STRATEGIC GOALS AND QUALITATIVE PROGRESS INDICATORS OF THE PROCESS OF NEO-INDUSTRIALISATION OF THE MANUFACTURING INDUSTRY IN UKRAINE

Olha Ilyash¹, Nataliia Semenchenko², Andrii Sachenko³

Abstract. Research subject. The article describes a system of strategic objectives and quality metrics associated with the development of neo-industrialisation processes in the manufacturing industry of Ukraine. The article shows that the implementation of the strategic and operational goals of the state policy requires the implementation of a set of measures, the main of which is the determination of the priority areas of the state policy in terms of innovative development and the creation of a "core" of new industries, which are prioritized in the development of high-tech entrepreneurship and increased export potential of the processing industry of Ukraine. Methodology. The scientific research is derived from a systematic approach to the analysis of the entire landscape of neo-industrialisation, which includes the survey of the current state of the industries, the establishment of metrics and methodological tools for the implementation of the development policy of the manufacturing industry. The proposed approach is derived from a combination of economic data analysis, expert opinion and forecasting. Purpose. The aim of the study is to formalise the methods and to justify the steps necessary for the implementation of a neo-industrial strategy that focuses on the technological modernisation of the manufacturing industry, increasing the competitiveness of the national economy and its technological integration into global processes. Conclusion of the study. The article develops the primary objectives of operational importance associated with the achievement of strategic goals in the manufacturing industry, namely the modernisation of infrastructure, the digitalisation of the economy and the creation of conditions for the integration of high-tech innovations into production processes. The article presents the formation and practice of calculation of the regional index of quality progress of the process of neo-industrialisation of the processing industry with the structure and the algorithm of its formation. It is proved that the structure of the index should be formed by indicators consisting of institutional, structural and functional components of processes of neo-industrial modernisation of regional industrial and economic complexes. The article presents the development of tools for the analysis of the effectiveness of state and local economic policy measures, visualisation and analysis of planned and actual values of key indicators of neo-industrialisation. The authors propose a strategic approach to the interaction between the state, business and scientific institutions in order to ensure a symbiotic effect for the neo-industrial development of the manufacturing industry.

Keywords: development strategy, processing industry, indicators, neo-industrialisation, strategising, innovation, high-tech development, Industry 6.0.

JEL Classification: O10, O14, O20

1. Introduction

There is no doubt that the right strategic guidelines for the country are an essential prerequisite for



This is an Open Access article, distributed under the terms of the Creative Commons Attribution CC BY 4.0

achieving the objectives of public policy. However,

their implementation is based on a system of measures

and means that will lead to the desired reforms and

¹ National Technical University of Ukraine

[&]quot;Igor Sikorsky Kyiv Polytechnic Institute", Ukraine (corresponding author)

E-mail: oliai@meta.ua

ORCID: https://orcid.org/0000-0002-7882-3942

² National Technical University of Ukraine

[&]quot;Igor Sikorsky Kyiv Polytechnic Institute", Ukraine

E-mail: uas.natalya@gmail.com

ORCID: https://orcid.org/0000-0001-7519-6560

³ National Technical University of Ukraine

[&]quot;Igor Sikorsky Kyiv Polytechnic Institute", Ukraine

E-mail: sachenko.andrii@lll.kpi.ua

ORCID: https://orcid.org/0009-0009-1861-8064

structural and institutional changes. This applies directly to the neo-industrialisation of the national economy, the principles of which often do not correspond to the commercial and economic interests of individual economic actors, or there is a lack of political will and/or public understanding, motivation/resources, institutional factors, etc. The situation will not change unless proactive decisions and actions are taken. Therefore, the situation will not change unless proactive decisions and actions are taken. In other words, any strategy is just a plan, while its implementation requires the implementation of its measures. This is the urgent need to concretise the practical steps of a neo-industrial strategy for the development of Ukraine's manufacturing industry. Moreover, as shown above, the achievement of the goals and strategic objectives of state policy in the analysed area is based on a rather complex and systemic task, which should be countered by a diversified and variable instrumentation of state regulation.

Conversely, the preparation and implementation of numerous activities necessitate substantial resource support, encompassing a diverse array of financial, investment, intellectual, human resources, material and technical, intangible, informational, and so forth. That is why, from the theoretical and methodological point of view, the issues of substantiation of volumes, sources of attraction, rational allocation and efficient use of financial and resource potential of intensification of the processes of neo-industrialisation of the national economy of Ukraine in general and its processing industry in particular are of no less importance.

