

2024

Vol 3, No. 1

ISSN 2782-6465 (Print)

ISSN 2782-6481 (Online)

NOONOMY AND NOOSOCIETY

ALMANAC OF SCIENTIFIC WORKS OF THE S.Y. WITTE INID



NOONOMY AND NOOSOCIETY
ALMANAC OF SCIENTIFIC WORKS OF THE S.Y. WITTE INID
Vol 3, No. 1 2024

Founder – S. Y. Witte Institute
for New Industrial Development (INID)

主办单位: 维捷新兴工业发展研究所

Registered by the Federal Service for
Supervision of Communications,
Information Technology and Mass Media
(Mass Media Registration Certificate PI
No. FS77–82239 of 22.11.2021)

在联邦通信、信息技术和传媒监督局注册。

(传媒登记证书编号为PIN°FS77-82239, 颁发日期为2021年11月22日)

The journal is a periodical scientific
publication published four times a year

本刊为科学期刊, 每年出版4期。

The editorial board without fail provides expert
assessment (peer review, scientific and stylistic
editing) to all content in the journal

本刊发表的所有文章经本刊编辑部审核(审阅,
科学和文字编辑)。

Official Journal website:
noonomy-journal.ru

本刊官方网站:
noonomy-journal.ru

Free pricing

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Almanac of Scientific Works of the S. Y. Witte
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DOI: 10.37930/2782-6465-2024-3-1-9-14

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A PATH TO NOONOMY: THE MAIN DIRECTION FOR GLOBAL DEVELOPMENT¹

Abstract: The issues of global development of humanity in the conditions of civilizational transformation are considered. Against the background of political and economic transformation associated with the shift of power centers to the global South, a transformation of human takes place. It is driven by the challenges associated with growing needs with limited resources. In the context of exacerbation of global problems, the coordination of private and public interests is of particular relevance. The solution to the problem is seen in the development trajectory towards a new industrial society of the second generation and further – to noonomy, in the transition from economic human to noohuman, aimed at creating a world of values of a more humanistic culture. The kick for technological knowledge can only be given by a changed person, a creative person, that is ready to comprehend new knowledge (including in the field of scientific and technical progress) and spiritual development. The following are considered as components of the path to noonomy: technological progress, diffusion of ownership, socialization of society and solidarity. The correlation of noonomy with the Chinese concept of a community of common destiny for mankind is emphasized.

Keywords: noonomy, noohuman, global development, transformation of the economy and people, diffusion of property, socialization of society, complementarity of the material and spiritual.

For citation: Bodrunov S. D. (2024). A Path to Noonomy: The Main Direction for Global Development. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 9–14. DOI: 10.37930/2782-6465-2024-3-1-9-14

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通向智慧经济之路与全球发展大方向

摘要: 本文探讨了在文明转型条件下人类的总体发展问题。在伴有力量中心向地球南部转移的政治经济转型形势下正在发生具有重大意义的人的转型，这是由资源有限而需求却不断增长的矛盾所带来的挑战所决定的。在全球性问题不断加剧背景下，个人利益与公共利益的协调显得尤为重要。这个问题的解决途径是迈向第二代新型工业社会并进一步迈向智慧经济社会，这是一个旨在建设一个更具人文性的价值体系的过程，也就是从“经济人”向“智慧人”过度的过程。只有发生转变并愿意掌握新知识（包括科技进步方面）和完善精神境界的人，即创造者，才能推动技术发展。技术进步、资本分

¹ The paper is based on the presentation at the Tongzhou Global Development Forum, “World at the Crossroads: Working Together for Global Development and a Common Future”, November 17-19, 2023, Beijing, China.

散、人的进一步社会化和社会成员关联性的提高是通往智慧经济之路的决定因素。文章强调了智慧经济学与中国提出的人类命运共同体概念的相关性。

关键词: 智慧经济、智慧人类、全球发展、经济和人的转型、资本分散、人的社会化、物质与精神的互补。

引用注释: 博德鲁诺夫 S. D. (2024) 通向智慧经济之路与全球发展大方向//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 9–14. DOI: 10.37930/2782-6465-2024-3-1-9-14

In the current difficult circumstances, the problems of modern *civilizational transformation* are in the focus of attention of all those who are concerned about global development, the fate of our common civilizational future [Bodrunov, 2018]. First of all, this is a *political and economic* transformation associated with the *global “repolarization”* – the gradual shift of the centers of power and influence from the global North to the global South. These processes are very unstable, but the trend is evident. Global, tectonic shifts in the system of world relations, which lie on the surface, often miss the main thing – the profound change associated with the *transformation of human*. The driving motivation behind this transformation is the *need to resolve the challenges associated with the satisfaction of growing human needs* as and when they are *realized* and depending on the availability of objective and subjective prerequisites and opportunities. That is why the humanitarian dimension of the ongoing changes should be the focus [Buzgalin, Kolganov, 2004].

