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Maksym Dubyna, PhD in Economics
Chernihiv National University of Technology, Chernihiv, Ukraine

THE SCIENTIFIC APPROACH TO THE IDENTIFICATION OF THE ESSENCE OF THE CATEGORY "INFRASTRUCTURE"

М.В. Дубина, канд. екон. наук
Чернігівський національний технологічний університет, м. Чернігів, Україна

НАУКОВИЙ ПІДХІД ДО ІДЕНТИФІКАЦІЇ СУТНОСТІ КАТЕГОРІЇ «ІНФРАСТРУКТУРА»

М.В. Дубина, канд. экон. наук
Черниговский национальный технологический университет, г. Чернигов, Украина

НАУЧНЫЙ ПОДХОД К ИДЕНТИФИКАЦИИ СУЩНОСТИ КАТЕГОРИИ «ИНФРАСТРУКТУРА»

Basic scientific approaches to the interpretation of the category "infrastructure" have been investigated. Also, an analysis of the existing in the scientific literature definitions of the term has been conducted and taking into account the obtained results, the author interpretation of the essence of the category "infrastructure" has been suggested. The author has considered its essence through the use of the following approaches: system, industry (sector), institutional, functional ones.

Key words: *a system, an infrastructure, an approach, market infrastructure, an economic entity.*

Розглянуто основні наукові підходи до трактування категорії «інфраструктура». Також проведено аналіз наявних у науковій літературі визначень цього терміна та, з урахуванням отриманих результатів, запропоноване авторське тлумачення сутності категорії «нфраструктура». Розгялнуто її сутність через використання таких підходів: системний, галузевий (секторальний), інституціональний, функціональний.

Ключові слова: *система, інфраструктура, підхід, ринкова інфраструктура, економічний суб'єкт.*

Рассмотрены основные научные подходы к трактовке категории «инфраструктура». Также проведен анализ существующих в научной литературе определений этого термина и, с учетом полученных результатов, предложено авторское толкование сущности категории «інфраструктура». Рассмотрена ее сущность через использование следующих подходов: системный, отраслевой (секторальный), институциональный, функциональный.

Ключевые слова: *система, инфраструктура, подход, рыночная инфраструктура, экономический субъект.*

Problem. The economic system in its essence and structure are complex objects of study because they contain a large number of elements, components, forming a large array of diverse relationships, some aspects of which are difficult to study, in terms of available modern scientific research methods. The complexity of the economic system as a whole is due to the fact that economics as a science studies the system of relations that arise in the course of business. However, as a result of the evolution of our society these systems have expanded and include today not only ,,economic subject – economic subject", ,,economic entity – economic subject", but also a large number of diverse, interrelated and complex relationships that emerged in the process of creating conditions for the activization and development of basic economic processes. The set of elements that create such preconditions are generally called infrastructure. The defined category usually referrs to economics and is used on the whole to determine the auxiliary fields and sectors of the national economy.These auxiliary fields and sectors of the national economy contribute to the activation and creation of the condition for the development of certain economic targets but they do not participate in the creation of wealth or services directly.

Analysis of recent research and publications. Currently a significant amount of scientific works of different scientific orientation is devoted to the research of infrastructure. It should be noted that the category ,,infrastructure" is universal from the standpoint of society and is used in many sciences. Among academic economists, we believe, first of all, we should note the following scientists who have made significant contributions to the analysis and understanding of its essence: Baldych N., Belenky P., Brunets B.R., Ivanova N.V., Kovalenko M.E., Rekunenko I.I., Skrynko M.M., Sonko S.P., Stojko O.Y., Timartsev O.Y., Hadzhynov I.V. and others.

Solutions of not resolved before parts the general problem. However, despite of numerous scientific achievements in the field of ,,infrastructure" essence research of the notion today we can observe the presence of a significant number of approaches to the interpretation of the essence. Taking that into account it is hard to make a logical conclusion about the nature of the defined categories because of its versatility, especially in studying of infrastructure of the specific economic object.

The purpose of the article. The purpose of the article is to analyze the existing scientific study of conceptual approaches to the interpretation of the category ,,infrastructure", the author's| determination of its nature.

The body of the article. In general, taking into account the retrospective analysis of the economic system of the world, it should be noted that there existed no need in substantial infrastructure in the early stages of nucleation economic relations in society. It subsequently emerged later in the development of relations in economic activities as a part of the society evolution. However, given the emergence of such traits of infrastructure, we note that today the complexity of its study is, first of all, that the infrastructure has gradually become a separate economic object of study. According to the functioning of market mechanisms in infrastructure there is already its own infrastructure that promotes it. Actually this infrastructure complexity, ambiguity and its presence create essentially different approaches to the study of this category, identifying its elements and the general features and principles of formation and development.

For example, the transport industry has always been regarded as a part of the infrastructure of a market economy. It is true, as this field of the national economy contributes to the process of production, its movement and delivery within the entire national economic system. However, this argument is plausible if we consider market economy or any industry production as the research object. However, the transport industry as a very complex economic system can also perform as a seperate object of study. Accordingly, there are certain infrastructure elements that contribute to its development. Among these we can include, for example, government agencies, repair shops, service companies, educational institutions, etc.