In general, the success of the state policy includes not only the quality planning, full and effective implementation, but also the control over the course of the relevant processes, including the analysis and diagnostics of the state, the vectors and scope of neo-industrialisation, the competitiveness of this industry and the national economy as a whole, the realisation of its economic and resource potential, as well as the quality and effectiveness of the state policy in the analysed area (Ilyash, 2015). This not only updates, but also brings to the fore the task of forming and using a methodology for monitoring the implementation of the neo-industrial strategy for the development of the processing industry.

2. Indicators for the Development of a Neo-Industrial Strategy for the Processing Industry

The present discussion pertains to a comprehensive approach to the implementation of the aforementioned strategic guidelines of the neo-industrial strategy for developing Ukraine's processing industry. It is imperative to direct the implementation of a set of measures focused on achieving the operational goals of the strategic plan in this area. The totality of these goals, in conjunction with a full range of indicators (criteria for achieving operational goals), are presented in Table 1. Concurrently, the methodological basis for analysing neo-industrial processes in the field under study will be based on the identified indicators.

It is evident that the operational objectives of state policy are structured in a manner that unveils the problematic aspects, while concurrently highlighting the areas that are prioritised for reform to achieve strategic goals. These strategic goals serve as the pivotal reference points for the intensification, scaling, and effectiveness of neo-industrial trends in the Ukrainian processing industry.

In particular, the formation of the "core" of neoindustrial sectors necessitates, in the first instance, the reforming and systematic improvement of the quality of functioning of the sectors of the national economy of Ukraine responsible for social and humanitarian development and security (Amosha, Vyshnevskyi & Zbarazska, 2012). The areas of responsibility encompass healthcare, education and science, culture, sports, social infrastructure, the media system, spiritual and religious development, and folk crafts, among others. Without qualitative changes it would not have been possible to preserve the human potential during the war and to use it effectively in the post-war reconstruction of the national economy, which is the main resource and condition for neo-industrialisation processes (Kulakova & Zhytnyk, 2023).

However, this is the case with the intellectual and human resource potential of the neo-industrialisation of the processing industry, while it is in dire need of other resources. Consequently, the modernisation of sectors providing support for neo-industrialisation is imperative. This encompasses the domains of scientific, technical and innovation activities, intellectual property, information and communication technology (ICT), financial, credit and investment segments, raw materials and material resources, and technical and technological support (Bondarets, 2016).

Infrastructure is a vital component of facilitating the processes of high-tech growth, the establishment and development of breakthrough high-tech industries and sectors, and the supply of relevant resources, support for communications and connections, and so forth. The development of fundamental infrastructures, such as transport, communications, transport and logistics, business road and financial infrastructure, digital communications and payments, and banking, is imperative for the formation of the "core" of high-tech industries (Das & Pan, 2022).

Table 1

Strategic and operational objectives of the neo-industrial strategy for the development					
of the Ukrainian processing industry and indicators of their implementation					