Let us emphasize two important things: 1) People understand their needs and *realize* them; 2) Realization of *true* needs. The impossibility of simultaneous satisfaction of all needs is due to the limited resources, which leads to the *structuring* of society. It forms both opposing and cooperating groups aimed at satisfying their needs and realizing their economic interests. Accordingly, *controversy* arises in the community: on the one hand, private needs of individuals, which are objectively in *conflict* with each other (from hidden resentments to total rejection); on the other hand, common, unifying interests of the community, realized by single individuals.

At present, due to critical aggravation of global challenges, coordination of private and public interests gets *particularly relevant* [Frolov, 2019]. Resources are always limited; needs (within the framework of the traditional, expansion approach adopted in neoclassical economic theory) are growing and will continue to grow.

So, is the catastrophe inevitable? Do we really have *such* a “common human destiny”?

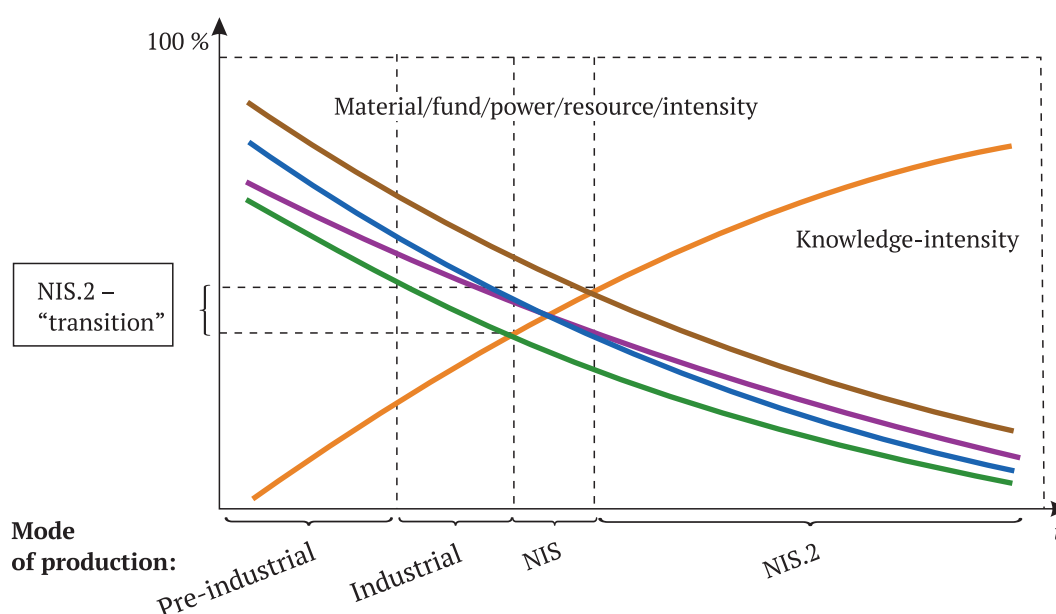
Our research shows that the pessimistic answer is determined not so much by *objectively observed trends* as by their *subjective interpretation in the mainstream* of socio-economic knowledge based on the value system of Western civilization. We in the S.Y. Witte INID proposed our own concept of development trajectory – from the modern economic society – to the new industrial society of the second generation [Bodrunov, 2016] and further – to noonomy [Bodrunov, 2018].

Today the world is at a “civilizational crossroads”: either *the collapse of the current civilizational model* or further *development*. The successful completion of this crossroad depends on the process of transition from an “*economic*” human maximizing the utilitarian needs to a noohuman – from “*zoo*” to “*noo*”, to a human thinking primarily about the development of spirituality, about creating a world where the *values* of a different, more humanistic culture prevail [Bodrunov, 2018].

Relationships *built on a collectivist criterion base* are quite possible. In the language of the theory of noonomy developed by us, this is explained in the following way: any “ego” interest is still

an interest of the “ego”, i.e. personal; but what really matters is that *what* is behind this “ego”. And this depends on the individual’s awareness and acceptance of the norms of the *noovalue criterion base of existence*. *Changing the essence of human* in a society that remains predominantly *economic* is the vector of development that can provide a successful way out of the civilization deadlock.

The theory of noonomy, which reveals the mechanism of movement to a non-economic society in which noonomy will take the place of economics, shows that from a certain moment the *knowledge, rather than material*, becomes *the main factor of production* (i.e., the creation of material objects). Hence the extremely important fundamental conclusion: *the further scientific and technological progress moves, the stronger the influence of the ideal on the material*. Production processes become more and more knowledge-intensive, and the products produced become more and more knowledge-intensive (see Figure).



The historical process of change in specific capacitive parameters of product components

The process of the *reverse influence of ideal on the material* is constantly intensifying as the knowledge becomes more and more available and its application becomes more and more diverse. The reason is the very process of cognition, its nature, as well as the nature of knowledge. Increasing and expanding, with *expanding our consciousness*, the process of cognition *generates new needs in cognition* and implementation of the results of this cognition in new technologies. However, this process can lead to both *positive* and *negative* consequences.

