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ANALYSIS OF UKRAINE'S INDUSTRIAL ENTERPRISES: DIRECTION OF DEVELOPMENT

Об'єктом дослідження є промислові підприємства України і напрями їх сучасної трансформації в умовах постіндустріального розвитку економіки.

У роботі наведено результати дослідження поняття «промислове підприємство». Розкрито відмінності сприйняття промислового підприємства різними класифікаційними системами. Показано, як зміна терміну «продукція промислового призначення» на поняття «продукція проміжного використання» формує сучасне середовище виробничої діяльності підприємств.

У ході дослідження використовувалися методи аналізу, співставлення та узагальнення. Показано місце промисловості України у світових рейтингах. Оскільки світова промисловість знаходиться під впливом двох різнополярних факторів – розвиток економіки конкретної держави і розвиток території – основним завданням промислового капіталу стає визначення оригінальних і перспективних напрямів розвитку. Автором досліджено стан та визначено перспективи розвитку окремих груп промислових підприємств України. Теоретичне значення роботи розкривається у систематизації статистичних даних, які висвітлюють загрози і можливості змін зовнішнього середовища промислового підприємства. Показано динаміку сучасного перерозподілу значущості окремих груп підприємств добувної і переробної промисловості. Зазначено, що основним споживачем продукції проміжного використання стає сфера послуг. Тому змінюються вимоги до промислових підприємств, виникає потреба переходу від технологічного оновлення виробництва до формування кіберфізичних систем цифрової економіки.

Наукова новизна роботи полягає у визначенні перспектив розвитку добувної та переробної промисловості через суміжні види економічної діяльності.

Практична цінність роботи полягає у намаганні сформулювати конкретні шляхи диференціації і диверсифікації промислових підприємств. З урахуванням стратегічних змін зовнішнього середовища промислових підприємств визначено суміжні групи і класи видів економічної діяльності, продукція яких матиме потенційні ринки збуту, а значить, і перспективи розвитку промислового підприємства.

Ключові слова: промисловий комплекс, промислові підприємства, вид економічної діяльності, перспективні напрями розвитку, матриця вагомості.

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1. Introduction

Industrial enterprises are traditionally considered the basis of the economic, financial, strategic security of the state [1]. But the industrial economy has been replaced by a post-industrial knowledge economy, the basis of which is considered to satisfy intangible needs [2, 3]. Such an economy is in dissonance with the idea of the traditional basic structure-forming industrial enterprise as a place of routine technology. Traditional industrial enterprises of heavy engineering, chemical and petrochemical enterprises, coal, timber, and cement industries use automated control systems and carry out their activities, often precisely for the sake of this activity. Therefore, the heavy industry of Ukraine forms up to 40 % of the country's exports [4], exports 80 % of metal products produced on Ukrainian territory. This situation satisfies importers and exporters – «dirty» technologies remain here, and the product is ready for further use in the leading countries of Europe and

Asia. Economic crises of the late XX – early XXI centuries led to the decline of the heavy industry of Ukraine, but in 2018 it formed 40 % of foreign exchange earnings in the country [4].

The mentality of specialists of the twentieth century does not perceive the destruction of the industrial complex of Ukraine as a factor in the development of the world economy and seeks to restore traditional industrial production. Therefore, it is relevant to study the status and prospects of updating the basic industrial industry of an enterprise in Ukraine.

Thus, *the object of this research* is the industrial enterprises of Ukraine and the directions of their modern transformation in the conditions of post-industrial development of the economy.

The aim of research is disclosing the causes of the crisis in the industrial complex of Ukraine and determination of the directions of innovative development of an industrial enterprise.

2. Methods of research

The applied techniques are based on an empirical analysis of the results of the subject of research and the identification of the needs of its development. This research is analytical. Research methods have been applied, where the basis of obtaining primary information is documents on activities and work results. These are special scientific methods of collecting information (analysis of documents, observation). As well as special scientific technologies (organization of sampling, determination of a system of indicators, approaches to the processing and analysis of information [5, 6]).

Since the object of research is a large economic system (industrial complex of Ukraine) and its components (industrial enterprises), which in turn are complex systems, a systematic approach has been applied.