Strategic (operational) objectives	Indicators of achievement of operational goals
	- The number of higher education institutions ranked in the top 500 QS World University Rankings;
	the number of research results that led to practical testing of technological innovations by business
	entities;
Formation of the "nucleus"	- the number of registered new intellectual property objects based on breakthrough technological
of neo-industrial sectors	innovations;
(- Strengthening the capacity of social	- the number and structure of researchers involved in research and development commissioned
and humanitarian development	by business entities;
and security sectors;	- expert assessments of the quality of essential services in education, science, healthcare, culture,
- modernisation of the resource sectors	sports, and so forth;
of neo-industrialisation;	 the extent of digital transformation of the economy and society;
- development of basic infrastructures;	 the state of development and quality of digital infrastructure;
- scaling up the sectors of neo-	 the capacity of Ukraine's transport and logistics infrastructure;
industrialisation potential.)	 the volume and dynamics of venture capital funding;
industrialisation potential)	– volumes of products (services) sold, number of business entities, number of employees
	in such industries as robotics, nanomolecular technologies, biotechnology, genetic engineering;
	– nanomedicine, artificial intelligence, microelectronics, ICT, instrumentation, nuclear energy,
	aerospace engineering, pharmaceuticals.
Development of high-tech small	- The number of SMEs that have created/commercialised high-tech intellectual property;
and medium-sized enterprises	volumes of innovative products sold (manufactured using advanced technologies) by SMEs;
(- Growth in the share and number	- the number of SMEs employed by high-tech entities and the share of R&D personnel;
of innovatively active SMEs;	- number of co-operation practices (SMEs and large businesses) and successful implementation
- an increase in the number of high-tech	of high-tech projects;
startups implemented;	- the volume of investments in R&D in the SME sector;
- building institutional infrastructure to	- the structure of innovation and technology activity in the SME sector;
support and resource high-tech SMEs.)	- expert assessments of the completeness and quality of the functioning of the SME innovation
	and technology development infrastructure.
Increase in exports of high-tech	- The share of exports and imports of high-tech products (services) in GDP;
processing products	- exports of domestic high-tech products and <i>Industry</i> 6.0 industries;
(- Technological modernisation	– share of domestic high-tech products in the global and regional markets;
of the production and export potential	- expert assessments of the quality and structural characteristics of exported domestic high-tech
of the processing industry;	products;
- improving financial, resource,	- the volume of imports of modern technologies and means of labour that correspond
and investment support;	to the VI-VII technological modes;
- increasing efficiency in the system:	- expert assessments of the completeness and quality of the export infrastructure
production, transportation, storage,	of the processing industry;
processing, sales of products of high-	- the volume and efficiency of foreign direct investment in domestic production of high-tech
tech processing industries.)	products and <i>Industry</i> 6.0.
Increasing the contribution	- Export-import coverage ratio;
of the processing industry	- import dependence ratios of the domestic market, including by product groups and advanced
to the competitiveness	technologies;
of the national economy	- the share of production and employment in the processing industry in the economies
(- Import substitution;	of hromadas and regions;
- impact on local economic	- the share of investments in the processing industry, in particular in high-tech projects,
	in the total investments of hromadas and regions;
areas;	- the share of the processing industry's expenditures in the overall structure of the hromada and
- investments in human development	regional spending on human development, including education, science, research and development;
and social responsibility.)	- expert assessments of the level of social responsibility of the processing industry.
	 Indicators of innovation and technological development in the economy in general and in the processing in ductaging matricelar.
Torrest the set of the set	and in the processing industry in particular;
Improving the national economy's	- expert assessments of the quality of the environment for R&D, implementation
position in leading international	and commercialisation of breakthrough high-tech innovations;
rankings:	- expert assessments of the availability of advanced technologies for the processing industry;
- European Innovation Scoreboard;	expert assessments of the state of development of the ICT sector and dissemination of its results
- Global Innovation Index;	in the business environment and in the processing industry;
- Global Competitiveness Index;	- expert assessments of the extent to which the innovation and technological potential
- Digital Competitiveness Index;	in the processing industries is realised;
- Knowledge Economy Index;	- expert assessments of the level of knowledge and technology, as well as the readiness of ICT
- Technological Readiness Index	system actors for future changes;
	- expert assessments of the quality and maturity of institutional support for innovation
	and technological development of the processing industry.

Source: compiled by the authors

Finally, these three conditions create the conditions for setting and achieving the fourth operational objective of this block, which is to develop sectors with neo-industrialisation potential. These are mainly robotics, nanomolecular and biotechnology, genetic engineering, nanomedicine, artificial intelligence, microelectronics, instrumentation, programming, nuclear and alternative energy, aerospace, pharmaceuticals, and so forth (Chourasia et al., 2022).

Under the whole range of operational goals, the system of indicators for their implementation should reflect key issues/aspects of the quality of domestic education, training and development of highly qualified scientific personnel, provision of social services for human development, digitalisation of the economy and society, activity in the most high-tech industries, types of economic activity and system technologies.

It is further postulated that the strategic objective entitled "Development of high-tech small and medium-sized enterprises" is predicated on the realisation of such operational objectives as, firstly, the augmentation of the share and number of innovatively active small and medium-sized business entities specialising in the real sector. It is vital for the implementation of the functions and tasks of representatives of this sector of the economy in intensifying innovation and technological activities and increasing the level of technological mobility of systems (Duggal et al., 2022).

Secondly, there has been an increase in the number of high-tech startups. Such entities are, by their very nature, minor or even micro-entrepreneurship entities, and they are often the driving force behind the initiation, testing and development of breakthrough high-tech technologies, when large or even mediumsized enterprises cannot do so (Mazaraki & Melnyk, 2021). Consequently, the absence of the activation and, more crucially, the implementation of hightech startups would impede the country's ability to effectively initiate the processes of neo-industrialisation, both in general and, specifically, in the industrial processing sector (Mazaraki & Melnyk, 2021).

Thirdly, the establishment of an institutional infrastructure to support and resource high-tech small and medium-sized businesses is imperative. The inability of both high-tech startups and SMEs in the processing industry to independently organise investment-intensive activities, such as innovation and technology, necessitates the provision of adequate support in this area. Such support can be facilitated through the establishment and effective functioning of infrastructure elements (Oliynyk & Kuznietsova, 2018).