It should be noted that in literature today diverse approaches to the interpretation of the category ,,infrastructure" have been presented. In particular, Ivanova N.V. identifies the following theoretical and methodological approaches to its definition: theoretical, economic, institutional, structural and functional complex [8] defines their essence. Sonko S.P., considering the nature of the infrastructure, identifies the following approaches to determine its nature: chronological, genealogical, structural and functional logic [15, p. 80]. Rekunenko I.I. in the context of scientific and methodological aspects of research ,,infrastructure" as an economic category offers the following methodological approaches to its interpretation: industrial, industry, institutional, service, complex [14, p. 58].

Quite common in the literature is the study of the nature category ,,market infrastructure" in the context of which scientists often try to determine the contents of ,,infrastructure" definition. In particular, Boychyk I.M., exploring category ,,market infrastructure" identified and deepened understanding of concepts such entities: overhead, institutional, distribution, marketing, logistics [1, p. 36].

Given these quite different to each other the results of research of mentioned scientists concerning the identification of approaches to the study of the nature category ,,infrastructure" we consider appropriate, taking into account these developments to form the author's position on the basic conceptual approaches, which should be applied in determining of the specific category. However, it is important to clarify the existing in literature interpretations. Table 1 shows a set of interpretations of the essence of category ,,infrastructure".

Table 1

Approaches to interpretation of the essence of category,,infrastructure"

№ in oder	Definition	Source
1	Infrastructure as a part of the economy is a set of entities and specific accumulated in a particular area general-purpose bjects that meet physical, spiritual and social needs of people by providing the entire range of services in order to create the general conditions for the effective operation of the process of social reproduction and normal people's livelihood	[15, p. 88]
2	Infrastructure – in Latin – substructure, the structure of the system in the structure but linked to it and belongs it	[4, p. 61]
3	Infrastructure is a required component of any integrated economic system. Thus its most significant feature is its role in creating the preconditions of general reproductive process, general conditions of production and the growth of social progress. Review of industrial relations in terms of property relations in general terms provides insight into the nature of economic infrastructure. In terms of the material and content of the material infrastructure reflects the productive forces, but in terms of social form – industrial relations	[16, p. 62–63]
4	Infrastructure - a set of components of an object that are ancillary and subordinate provide conditions for the normal activities of the facility as a whole	[13, p. 210–211]
5	Infrastructure must be understood as a set of elements (institutions, agencies, organizations, technologies, standards, systems) that provides, regulates and creates conditions for normal, uninterrupted, multi-functioning business relationships and interaction of objects and subjects of market economy and movement of goods cash flow	[14, p. 61]
6	Infrastructure is a sector of the general purpose economy, ie its elements can equally be used by all subjects of market relations, from small businesses to multinational corporations of any industry sector and activity, as well as public institutions	[1, p. 37]
7	In any system infrastructure - is the basis, the foundation, internal structure. The market system is a collection of legal forms, through which the operation and combining into a whole of market relations performs. Consequently, market infrastructure is a general basis of direct implementationof exchange processes, physical location of contact, interaction of market counterparty operators, ie the buyers and sellers	[3, p. 293]
8	Infrastructure is a set of components of an object that are ancillary and subordinate and provide conditions for the normal activities of the object as a whole	[12, p. 455]
9	Infrastructure is a set of industries and activities that serve both productive and non-productive sectors of the economy (transport, communications, utilities, general and vocational education, health, etc.)	[9]
10	Infrastructure includes the field of economics, scientific and technical knowledge, social life, which directly support industrial processes and conditions of society	[17]
11	Infrastructure can be seen as a set of elements that ensure the smooth functioning of the relationships of objects and subjects of the system. This definition shows that a certain infrastructure subsystem to another system is designed to provide activity relationships of the elements own systems, which includes its objects and subjects, and in some way regulates the interaction of all elements of ordering	[10, p. 303]
12	Infrastructure (from Lat. Infra – "below under" and structura – "structure, location") in theory the market indicates a range of market institutions of the relationship of key macroeconomic flows. In other words, infrastructure - a set of industries that serve the industry	[5, p. 56]
13	The infrastructure should be considered as a single integrated system, laid the foundation of which functions to ensure production and nonproduction spheres of human activity in order to achieve the greatest possible economic benefit, taking into account the moral and spiritual values population health and to ensure the protection and restoration of the environment	[2, p. 377]
14	Infrastructure is a set of industries and activities that serve the city's economy and production	[11, p. 326]
15	Infrastructure is a set of subsystems, services, companies, institutions and auxiliary units that mediate, facilitate and accelerate the implementation and execution of market transactions. Market infrastructure is a system of channels through which the moving material, human and financial resources is their redistribution in the economy	[7, p. 164]

Source: compiled by the author.

Thus, analyzing the available space in the scientific definition of ,,infrastructure" one can, in our opinion identify the following main approaches to the interpretation of the concept.