3. Research results and discussion

The normative acts of Ukraine [7, 8] do not distinguish industrial enterprises, but define them as enterprises that produce products in certain volumes in accordance with specified technologies. But the process of industrial production is characterized as a process of processing (mechanical, chemical, manual, etc.), used for the manufacture of new products (consumer goods, semi-finished products or means of production), the processing of used goods, the provision of industrial services [8]. In accordance with this, the term «industrial enterprise» in the Ukrainian regulatory acts covers such types of economic activity as:

- mining and quarrying (section B according to the types of economic activities (KVED) in Ukraine);
- processing industry (section C);
- supply of electricity, gas and air conditioning (section D);
- water supply, sewerage, waste management (section E);
- construction (section F).

Industrial enterprises also include sanitary facilities, transport, warehouses and communication services, since industrial buildings and warehouses (code 125) include industrial buildings, such as factories, workshops, slaughterhouses, breweries, assembly plants and the like. According to [9], as of 2019, the number of enterprises and individual entrepreneurs in industry as types of economic activity is 1:2, and the volume indicators of manufactured industrial products, on the contrary, are 2:1. Since state statistics give generalized indicators for industry (KVED A+B+D+E), then to determine such a distribution within the industry (mining, processing, electricity and water supply), it is possible to use the general trend.

Studies have shown that under the influence of two different polar factors – the development of the economy of a particular state and the development of the territory – the definition of original and promising areas of development of territories is the main task of industrial capital. And the regional development management paradigm takes a leading place among the directions of innovative development. In [10], it is noted that the main directions of innovative activity of industrial enterprises is the growth of income, technological modernization and resource conservation, and the most common is product updates. In Ukraine, the State Statistics Service in 2018 began to evaluate industrial enterprises by the prospects for the development of their business activity [11]. A summary table of index indicators is given in Table 1.

Table 1

Expectations of industrial enterprises in IV quarter of 2019*

Index	Expected changes in the index value, relative points	The effective value of the index, relative points
Industry confidence indicator	-1	-5.6
Industrial business climate indicator	+0.2	+0.6
Assessment of the current volume of orders for industrial production	-5	-34
Expectations of changes in industrial output	+4	+13
Assessment of the current volume of finished goods stocks in industry	+2.5	-5
Estimation of export demand	-5	-23
Expectations of changes in selling prices for industrial products	+5	+25
Expected changes in the number of industrial workers in enterprises	+5	0

Note: * – table is compiled by the author based on data [11]

The owners of industrial enterprises note that nothing inhibits their production [9], and this indicates the use of creative approaches in management. Industrial enterprises leave markets with low demand for products and thus eliminate the lack of funding.

The innovative development of a modern enterprise implies a fundamental novelty, which means not just uncertainty, but complex uncertainty. If at the beginning of the twentieth century the importance of industry in the formation of the budget of Ukraine was 66 %, and the service sector was 34 % [12], then at the end of the second decade the revenue generation strategy is changing [9, 13]. The average volume of sold intermediate goods (industrial products) for 2019 is 47.5 % of all sold products, and consumer durable goods 1.2 % [9]. The structure of types of economic activity in the middle of industry is also changing (Table 2).

Table 2

Comparative characteristics of sales of industrial products*

Type of economic activity	The structure of the release of goods and services by foreign economic activity, % of the total number by years			
	2019	2018	2016	2014
In general, industry, including:	100	100	100	100
– mining;	16.7	15.2	13.1	12.9
– processing;	64.2	65.3	6.0	67.7
– supply of electricity, steam, gas, air	17.9	18.5	21.0	18.2
Including processing:				
– wood products and printing;	3.4	3.4	3.5	3.4
– production of chemical products;	2.9	2.7	3.3	3.9
– mechanical engineering;	7.3	7.2	6.5	7.9
– production of vehicles	3.0	2.9	2.1	3.2

Note: * – compiled by the author based on data [8]

The main indicators characterizing the industry, including in 2020, remain unchanged [9]:

- sustainable development;
- decrease in the volume of markets for direct sales of products;

- diversification of nomenclature items;
- reduction of production volumes by stock items taking into account the peculiarities of the closed-loop economy;
- the best available technical and technological innovations in conditions of limited resource provision.

In order to determine the directions of renewal, reconstruction and restoration of industry, the authors systematized the directions of diversification and differentiation of industrial enterprises through related types of economic activity (Table 3). A systematic approach is applied, which allows to determine the following by analyzing and synthesizing the structural and logical schemes of the industrial complex of Ukraine.

Diversification is becoming an indispensable tool for managing business processes. And already within the limits of awareness of freedom in making economic decisions in a peer-to-peer economy [14] hierarchical management models, diversification of the product portfolio is possible.