In order to ascertain the degree of development and, consequently, the full implementation of the strategic goal of the state policy, which is to intensify and expand the activities of the high-tech sector of small and medium-sized enterprises, it is necessary to consider all possible parameters (by the number of business entities, the scale of production and sales of products (services), jobs created, et cetera (Karaeva et al., 2011).

As already mentioned, one of the main criteria of neo-industrialisation is to strengthen the technological competitiveness of the economy, especially in the global market of industrial products (Prushkivska, 2013). This is manifested in the increase in exports of processed products, which in turn is based on the implementation of operational goals for the technological modernisation of the processing industry's production and export potential (exports can be increased if a country has sufficient production, transport and logistics capacities and the processes of their use and development involve the use of the most advanced modern equipment and technologies); improvement of financial, resource and investment support (research projects "production \rightarrow transport \rightarrow storage \rightarrow processing \rightarrow marketing of products" of hightech processing industries (concentration of efforts on production alone will be insufficient and will not have the planned effect if other links of the integral process lag behind in their capacities/potential; accordingly, the subjects of the state policy of neoindustrialisation should equally support development and increase efficiency (and on the basis of the introduction of high modern progressive technologies) (Sachenko, 2024).

Indicators used to verify the achievement of the strategic goal of increasing exports of high-tech products of the domestic manufacturing industry should reveal the scale and intensity of production and exports of such products, the import and implementation of advanced technologies, the state of development of support infrastructure and resource provision for exporters, and the formation and realisation of the export potential of domestic *Industry 6.0* industries.

3. Objectives and Measures of the Neo-Industrial Strategy for the Development of Ukraine's Processing Industry

The strategic goal of increasing the contribution of the processing industry to the competitiveness of the national economy should be considered the most comprehensive and systemic (Kasych, 2016). Accordingly, the operational goals should address several systemic aspects, such as import substitution, overcoming depressed regions, investment in human development, etc. In fact, the high level of import dependency of Ukraine's domestic market is evidence of the unresolved task of increasing domestic production and sales of domestic products on the domestic market.

Therefore, the realisation of the potential of the processing industry to strengthen the competitiveness of the Ukrainian economy is mainly related to the creation and efficient use of production capacities and opportunities. However, this requires adequate financial and resource support (Zhytnyk et al., 2024). To this end, a number of state and regional financial support programmes for enterprises specialising in processing should be developed and implemented.

Another aspect is the issue of technical regulation, metrology and standardisation. The authors believe that these issues have not received sufficient attention in the history of the Ukrainian economy (Reshetylo & Ostrovsky, 2018). In order to stimulate and develop the processing industry and strengthen the position of domestic business entities in this sector at both domestic and international levels, it is necessary to actively apply tools to improve standardisation systems and ensure the integrity of measurements (in addition to providing financial and resource support). Such tools might include the introduction of a labeling of goods and a service model of export support based on the established national information centre on technical barriers to trade and sanitary and phytosanitary measures. Furthermore, it is recommended that the latter be expanded (Yankova, 2023).

Digital tools should be increasingly introduced in this area to improve the conformity assessment system for the domestic manufacturing industry. The development of export-oriented industries and the international recognition of the national metrological infrastructure require the application of new and the modernisation of existing national standards and measurement standards, the establishment and maintenance of measurement standards and measurement services, and the conduct of applied research in the field of technical regulation, metrology and standardisation.

In the context of international harmonisation of national standards, it is imperative to adopt and implement measures that address the barriers arising from discrepancies in technical requirements and regulations across different countries. In order to enhance the standards of public administration, the focus should be directed towards the transition of domestic processing enterprises to international requirements and norms. This transition, in addition to fulfilling their direct functions and tasks, will contribute to the strengthening of the competitiveness of domestic products in both domestic and foreign markets. This approach offers a direct solution to the problem of import dependence and serves to increase domestic export potential.

Concomitantly, it is asserted that Ukraine, with its substantial agricultural and raw material capabilities, possesses considerable potential to generate and production, encompassing the agroaugment industrial complex, at the local level. This endeavour is expected to result in the creation of employment opportunities, the alleviation of economic depression, and the revitalisation of socio-economic development in small and remote hromadas. The enhancement of these processes is contingent upon the identification and allocation of investment resources. Consequently, within the overarching framework of state policy in this domain, the creation of a conducive investment climate and the stimulation of investment in the processing industry must be distinctly identified as priorities. In this regard, measures should be taken on an ongoing basis to establish clear coordination of efforts in working with foreign and domestic investors, improve the regulatory framework for business activities, including optimisation of existing measures of state support for investment in the processing industry, improve trade logistics and develop production and sales links between foreign investors and domestic small and medium-sized businesses specialising in the processing of industrial products.

