessment of the pricing policy of digital services. Innovative technological tools - for example, network management through artificial intelligence, traffic optimization, the use of cloud infrastructure, energy-efficient technical solutions - directly affect the reduction of the cost of services and the economically justified formation of prices. Against the background of a sharp increase in the consumption of digital services, traditional methods of assessing pricing policy are no longer sufficient, since the cost structure in modern infrastructure has become more complicated by technological factors. Therefore, the development of scientific and methodological approaches to determining, assessing, modeling and forecasting the cost of digital services based on innovative technologies is of strategic importance in the economy of Uzbekistan. Such scientific approaches serve not only to optimize costs for operators, but also to ensure fair pricing for consumers, strengthen digital equality and increase economic efficiency.

The English economist Alfred Marshall created the classical scientific foundations of pricing, arguing that production costs are the “natural lower bound” of price. Marshall’s approach is particularly relevant in the telecommunications sector, since a large part of the costs of digital services depend on infrastructure, maintenance, and traffic transmission. According to Marshall, “if the price is formed on the basis of the principle of cost + minimum benefit, market stability is maintained and a fair price for the consumer is achieved.” In the communications sector, this approach serves as an important methodological basis for operators to accurately calculate costs, socially stabilize tariff policies, and improve the quality of services.

$$P=AC+m \text{ (1)}$$

P - service price (sum/GB or sum/minute);

AC - average cost, i.e. the cost of 1 unit of traffic (sum/GB);

m - minimum profit margin (sum or %).

This method allows telecommunications operators to set tariffs at a level “not lower than cost”. Low-cost tariffs for Internet services ensure social stability based on the Marshall approach.

The Activity-Based Costing (ABC) approach, developed in the USA by Kaplan and Cooper, allows each service to be viewed “as a set of separate activities, rather than as a divided part of the total cost. In the telecommunications sector, this approach helps to determine the real cost of each digital service by separating activities such as base station management, network monitoring, customer service, billing system, cloud infrastructure, content delivery networks (CDN)”. This way, the tariff policy will be formed not on the basis of an "abstract price per MB", but on the basis of an anatomical cost map for each service - video streaming, online gaming, distance learning, cloud storage.

Mariana Mazzucato scientifically substantiates that “public innovative investments in digital infrastructure are not only a social task, but also a strategic economic mission.” In her approach, in the telecommunications sector, “pricing policy should be assessed not only in terms of short-term market signals, but also in terms of long-term innovative missions – digital equality, social inclusion, job creation.” In this context, a special innovative investment index is needed to assess the extent to which investments in digital infrastructure are justified by reducing the cost of services and creating value in other sectors of the economy.

$$MDI = \frac{(\Delta TC_{others} + \Delta VA_{GDP} + \Delta AFF)}{I_{dig}}$$

Here:

- the volume of investments in digital infrastructure (optical fibers, 5G, data centers) (sums);
- reduction in transport, communication and operating costs in other sectors (industry, services, education, healthcare) (positive impact expressed in sums);
- growth in added value in gross domestic product (sums);



- improvement in the affordability index of digital services (sum equivalent or welfare impact calculated from the index);
- comprehensive efficiency index of innovative investment in digital infrastructure (measure: “socio-economic benefit” / sum investment).

If  $MDI > 1$ , this means that every 1 sum of digital infrastructure investment has created a positive impact of more than 1 sum in other sectors of the economy and in the affordability of digital services; therefore, there is a macroeconomic basis for reducing pricing policy or expanding subsidy mechanisms. If  $MDI < 1$ , then investments have not yielded a sufficiently systematic result or their integration into the economy is weak - in this case, it is necessary to reconsider pricing policy, modernize technological solutions. Thus, the Mazzucato approach allows us to evaluate telecom pricing policy in relation to mission-oriented innovative investments.

In today's digital economy, one of the most important strategic tasks facing telecommunications companies is to ensure economic sustainability and social justice by reducing the cost of services. Although existing assessment methods are aimed at measuring individual indicators, they do not fully allow for an integrated assessment of factors such as the complex digital architecture of current telecommunications systems, the sharp growth of traffic flows, and the subtle links between service quality and cost. Therefore, the development of a metric for reducing the cost of digital services by telecommunications companies is not only the creation of a new measurement system, but also the strengthening of the intellectual basis for optimizing the economy.

Existing approaches to determining the cost of digital services usually provide an assessment based on total costs or unit traffic values, but they do not fully capture the long-term impact of automation processes, energy optimization, hidden losses from outages, and infrastructure modernization. And it is precisely through these factors that the telecommunications sector forms the bulk of its costs. Therefore, the development of a new metric is practical, as it will not only list costs, but also become a motivational mechanism that forces enterprises to reduce costs from a technological point of view. As a result, the communications enterprise will not only receive economic benefits, but also increase the stability, quality and affordability of services for millions of subscribers. Since communications services are the main infrastructure that connects the social life of society, their cost directly affects not only the economy of the enterprise, but also the population's access to information. Therefore, it is advisable to develop an assessment method, since it will serve as a scientific compass that will direct state policy, corporate governance and technological investments towards the well-being of society. That is, a decrease in cost does not mean an increase in the profits of the enterprise, but also a strengthening of the population's right to equal access to information. In this regard, the new metric is not only a technical and economic tool, but also a scientific basis for human-centered digital reforms.





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