How do we prevent negative consequences? – Mankind should either abandon all technological achievements or put this process under *noocontrol*.

That way, we come close to more specific issues of *transformation of economic relations – and thus of human*. *Technological progress* becomes the *material basis* of these transformations.

We are facing not just the acceleration of STP, but “*acceleration of acceleration*”, a kind of second derivative of this process. Knowledge is transforming more and more intensively (also mediated by the progress of technology) into new knowledge and thus generating “*acceleration of acceleration*”. This, in turn, ensures the transition to a *new quality of technological development*, which we designate as the *seventh technological mode*.

The theory of technological modes (TM) of the Russian academician Sergey Glaziev [Glaziev, 2022] offers a gradation of technology in the form of six stages with different degrees of depth of *knowledge intensity* (in terms of the theory of noonomy). Here we are talking about a new, qualitatively different – the seventh TM. In the industrial product of *knowledge-intensive production* of this mode, the *knowledge* becomes the *basic factor of production and the main component of the product*, and the *product* itself is called *knowledge-intensive*. Knowledge is the prevailing component in the social product. This is the “border of equilibrium”: at this stage there is a *bifurcation* of civilizational development – either a progressive *transformation of human and economic relations*, in which the latter give way to a predominantly *post-economic way of meeting needs*, or *catastrophic consequences* on a global scale. Let us emphasize that we understand the globality of transformation not as a continuation (with some modernization) of the neoliberal model of TNCs’ domination of the “Core” countries over the periphery (as indicated in the world-system analysis of Wallerstein, Frank and Samir Amin). This type of globalization is in deep crisis. We are talking about a different dimension: *the unity of humanity as a whole and the objective conjugacy of all changes in time and space*. This is not a formal “sameness”, but a *profound coincidence, interconnectedness of technological, economic, social and cultural transformations. This is the formation of a community of common destiny of mankind on the basis of a new system of knowledge*.

What is the *impact of STP on economic and social transformations*, as well as on *human development*? Let us consider the changes in *economic relations* caused by the progress of technology. If the *market*, which links people in the process of exchange, *remains a relative invariant, then human and capital change fundamentally*. So, capital is *property*, and property is the basic, fundamental characteristic of the *economic system*. It is here that we can state the beginning of profound changes in the economy, which, as they develop, can revolutionize socio-economic relations in the direction of noonomy.

In recent decades, the process of property diffusion in the world not only continues, but also accelerates “in parallel” with the acceleration of STP. It takes on new forms associated with a marked departure from individual private property and the development of various types of its joint use in the processes of production and consumption [Bodrunov, 2021]. These are well-known and rapidly developing forms of co-working, co-living, sharing (the most famous example is car-sharing) and many others.

Manifestations of property diffusion along other vectors can be observed as well, in particular, the process of splitting of property rights. The collection of property rights, known since the last century and widely studied by scientists of the new institutional trend, is becoming more and more diverse: property rights are split into more and more fractional economic and legal “ingredients”. These “fractional powers” are also fragmented, distributed among various private economic actors (natural and legal persons, foundations, etc.). As a result, while mono-ownership used to be typical, today there is a process of blurring of mono-rights between persons who have different elements of ownership of the same object. Thus, the diffusion, i.e. splitting of property is taking place, and this affects not only the economic and legal, but also the value aspect, which is more important, because property relations are also a category of human values. As a result, many different interests of different actors of economic society emerge, and the process is growing.

Let us remind that property is the *basis* of modern *economic society* [Eletsky, 2012]. Its diffusion as an institution shows that *society* with an economic way of satisfying needs is becoming *a thing of the past*. *The erosion of economic society* leads to enormous *changes* in the system of

social relations. This does not change the nature of human (neither from the “zoo” nor from the “noo” point of view), *nor does it cancel the importance of satisfying needs*. But at the same time, a different, *post-economic* way of satisfying them is emerging. This process *undermines the basis of the economy – property*.

As a result of society’s objective “departure” from the economy, *human will return to true knowledge*, to the noo-essence, expanding this sphere of cognition. Thus, influencing the *socialization* of society, its *noodevelopment* and the *material basis* of its existence – the type and method of satisfaction of needs. The “economic human” will be replaced by a “*noohuman*”.

The above material allows us to draw some conclusions:

1. It is impossible to stop technological progress, but it must be put under *noocontrol*. To do so, *human must change*, because only human is able to curb STP, this flow of knowledge implemented in technology, and direct it to *true creation*. *Human must oppose the flow of technological knowledge to the flow of knowledge from the spiritual sphere*. And make them “equal partners”. Only by *changing consciousness* can human resolve this collision.