The indicators that will signal the achievement of the above operational objectives are mainly those that characterise the manufacturing industry's contribution to important macroeconomic parameters, including industrial production and exports, job creation and employment, investment and the resulting increase in production capacity.

Achieving both the strategic and operational goals of the state's neo-industrial policy for the development of the processing industry will significantly improve the position of Ukraine's economy in international rankings such as the European Innovation Scoreboard, Global Innovation Index, Global Competitiveness Index, Digital Competitiveness Index, Knowledge Economy Index, Technology Readiness Index, etc.

However, the achievement of such benchmarks is determined by the proactivity and quality of the state policy on creating a good environment for research and development, implementation and commercialization of breakthrough high-tech innovations, availability of advanced technologies for processing industry entities, the state of development of the ICT sector and dissemination of its results in the business environment and at processing industry enterprises, the extent of realization of innovation and technological potential in processing industries, the level of knowledge, technology and skills acquired in the country.

In general, the implementation of the strategic and operational goals of the state policy requires a set of measures shown in Figure 1.

	1	
Strategic objectives		State policy measures
	1	
Formation of the "core" of neo-industrial sectors	→	 ✓ Designing and implementing the National Programme for the Development of <i>Industry 6.0</i>, creating its infrastructure, integrated systems and joint projects; ✓ improvement of the system of strategy and programming for the development of neo-industrial sectors; ✓ development of a system of financial and resource support tools and digital communications.
Development of high-tech small and medium-sized enterprises		 Modernisation of SME access to finance (including venture capital) policies and improved resource provision; stimulation of the development of high-tech production based on SMEs through modernisation and technological innovation; development of productive articulation in the SME sector; improvement of SMEs' access to new markets and facilitation of foreign trade.
Increasing in exports of high-tech processing products		 ✓ Establishment of a centre for coordination and development of institutional infrastructure to support exports of high-tech processed products; ✓ support for the foreign economic activity of processing enterprises in the implementation of joint investment and economic projects with foreign partners; ✓ development of comprehensive marketing products (with government support) for exporting processing companies; ✓ creation of a full-fledged regional and sectoral investment infrastructure in the system of foreign economic activity of high-tech processing industries.
Increasing the contribution of the processing industry to the competitiveness of the national economy		 ✓ Creation and scaling up of high-tech technical and innovation special zones and industrial territorial and sectoral production systems (clusters); ✓ formation and development of integrated closed-cycle systems for the development, production and marketing of high-tech products in the processing industry; ✓ development of innovation and technology parks and ICT outsourcing centres for the digitalisation of processing industries; ✓ stimulation of vertical and horizontal co-operation between representatives of education, science, innovation and processing enterprises.
Improving the place of the national economy in leading international rankings	 	 ✓ Improvement of regulatory and organisational support for the development of the digital economy and digital infrastructure; ✓ provision of financial and economic incentives for processing industry entities to implement digital modernisation projects; ✓ initiation and support of projects to create engineering clusters and introduce VI-VII technological modes in the processing industry; ✓ scaling up the use of artificial intelligence, creating digital platforms for a virtual interaction environment, boosting the development of the Internet of Things, and developing the ideology of sharing.

Figure 1. Measures of the neo-industrial strategy for the development of Ukraine's processing industry

Source: authors' development

Thus, with regard to the formation of the "core" of neo-industrial sectors, the authors believe that Ukraine should formulate and implement a national strategy for the development of *Industry 6.0*, as well as build its infrastructure, which would allow the development of co-operation practices between manufacturing enterprises and business entities in related industries and types of economic activity. Such a policy must be implemented on the basis of systematic technological forecasting with the development and implementation of a comprehensive science, technology and innovation policy.

Such technological forecasting should be carried out by a specially authorised body in the field of state stimulation of high-tech production on an ongoing basis, with the results summarised at least once every five years and updated annually. The results of technological forecasting should be taken into account by the National Institute of Production and Technological Development when determining the areas for providing innovation grants, including within the framework of targeted technological programmes.

The measures to be implemented in accordance with the policy for the development of high-tech small and medium-sized enterprises include the improvement of the financing system for enterprises in this sector of the national economy, the modernisation of production facilities, the implementation of technological innovations in small and medium-sized industrial enterprises and the development of the sales potential of SMEs.