The prospects for the development of the mining and processing industry of Ukraine are clarified, taking into account their strategic priorities [15]. Given the frequency of the forecast request for a particular direction of industrial development, the authors compiled a table of significance of the directions of diversification and differentiation (Table 4).

An analysis of the development directions of Ukraine shows the following. The mining and processing industries and construction are structure-forming types of economic activity for the Ukrainian economy. But quarrying, printing, the chemical industry, the production of machinery and equipment were not directly reflected in the development strategy of Ukraine. However, promising areas for the realization of their potential in modern conditions should be related types of economic activity: power engineering, agricultural engineering, production of equipment and materials for the functioning of housing and communal services.

Table 4

Matrix of significance of promising areas of industrial development*

Destination, prospective request	Significance, %
Mining industry:	100
– development of quarries to order	60
– production of non-renewable raw materials of the fuel and energy group	20
– extraction of mineral raw materials for the chemical industry (fertilizer production)	20
Manufacturing industry:	100
– machines, equipment and equipment for special purposes	16.5
– specialized and small automotive industry	16.5
– materials of construction	13.8
– finishing and individual trim elements	8.4
– materials with desired properties	8.4
– structural elements	2.8
– specialized and small mechanical engineering	2.8
– specialized transport	2.8
– passenger transport	2.8
– materials for mechanical engineering	2.8
– heat and electrical insulation materials	2.8
– materials for highway department	2.8
– chemical plant and animal protection products, chemical fertilizers	2.8
– materials for mulching land	2.8
– environmental and restoration processing technologies	2.8
– alternative fuels	2.8
– environmental materials for construction	2.8
– packaging elements	2.8

Note: * – compiled by the author on the basis of statistical processing of data from an analytical study

Table 3

Predicted directions of differentiation and diversification of the industry of Ukraine*

Type of economic activity	Strategic areas of development of Ukraine until 2020/Opportunities for mining and processing industry						
	Infrastructure		Energetics	Agriculture and Fisheries	Housing and Utilities	Factors of national pride	
	Transport	Telecommunication				Space industry	Innovative programs
Mining industry	Development of quarries commissioned by highway department	–	Extraction of non-renewable raw materials	Extraction of mineral raw materials for the chemical industry (fertilizer production)	Development of quarries for the extraction of raw materials	Development of quarries for the extraction of raw materials	–
Processing industry, including:							
– wood products and printing	Individual decoration elements	–	Alternative fuels	Materials for land mulching, environmental materials for construction, decoration, packaging	Structural elements, decoration elements	Decoration elements	Ecological and restoration technologies of processing
– production of chemical products	Materials construction and decoration materials for highway department	New materials	Heat and energy insulation materials, construction materials	Chemical plant and animal protection products, fertilizers, construction materials	Construction and decoration materials, materials for mechanical engineering	Construction and decoration materials	Materials with desired properties
– mechanical engineering	Special purpose machinery and equipment				Machines and equipment for special purpose		Specialized mechanical engineering, small mechanical engineering
– production of vehicles	Specialized and passenger transport	Specialized and small automotive industry					

Note: * – compiled by the author on the basis of the analysis of relations of types of economic activity

An innovative direction is the realization of the potential of an industrial enterprise through the service sector (fulfillment of service sector orders). Large-scale mass production is to lose and in the future development prospects, serial and individual unit production is promising. Such an approach to the formation of the foundations of industrial activity («heavy industry») requires complete re-equipment and updating of capacities.

4. Conclusions

The analysis of the definitions «industry», «industrial enterprise» shows that state regulations do not give a clear idea of these terms and form systems based on them depending on the purpose of systematization. Inconsistency of terminological concepts can become the basis of an inadequate assessment of the industry of Ukraine in international ratings.

Based on the data of the State Statistics Service, the only positive thing in the development of industrial enterprises in Ukraine is the freedom of owners in their management approaches: enterprises leave markets with low demand for products and thus lose their lack of funding.

The author's work is the application of a systematic approach (analysis and synthesis) to determine the directions of updating, reconstruction and restoration of the industry of Ukraine. This approach makes it possible to systematize diversification and differentiation as a strategy for choosing priority areas for the development of industrial enterprises through related types of economic activity. The proposed matrix of significance of promising areas of industrial development will allow industrial enterprises to consciously choose the types of economic activity and create the flexibility of production technologies in the transition to Industry 4.0.

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