2. *Only a changed human can give further impetus to technological knowledge*. Human will not be able to endlessly drive the technological evolution of the 21st and subsequent centuries, remaining a “troglodyte” at the level of the 20th century. To further increase of the potential to fulfill the needs through *technological progress*, human must change. Human must become different, be able to self-actualize with *a higher level of knowledge*.

3. *Noohuman is a creator*. But a human being can *create* only through comprehension of *new knowledge*, including in the sphere of STP. *The knowledge, the ideal*, acts as the *beginning* of this process, which continues with the construction of mental objects and ends with the creation of *material objects*. And *therefore, a human should be more and more “knowledge-intensive”*, expanding consciousness – the receptacle of the ideal.

4. Without *alignment*, synchronization of society’s awareness of the full range of problems of the current transition, including *complementary spheres of knowledge* (material and spiritual), mankind runs the risk of following a negative scenario, overturning and sinking the ship of our civilization, turning from the path of neo-development to the deadlock of *technogenic dehumanization*.

The above arguments dictate the *requirement of socialization of society*, which is both a *condition* and a *consequence* of both STP and the development of the process of property diffusion. It is through *diffusion of property* that one of the ways of transforming the economy into noonomy, economic society into noosociety, “economic” human into a true homo sapiens (noo-homo sapiens), into noohuman, is formed.

Thus, the components of the path to noonomy are *technological progress* in its material aspect and the processes of *diffusion of property, socialization of society* and the increasing role of solidarity (instead of competition) in human relations generated by it.

The first steps on this path have already been taken – there is a realization of the *necessity* and *capacity* to walk along it. There are also *institutional prerequisites* for this. A new architecture of the world is taking shape, in which the key role is to be played by countries and peoples with not only a *developed economy*, but also a significant *spiritual potential*. In this respect, the theory of noonomy correlates with the Chinese concept of “a community of common destiny for mankind.”¹

¹ Jointly building new partnerships of cooperation and mutual benefit, building a community of common destiny. – Speech by Chinese President Xi Jinping during the debate at the 70th UN General Assembly. URL: http://russian.china.org.cn/exclusive/txt/2015-11/02/content_36956721.htm.

Today the world is faced with unprecedented *global* challenges caused by the *global transformation* of society. These processes require not only creative understanding in the framework of scientific discussions, but also coordinated practical work, which is actively carried out within the framework of BRICS, SCO, direct and productive bilateral cooperation between Russia and China, as well as scientists and intellectuals around the world.

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DOI: 10.37930/2782-6465-2024-3-1-15-25

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GLOBALISED NEOLIBERAL CAPITALISM AND THE ALTERNATIVES¹

Abstract: The paper describes the main features of neoliberalism, its benefits and drawbacks, and the reasons why it should be replaced. The author's arguments are based on a study of the strengths and weaknesses of neoliberalism. He reveals the reasons behind its popularity and identifies its main shortcomings and ways to eliminate it. The fundamental question of this study is an attempt to find a viable alternative to the neoliberal agenda and possible ways of its practical implementation in the foreseeable future. The latter requires redefining a space for alternative political and economic forms of a developed industrial society, including looking through a prism of the concept proposed by Professor S.D. Bodrunov's: a transition to reindustrialization, greater social solidarity based on state forms of economic coordination. The paper makes a valuable contribution to the discussion by proposing a hybrid form of regulated market socialism that could be adopted by the national economies of Russia, the United States and Western Europe.

Keywords: noonomy, global transformation, contradictions of capitalism, national economy, corporate capital, reindustrialization, neoliberalism, convergence, socialization of social structure, diffusion of property..

For citation: Lane D. (2024). Global Neoliberal Capitalism and the Alternatives. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 15–25. DOI: 10.37930/2782-6465-2024-3-1-15-25

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全球新自由资本主义及其替代方案

摘要: 文章阐述了新自由主义的主要特征、优缺点以及应被取代的原因。作者的论断基于对新自由主义的长处和不足的研究。说明了新自由主义为何仍有吸引力, 其主要弱点以及克服这些弱点的方法。本文的核心议题是探索新自由主义的可行替代方案, 以及在不远的将来践行替代方案的道路。为此需要确定可供选择的发达工业社会的政治和经济发展形式, 包括博德鲁诺夫S. D.教授提出的向再工业化过渡以及在国家经济协调基础上加强社会团结。文章提出了一种可被俄罗斯、美国和西欧国家经济所采用的混合形式的市场调节社会主义, 从而为这一问题的讨论做出了贡献。

¹ The paper is based on D. Lane's book *Global Neoliberal Capitalism and the Alternatives: From Social Democracy to State Capitalisms*. Great Britain: Bristol University Press, 2023. 335 p. Note: On April 5 2024 at the SPEC-2024, an agreement was signed on the publication of the book in Russian language. Russian Translation in Progress.