This will be facilitated by supporting the technological modernisation of SME production capacities through the development of relevant local research and production potential. Targeted and effective digitalisation of the manufacturing sectors of the economy will ensure economic recovery both in this sector and in the national economy as a whole through the creation of multi-level information technology platforms for the main and supporting processes in the manufacturing industry, based on the development, modernisation and integration of domestic and foreign methodologies and software and hardware products. These practices focus simultaneously on strengthening the stability and sustainability of industrial development, industrial and socio-economic security, a sustainable process of high-tech modernisation and labour productivity growth, increasing innovation activity in the economy, and involving small and medium-sized enterprises in digitalisation and ICT development.

The present study puts forward a series of measures that are intended to form part of a new, modern neoindustrial policy. These measures include government support for high-tech exports, improvements to the relevant infrastructure, the creation of structures to coordinate foreign economic activities, support for market research and the intensification of marketing activities. These processes must be accompanied by active innovation and technological activities and include the creation of innovation observatories with the functions and tasks of analysing the dynamics of the scientific, technological and innovative development of the manufacturing industry, assessing the effectiveness of the policies being implemented, their consequences and impact on the development of science, technology and innovation, and developing and implementing recommendations to improve the efficiency and effectiveness of the policies being implemented.

Coordination of the activities of various development institutions and organisations to improve the existing ecosystem should be carried out by a single coordination centre, which could be established on the basis of the Ministry of Economy of Ukraine. All national, state, regional and local strategies and programmes for socio-economic development should be aimed at building a high-tech manufacturing industry and the national economy as a whole, stimulating the development of the most promising industries and projects for innovative technological development of industries as a benchmark for the business environment and science. The single joint centre should also carry out efficiency diagnostics and work on improving measures to stimulate the creation and implementation of high-tech innovations.

The same body should also initiate proactive measures to increase the contribution of manufacturing companies to strengthening the competitiveness of the national economy. This includes the creation and scaling up of high-tech technical and innovation special zones and industrial territorial and sectoral production systems (clusters), the formation and development of integrated closed-cycle systems for the development, production and marketing of hightech products of the processing industry, increasing the volume of activities of innovation and technology parks and ICT outsourcing centres for the digitalization of processing industries, stimulating vertical and horizontal cooperation between education, research and development.

The system of state measures outlined will also improve the position of the domestic economy in the leading international rankings of neo-industrialisation, innovation, technology and industrial development. These include, first and foremost, improving regulatory and organisational support for the development of the digital economy and digital infrastructure, providing financial and economic incentives for manufacturing companies to implement digital modernisation projects, initiating and supporting projects to create engineering clusters, introducing VI-VII technology modes in the manufacturing industry, expanding the use of artificial intelligence, creating digital platforms for a virtual interaction environment, and intensifying the development of the Internet of Things.

4. Formation and Calculation Algorithm of the Neo-Industrialisation Process Quality Index

Despite the implementation of these measures, the function of monitoring and control should be considered equally important, as it allows the authorities to get answers to the questions of how high quality, efficient and proactive the state industrial policy is, whether it is implemented in accordance with the plans and objectives set out in the strategy of neo-industrial development, and whether its results satisfy the domestic society. To this end, it is necessary to introduce the practice of calculating a regional index of the quality progress of the process of neo-industrialisation of the processing industry, the structure of which is shown in Figure 2, and the algorithm of its formation is shown in Figure 3.

Thus, the structure of the index is formed by indicators-characteristics that reveal the institutional, structural and functional components of the processes of neo-industrial modernisation of regional industrial and economic complexes. The methodology of the index calculation begins with the approval of the system of criteria used for the diagnosis and ends with the ranking of the regions and the preparation of the general report.

	nents of the Quality Progress Indicators by index components
Institutional	 The level of influence on the development of high technologies (technologies of the VI-VII modes) of regional and local strategies and programmes to support it; influence of state authorities and local self-government bodies (on the activation of high technology development processes); institutional capacity of elements of innovation and technology infrastructure; the degree of contribution of innovative and technological activities of processing enterprises and their high-tech production to the development of the region's economy; prevalence of breakthrough technological innovations and their impact on the domestic market; availability of technological leaders on the market as role models in terms of technological modernisation of processing enterprises; the degree of success of competitive strategies for high-tech development in the processing industry.
2 Structural	 The degree of realisation of the market capacity of high-tech innovative products of the processing industry; investment attractiveness of the market of technological innovations in the processing industry; a measure of consumer preferences (coefficient of differentiation) of high-tech products of the processing industry; intensity of competition in the high-tech processing segment; the share of profitable projects for the introduction of advanced technologies; the share of high-tech manufacturing products in exports.
Functional	 Availability of venture capital investment for innovative and technological activities of processing enterprises; sufficiency of financial support for servicing the processes of creation and implementation of modern technologies of the VI-VII modes; availability of intellectual and human resources for the creation and implementation of technological innovations; development of the consulting system on technological modernisation of industrial production; sufficiency of marketing and information support for technological development in the real sector of the economy; development of the intellectual property market and advanced technologies; the level of observance of rights to inventions, industrial designs and utility models.