1. Systematic – within this approach, scientists consider infrastructure as a system [2; 12; 13; 14; 16]. However, it is worth noting the presence of differences between scientists in the application of this approach. In particular, papers, [12; 13; 16] infrastructure is seen as a part of the overall economic object, the system of relations that occur between individual subjects or subjects and objects during their interactions. Within other scientific works [2, 10; 11; 13] one can come across the assertion that infrastructure is a separate system in relation to the object that it serves. According to the author of the article the whole infrastructure is a separate system, a set of different elements serving nature that contributes to the formation of preconditions for the development and operation of certain economic object.

2. Industrial (Sectoral) – Infrastructure interpretation of individual industries and sectors of the national economy, implementing support function processes of the material and non-material production. This position can be found in [6; 10; 11]. However, as noted in an article in today's world some infrastructure industries and sectors may act as single economic objects, in this case the sectoral approach to the study of the nature of "infrastructure" category can not thoroughly uncover all the specific features of its functioning.

3. Institutional – infrastructure research as an independent Institute for Market Economics, which arose from the need to create objective conditions for the development of basic sectors of the national economy. A supporter of the definition of infrastructure is Gumenyuk A.A., who says: "infrastructure in market theory indicates a range of market institutions which insures the relationship of key macroeconomic flows" [5]. However, we believe infrastructure with defined position not only holds market institutions, but also should include institutions, because without institutional rules and principles of the development of any economic object is not possible. Therefore the formulated approach is not institutional but institutional.

4. Functional – infrastructure research of the nature through basic functions that it performs in the modern economic system of society. This approach can be found in scientific papers [2; 10]. The main functions of the infrastructure are usually considered to be interim, coordination, information and others. In general, currently there is no a single approach to identify the functions of infrastructure.

Of course, we agree with the opinion of scholars on the use of other approaches to the study of the nature of specific category ,,infrastructure" however, we believe, in any case, the analysis will be reduced to one of the aforementioned approaches. For example, chronological and genealogical approaches in generally basically use identified above approaches, to interpret this category focusing only on the time of occurrence in space science category ,,infrastructure" and the main areas where the term was first used. However, the determination of its nature is of no significance.

Thus, given the current interpretation of the category ,,infrastructure" developed conceptual approaches, we consider it appropriate to interpret this definition as follows: infrastructure – a complex, dynamic system, which elements share the goal of which is to build and implement measures to create preconditions operation of certain phenomena, object, process, ie promotion of a system.

Therefore, we have proposed a rather abstract definition of ,,infrastructure", which in our opinion is reasonable, given that the specification of the content of this definition only depends on the object of study, according to which infrastructure is considered. For this reason, we emphasize the importance of taking into account the identification of the specific nature of this category of the object of study. The incorporation of object orientation makes it possible to approach closely the creation of a common interpretation of the concept of infrastructure and identify its components. In our opinion, it is an appropriate assertion that

infrastructure is a part of economics and economic terms. The consideration of the specific object to which the existence of infrastructure software contributes, is a basic principle of identifying the nature of infrastructure, including a large number of different species. This makes the study of infrastructure as a combination of national economy incorrect, since, for example, considering the company as a separate entity and economic unit, its infrastructure will serve not only individual industries and sectors of the national economy.

For example, generally accepted that the financial institution is a part of the infrastructure to ensure the development of the credit market. However, credit bureaus and collection companies are infrastructure elements as the credit market, but in relation to the banking institution they are also its infrastructure elements, they create preconditions for improving the efficiency of banks as commercial enterprises. That is in fact one and the same economic unit acts as an object of study, and infrastructure elements. Considering the credit bureau history their individual infrastructure elements can be identified.

Therefore, we find it necessary, to consider the following key provision in the interpretation of the category “infrastructure”:

1) infrastructure is a universal concept, characterized by a significant level of multiple interpretations;

2) infrastructure is a complex system, which consists of all areas, links and other elements that contribute to the development of a particular object and not its components;

3) specification ,,research infrastructure” depends entirely on the specific installation, operation and development of which it provides, it can be considered infrastructural facilities within the economic system as separate elements, which have their own infrastructure.

Thus, we can conclude that the essence of the category ,,infrastructure” should be viewed as two aspects:

1) fundamental –infrastructure research as a phenomenon, a phenomenon that currently exists in our lives under the pressure of objective preconditions of modern society;

2) applied –infrastructure research in the context of the study of a particular subject. This approach allows to identify infrastructure components as a system. The components quite vary among themselves in the study of various economic infrastructure objects, which makes the impact of the research object on the determination of the infrastructure nature.

Conclusions and suggestions. Thus, the basic scientific approaches to the interpretation of the essence “infrastructure” category, that allowed the author to identify these concepts to the interpretation of the term: systematic, industrial (sectoral), institutional, functional have been considered in the article.

Given the research conducted by applying the authors' definition of the nature category “infrastructure” has been suggested. Infrastucture should be considered as a complex, dynamic system. Its elements share the common goal of which is to build and implement measures which aims in creation of preconditions of functioning of certain phenomenon, object, process, ie promotion of a different system.

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