关键词:智慧经济学、全球转型、资本主义矛盾、国民经济、企业资本、再工业化、新自由主义、趋同、公共领域社会化、财产分散。

引用注释:戴维·莱恩(2024)全球新自由资本主义及其替代方案//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 15–25. DOI: 10.37930/2782-6465-2024-3-1-15-25

During the third quarter of the twentieth century, in world politics the ascendant political forces were those of socialism. The Soviet bloc presented an alternative setting to Western capitalism with different organisational structures, forms of property and political legitimacy. In Western Europe, capitalism remained. The humiliating electoral defeat of Winston Churchill in the UK, in 1945, symbolised the decline of right-wing influence, both politically and ideologically. Conservative, liberal and nationalist parties accepted the nationalisation of major industries, high levels of taxation, state economic direction and welfare redistributive politics. In Africa and Asia, anti-colonial movements, many with a socialist orientation, succeeded in decoupling from imperial political domination. Socialism in different forms had entered the public consciousness as a viable and desirable political objective. Socialism developed a counter culture to capitalism.

By the beginning of the twenty-first century, the political and ideological map had changed significantly. In Europe, by the 2020s, no credible social-democratic government was in power. Communist parties had largely disappeared. The USSR no longer existed. China had moved to private ownership, market competition and full membership of the IMF and WTO. The socialist appeal of collective provision significantly had declined. The dominant culture was one of consumerism and collectivist motivation had been replaced by possessive individualism. The former socialist and social-democratic parties, even when they regained political power, did not reverse but continued, even furthered, the neoliberal agenda. Now, it was the turn of the socialist and social-democratic parties that remained to adapt to the concepts and policies of a new dominant ideology, neo-liberalism. The leadership of social-democratic parties in Europe, and the reform movements in the socialist states, welcomed these policies.

Why had the neoliberal movement, an insignificant economic clique in the 1960s, become the major world economic authority in the 1980s? The explanation for its success must be something more than ‘the construction of consent’ [Harvey, 2005]. It is true that national and transnational political, media and economic elites have played a leading role in promoting neoliberal policies. They were often physically imposed on countries such as Chile, or enforced through the financial power of the IMF and rules of the World Trade Organisation.

But neoliberal policies were also widely adopted by elected as well as unelected governments as remedies for economic backwardness or decline. The rise of neoliberalism is not only a consequence of Western elite intellectual leadership and manipulation. It is also a reaction to the failure of statist policies and the result of major developments in the social structure of post-industrial societies.

Structural Changes

When we compare the underlying factors leading to the fall of state socialism and social democracy, we distinguish common processes. Both types of economy suffered internal decline in

the final quarter of the twentieth century. Both had experienced similar long-term trends in the social structure: the rise of non-manual, executive and professional occupations. The growing educated non manual strata provided the social and political base of support for a competitive market and a less state-managed system. As the social structure moved from a preponderance of manual industrial and agricultural workers, aspirations of the non-manual working classes could be met through access to higher education, to home ownership, to self-fulfilment through leisure, and the gratifications of a consumption society. Both experienced popular dissatisfaction with living conditions which did not meet people's expectations.

Both economic blocs were subject to foreign influences. In the socialist countries, reformers sought to join the world economic order and were encouraged to do so by the hegemonic powers. In Western Europe, countries were becoming part of an economic global system, dominated by the USA, coordinated by the World Trade Organisation and the International Monetary Fund. In both areas the traditional socialist appeal of collective provision significantly declined and was replaced by possessive individualism. Even critics of neoliberalism, who recognised its faults, considered that the alternatives on offer might be even worse. As Margaret Thatcher tersely put it: 'there is no alternative'. An assertion I shall question later in this article.

In this paper I summarise the discussion in *Global Neoliberal Capitalism and the Alternatives* [Lane, 2023]. I outline the major features of neoliberalism, its advantages and faults and why it should be replaced. My reasoning is based on the assumption that one must identify the strengths of neoliberalism, why it has appeal, then to consider its faults and how can they be remedied. Most importantly, I address the question of whether there is a viable alternative and how could it be achieved. I attempt to define spaces for alternative political and economic forms of advanced industrial society, including those as proposed by Sergey Bodrunov – notably, a shift to reindustrialisation, a greater social solidarity predicated on statist forms of economic coordination. The paper contributes to the discussion by proposing a hybrid form of regulated market socialism which might appeal to citizens in developed countries such as Russia, the USA and Western Europe.

The Components of Neoliberalism

Neoliberalism originated as an economic doctrine and has been developed to constitute a theory of society having legal, psychological, economic, political and social components. It claims superiority as a theory of how modern societies should be organised and adopted on a global scale. I explain and critique neoliberalism in the terms of its own advocates, based mainly the writings of Friedrich von Hayek and Milton Friedman. Nineteenth century liberal capitalism was an economic system driven by production for profit, and coordinated by market relations and competition. The state maintained private property rights and enforced laws. Neoliberalism widens and deepens liberal capitalism. It becomes, not just a form of economic mechanism, a theoretical approach to society. Its major components are summarised on Box 1.