Figure 2. Structure of the index of qualitative progress in the process of neo-industrialisation of the manufacturing industry in the country's regions

Source: compiled by the authors on the basis of (Zaichenko, 2020)

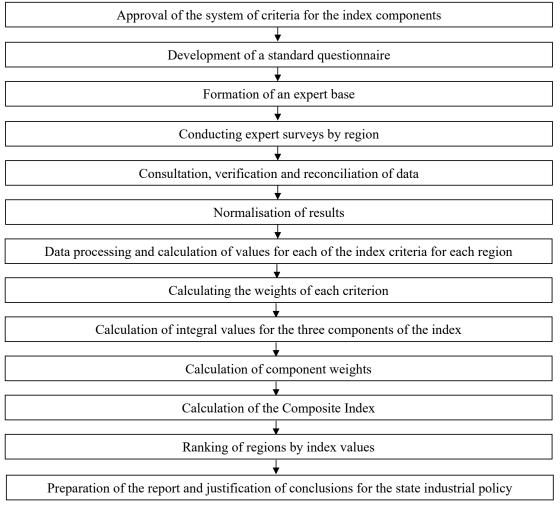


Figure 3. Algorithm for calculating the Process Quality Index for neo-industrialisation of the manufacturing industry in the country's regions

Source: authors' development

In order to carry out such an analysis in a systematic and continuous manner, it is necessary to develop a specialised information system that includes and provides such key services as the state of the manufacturing industry, the development of export potential, the balance of production and consumption, a navigator of state policy measures, current regulations, human resources support for industry and applied science, monitoring of the development of regional industrial infrastructure, and electronic services for industrial co-operation.

It would be desirable to set up a specialised online dashboard with information on manufacturing industries, infrastructure facilities and information and analytical data on the development of the manufacturing industry in terms of space and industry sectors and the most advanced and advanced technologies used.

The functioning of such a system will be aimed at developing tools for analysing the effectiveness of state

and local economic policy measures, visualisation and analysis of planned and actual values of key indicators of neo-industrialisation, visualisation and analysis of exports/imports, production and consumption balances of industrial products, data on practices and volumes of high-tech industrial co-operation, etc.

5. Conclusions

Neo-industrialisation is a systemic process that depends on and is expressed by various indicators. Therefore, it requires not only the understanding of strategic guidelines and tasks, but also operational goals, the achievement of which in a complex will allow to achieve the goals of state policy in the analysed area. As a result of the justification of tactical instruments and means of state policy for the implementation of the neo-industrial strategy for the development of the processing industry of Ukraine, it was established that a set of measures

(oriented to the achievement of strategic goals) should be implemented for such purposes. The measures consist of the development and implementation of the National Programme for the Development of Industry 6.0, the formation of its infrastructure, integrated systems, the implementation of joint projects, the improvement of the system of strategic and programming development of neo-industrial industries, the development of a system of financial and resource support tools and digital communication (formation of the "core" of neo-industrial industries). The neo-industrial strategy encompasses a range of initiatives aimed at modernising the policy of access of SMEs to financing, with a particular focus on venture capital. Additionally, it seeks to enhance resource security, stimulate the development of high-tech production based on SMEs through the utilisation of modernisation and technological innovations, foster the development of productive articulation within the SME sector, facilitate enhanced access of SMEs to new sales markets, and promote foreign trade by developing high-tech small and medium-sized enterprises. In addition, creation of a centre for coordination and development of institutional infrastructure for support of export of hightech products of the processing industry, foreign economic activity of processing enterprises in the implementation of joint investment and economic projects with foreign partners, formation of complex marketing products (with state support) for processing enterprises - exporters, formation of a full-fledged regional and sectoral investment infrastructure in

the system of foreign economic activity of high-tech industries of the processing industry, increase in the volume of exports of products of high-tech industries of the processing industry. Other strategic points include the creation and expansion of special hightech technological and implementation zones and industrial territorial-branch production systems (clusters); the creation and development of integrated closed-loop systems for the development, production and marketing of high-tech manufacturing products; the development of innovation and technology parks and ICT centres for the outsourcing of digitisation processes in the manufacturing industry; the stimulation of vertical and horizontal co-operation between representatives of education, science, innovation and manufacturing companies (increasing the contribution of the manufacturing industry to the competitiveness of the national economy). Improving the regulatory and organisational support for the development of the digital economy and digital infrastructure, providing financial and economic incentives to the processing industry entities for the implementation of digital modernisation projects, initiating and supporting projects for the creation of engineering clusters, introducing technologies of VI-VII technological systems in the processing industry, scaling up the use of artificial intelligence, creating digital platforms for a virtual environment of interaction, activating the progress of the Internet of Things, developing the ideology of sharing will lead to the significant place of the national economy in the leading international rankings.

References:

Amosha, O. I., Vyshnevskyi, V. P., & Zbarazska, L. A. (2012). Neo-industrialization and the neo-industrial policy of Ukraine. *Economy of Industry*, Vol. 1-2, p. 3–33.

Bondarets, M. V. (2016). Strategies of neo-industrial transformation of developed countries' economies in the context of globalization. *Global and National Problems of Economy*, Vol. 14, p. 42–45.

Chourasia, S., Tyagi, A., Pandey, S. M., Walia, R. S., & Murtaza, Q. (2022). Sustainability of Industry 6.0 in global perspective: benefits and challenges. *Mapan*, Vol. 37(2), p. 443–452. DOI: https://doi.org/10.1007/s12647-022-00541-w

Das, S., & Pan, T. (2022). A strategic outline of Industry 6.0: Exploring the Future. *Available at SSRN 4104696*. DOI: http://dx.doi.org/10.2139/ssrn.4104696

Duggal, A. S., Malik, P. K., Gehlot, A., Singh, R., Gaba, G. S., Masud, M., & Al-Amri, J. F. (2022). A sequential roadmap to Industry 6.0: Exploring future processing trends. *Iet Communications*, Vol. 16(5), p. 521–531. DOI: https://doi.org/10.1049/cmu2.12284

Ilyash, O. (2015). Strategic priorities of Ukraine's social security concept development and implementation. *Economic Annals-XXI*, Vol. 7-8(1), p. 20–23. Available at: https://ea21journal.world/index.php/ea-v152-05/

Karaeva, N. V., Levchenko, L. O., & Trokhimenko, Y. M. (2011). Analysis of approaches to the formation of systems of indicators of sustainable development. *Management of development of complex systems*, Vol. 7, p. 126–134.

Kasych, A. O. (2016). Modernization is a strategic task for the development of Ukrainian industry. *Business Inform*, Vol. 7 (462), p. 67–72.

Kulakova, S. Y., & Zhytnyk, O. M. (2023). The processing industry is a strategic direction for the development of the Ukrainian economy. *Financial and credit systems: prospects for development*, Vol. 2(9), p. 34–41.

Mazaraki, A., & Melnyk, T. (2021). Strategy of neo-industrial import substitution in Ukraine. *Scientia fructuosa*, Vol. *139*(5), p. 4–33.

Oliynyk, L. V., & Kuznietsova, A. P. (2018). Methodological principles of forming a strategy for enterprise development. *Economics and organization of management*, Vol. 3 (31), p. 118–126.

Prushkivska, E. V. (2013). Neo-industrialization is a process of renewal of the economy's secondary sector during economic instability. *Theoretical and applied issues of economics*, Vol. 28 (1), p. 191–197.

Reshetylo, V. P., & Ostrovsky, I. A. (2018). Neo-industrialization and its impact on the development of the domestic and international economy. *Scientific Bulletin of Uzhhorod National University. Series: International Economic Relations and the World Economy*, Vol. 18 (3), p. 21–25.

Sachenko, A. O. (2024). The concept of neo-industrial modernization of the processing industry within the paradigm of transformation of economic systems. *Entrepreneurship and Innovation*, Vol. 30, p. 35–39.

Yankova, R. V. (2023). The role of hybrid strategy in the process of innovative strategising. *Economics, management and administration,* Vol. 2 (104), p. 32–36.

Zaichenko, V. (2020). Priorities and tools for ensuring the technological competitiveness of the Ukrainian economy [Doctoral dissertation]. Lviv University of Trade and Economics. Available at: https://uacademic.info/ua/document/0520U101747

Zhytnyk, O., Kulakova, S., & Miniailenko, I. (2024). Analysis of the processing industry of Ukraine and ways to increase its competitiveness. *Economy and Society*, Vol. 60. DOI: https://doi.org/10.32782/2524-0072/2024-60-18

Received on: 09th of January, 2025 Accepted on: 20th of February, 2025 Published on: 13th of March, 2025