In its psychological component, neoliberalism is based on the fulfilment of personal self-interest. For Margaret Thatcher, 'Economics are the method; the object is to change the heart.'¹ People should be free from social constraints, individual rights are foremost, diversity and social mobility are promoted.

¹ Butt R. Margaret Thatcher Interview for Sunday Times / Sunday Times. 03 May 1981. URL: www.marharet-thatcher.org/document/104475

Societal components of neoliberalism

Components	Description ¹
Psychological	motivations of personal self- interest act as drivers of economic development. Such psychological drives must be allowed to flourish in free associations, unfettered by the state;
Legal	supremacy of law: law defends liberty, defines rights to property, and enforces limits to state activity and the rules of the market;
Economic	unrestricted market coordination through competition at all levels of the economy; <i>marketisation is furthered by monetarisation and financialisation of ‘non- economic’ exchange to promote efficient allocation;</i>
Political	the state exercises law enforcement legitimated by electoral democracy; maintains property rights and actively promotes institutions of market exchange; <i>state activities are subject to market coordination, and open to audit of misuse (through state capture and corruption);</i> the state is subject to law and cannot override it;
Social	rights to private property, autonomous civil society, <i>the promotion of anti- discrimination and diversity, the monetarisation of human relationships;</i>
Coordination	the market is the principal form of exchange; the process of catallaxy (mutual spontaneous adjustment) and exchange between actors promotes well- being. <i>International institutions set and enforce rules between national and global economic actors;</i>
Boundaries	the international system, mediated by agreements between states, promotes free geographical movement of capital, labour, goods and services. Global institutions enforce rules to promote free capitalist intercourse on a world scale. <i>Political intervention in ‘unfree’ states by liberal states is legitimate to secure freedom.</i>

The rule of law is fundamental to neoliberalism, law safeguards the community’s ‘commonly held principles’, which Hayek considers to be the promotion of individual freedom. Law cannot be overridden by majority decision. Democracy is ‘a rule of procedure whose aim is to promote freedom’². Individual rights promoted by civil society are prominent political objectives. The state has a role, not only to monitor, but also to subject its own procedures to open access and to competition; the state becomes subject to law.

To economic liberalism is added a dimension of financialisation, which entails the monetarisation of social exchange relationships, and extends the area of the economic market mechanism. Financial motives and criteria, financial actors and institutions mediate between the person and social life. Financialisation of relationships promotes a regime of accumulation – financial criteria determine the allocation of investment; economic and non-economic organisations and associations are subject to financial scrutiny; and everyday life becomes financialised through the monetarisation of relationships [Zwan, 2014; Orhangazi, 2008]. These processes promote individual choice concurrently with the creation of profit. Examples here are the introduction of prices for services in the public sector, such as healthcare, education, and the use of private companies to run prisons and probation services, fees for parking cars on public roads, for the use of public playing fields and toilets are other examples. Speculation on various forms of currency evaluation (derivatives, futures) comes to replace the sale of goods and services.

¹ Note: Italicised text indicates items added to classical liberalism by neoliberalism.

² Quotation attributed to Hayek, cited by P. Mirowski, *Postface: Defining Neoliberalism*, in Mirowski and Plehwe, *The Road from Mont Pelerin*, pp. 417– 56, quotation p. 446.

The rise of financial institutions in the twentieth century presents a new stage of capitalism. Financialisation facilitates transactions and enables banks to increase levels of debt, thus enabling 'debt instruments [to] far outweigh equity instruments' as sources of revenue in relation to gross domestic product [Robbins, Di Muzio, 2016]. The central bank becomes independent of government, and thus is free to act as an economic player. This division seriously weakens the power of the state.

There is a global normative component to neoliberalism: economic progress should be enjoyed everywhere and it is legitimate to promote freedom internationally. The international system, mediated by agreements between states, enforced through global organisations, promotes free geographical movement of capital, labour, goods and services. Global institutions enforce rules in support of free capitalist intercourse on a world scale. Political intervention in 'unfree' states by liberal states is legitimate to secure freedom.

Neoliberalism has succeeded because the previous state-led welfare policies failed in securing the promised economic growth and rise in welfare. Market based policies have favoured those who own and control financial and non-financial assets, the better educated professional and executive classes: all these groups have benefitted from greater income differentials. In a geo-political sense, the hegemonic countries led by the USA have profited. Economic elites in rising states, particularly China and Russia, have gained from the open market created by globalisation. Neoliberalism has given them: 'what they think they deserve'. The acceptance of competitive market conditions, by the same token, has given those who fail, 'what they deserve'.

Major Effects of Neoliberal Policies

States have strengthened property rights, and considerable destatisation of ownership, notably in the post-socialist states, has occurred. Marketisation has been extended in scope through the monetarisation in a wide range of services, from the introduction of charges for street parking to fees for education and health provision. Liberal market policies, adopted in societies such as China, have opened up the economy by rewarding entrepreneurship and enterprise; policies of the World Trade Organization have facilitated free trade and the movement of capital and labour which consequently led to the industrial development of Asia. Adding markets to state planning has led to economic development – notably, in China.

Neoliberalism has commanded wide support and, as a normative theory, has been adopted by a diverse set of political parties to shape public policy. Developments in all the former state socialist countries involved a regime change and the establishment (or reestablishment) of a capitalist class. Whereas in the Western European states, in contrast, the outcome resulted in the weakening of nation states and the rise of a transnational global class which identified with global networks. Following the institution of neoliberalism, political objectives have shifted. Moving from capitalism to socialism in the twentieth century has given way to replacing autocracy with democracy.

Given the widespread acceptance of neoliberal ways of doing things, why should we look for an alternative to neoliberal capitalism, where is there a place, if any, for noonomy? What is wrong with global capitalism and how can its faults be remedied? If we consider neoliberalism in the terms of its own assumptions about economic life, there are considerable shortcomings. I suggest that neoliberal capitalism has intrinsic faults as an economic theory. We need to define what they are, and how a noonomy approach might resolve them.

Faults in Neoliberalism

1. Methodological individualism. That is the assumption that economies are driven by fulfilling the economic priorities of individuals through market relationships.

The fault in neoliberalism is that it considers individuals who are assumed¹ to be equal in relation to the market, not organisations, corporations, classes or governments which, as economic actors, have different objectives and operational principles.

In neoliberal thinking there is an absence of holistic knowledge (considering the economy as a whole), only the sum of the perceptions of free individuals, fulfilling their ‘choices’ in the selection of goods and services. ‘There can be no collective consciousness superior to the aggregate of individuals’ interests’². ‘Wants’ may also be created artificially through advertising thus leading to spiralling demand for commodities. A concept of ‘society’ implies that a rational calculation can be made to fulfil human needs on a collective basis. As Sergey Bodrunov has pointed out, economies are entering an era when this would be practically possible [Bodrunov, 2024, p. 230]. Indeed, the premise of all modern governments is that they can act for the community.

2. A second consequence of neoliberal policies is the unjustifiable and growing unequal levels of wealth and income constituted by narrow ownership of wealth. Such inequality drives market forces distorting economic outcomes. Securing rights to private property is justified by von Mises and Hayek as a necessary condition for the development of capitalism.

For its initial rise, they have been correct. But the literature, going back to the 1930s, on the modern corporation and the separation of ownership from control [Berle, Means, 1932; Marris, 1964] puts in question whether private corporate ownership is any longer a necessary, let alone a positive, feature of a modern economy. Inheritance of capital assets breaks the link between the creators and beneficiaries of wealth and, over time, cumulatively creates a parasitical class living off the proceeds of unearned income. The uneven distribution of wealth and income leads to distortions in the use of economic resources not in keeping with economic justice or social needs. Consequently, social solidarity is undermined.

3. Neoliberalism assumes that the interests of communities can only be met through ‘spontaneous’ exchanges (what von Hayek terms catallaxies) ‘produced by the market through people acting within the rules of the law of property, tort and contract’³. It is through such mutual adjustments that economies are optimally coordinated. The approach overlooks imperfect knowledge on the part of actors, which may for example, lead to environmental damage. Financial markets involve spontaneous exchanges but not always of the virtuous kinds envisaged by writers like Milton Friedman. They promote computer-based trading in which speculators’ profit is derived from rises and falls of stock market prices. Unregulated profit driven development involves social costs, environmental damage and ecological destruction.

4. Recurring economic crises of capitalism lead to underutilisation of capital (slumps) and labour (under- and unemployment) resulting in a lack of social solidarity.

¹ Rodrik D. *The Globalisation Paradox: Why global Markets, States and Democracy Can’t Coexist*. New York: Norton 2011, particularly chapter 9.

² See discussion of the ways that von Mises’s thought has influenced the formation of a neoliberal sociological theory. Gane N., *Sociology and Neoliberalism: A Missing History*, *Sociology*. Vol. 48. Iss. 6. Pp 1092– 1106l (particularly Pp 1094–10955).

³ Hayek F.A. *Law, Legislation, and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy*. Vol. 2 *The Mirage of Social Justice*. London: Routledge, 1976. Pp. 108-109. For an overview, see: Gamble A. Hayek and the Left. *The Political Quarterly*. 1996. Vol. 67. Iss. 1. Pp. 46-53.

The market is claimed to have self-adjusting mechanisms and countervailing forces which through marginal adaptations counter the sub-optimal use of labour and capital, such as structural unemployment and slumps. Equilibrium can settle at a below optimum level and is not corrected through the economic mechanism¹.

Hence countervailing economic forces do not stimulate a new higher economic equilibrium. Existing tendencies reinforce each other. Depressed economic areas do not stimulate reinvestment and growth, but cumulative decay, leading to massive disruptive migration. Initial inequalities are amplified in a pattern of circular and cumulative causation². Consequently, the market fails and the state has to intervene to break the inertia.

5. The vision of a global neoliberal economy creating wealth and a ‘democratic peace’ ignores the political and economic hegemony of the dominant states. Democratic peace pertains between the neoliberal-led states of the core but not between them and the rising ‘non-democratic’ states, as noted in point 4 above, existing inequalities between the politically hegemonic states at the core of the world system (particularly the USA and the UK) are exacerbated by the propensity of neoliberal economies to territorial enlargement. Consequently, challenges arise from, and even war breaks out with, the rising semi-core states.

Many of these features existed before, or are independent of, neoliberalism and globalisation, and it is important to distinguish between them. It is essential not to conflate all problems of the world and to attribute them to one single cause – ‘neoliberal capitalism’. As Karl Polanyi has emphasised, capitalism is embedded in historically and socially constituted institutions [Polanyi, 1957], which also contribute to social life. Neoliberalism constitutes a legitimating ideology of advanced capitalism and has had a profound influence in shaping not only capitalist societies but also on the views of its critics. Moreover, any credible alternative to neoliberalism, must be able over time to resolve these problems. It is here that Sergey Bodrunov’s and Sergey Glazyev’s approach becomes relevant and I draw considerably from their arguments. Noonomy counters the spontaneous and individualistic approach of neoliberalism. My proposal to move forward is to find spaces in the current economic structures through a hybrid type of economy.

Alternative Formations to Neoliberal Capitalism

What then of the alternatives to global neoliberal capitalism? While aspects of neoliberalism have influenced and even been absorbed into critical approaches, I can identify eight major economic and political options. These are not mutually exclusive categories but more or less coherent ways of thinking about how alternative economies might be structured and coordinated. The approaches address different outcomes of neoliberal policies and some aspects may be compatible with liberal forms of capitalism. Here I briefly outline these approaches which are described in detail in my book; I discuss in more detail regulated market socialism which is a hybrid system compatible with a noonomy approach.

¹ See discussion in Keynes J.M. *General Theory of Employment, Interest and Money*. Pp. 249–254. Robinson J. *The Economics of Imperfect Competition*. London: Macmillan (2nd edn), 1969. 352 p. Robinson J. showed how imperfect competition led to firms producing below the optimal level.

² Here I follow the reasoning of Gunnar Myrdal, *Economic Theory and Underdeveloped Regions*. London: Duckworth, 1957. The self-sustaining and cumulative process of inflation, which was particularly applicable to the post-socialist economies in the early years of transformation, has a similar effect.

Alternative forms OF capitalism

1. Social democratic corporatism: coordination based on a coalition of stakeholders – socialist parties, trade unions, business pursuing profit, and government acting as the chief coordinating body). Mainly production of exchange values, state redistribution (welfare state).

2. State-capitalism (state ownership and control of economic assets, coordinated by planning, realising surplus for the benefit of a state bureaucracy). This social formation should not be conflated with state capitalism in the general sense of the state having economic power].

Alternatives TO capitalism

1. State socialism (state ownership and direction of the economy organised on a comprehensive plan putting into effect socialist objectives. In this social formation there is production of use values).

2. Market socialism (public ownership with maximum market competition and minimal collective coordination).

3. ‘Fully automated’ communism. (Post-capitalist society predicated on automation and AI which form the technological base to a society without scarcity and the need to work).

Hybrids: Mix of capitalism and non-capitalist coordination

1. Autonomous self-sustaining economies (exchange networks of self-sufficient, self-governing economic and social actors) operating within capitalism.

2. State-controlled capitalism (politically-led state institutions directing private and/or quasi-state corporations operating for profit).

3. Finally, regulated market socialism (macro socialist state plan, mixed ownership, retail markets). A transitional stage to socialism which is what I discuss here in more detail.

Regulated market socialism

Here are the political spaces for an alternative form of advanced industrial society as proposed by Sergey Bodrunov. Such divisions provide spaces for alternative developments, for a counterpoint. Global ideational norms, principally neoliberalism, are confronted by other civilisational ideologies, to which noonomy contributes. The rise of a hybrid world system gives opportunities to the semi-core states to enhance their own economic, political and civilisational institutions along the lines suggested by Bodrunov. Notably a shift to reindustrialisation, a greater social solidarity predicated on state forms of coordination with lower differentials of income and wealth. Noonomy in general refutes the spontaneous and individualistic approach of neoliberalism. The challenge for noonomy is to define itself as a realistic and credible alternative to global neoliberalism.

The problem to be addressed is how to transcend contemporary global neoliberalism in the advanced capitalist countries, such as Russia, the USA and UK. We are not concerned here with rising countries of the global South. The aim is to institute policies which will abolish the class exploitation of labour, improve human well-being, avoid economic disruption and prevent political sabotage and minimise social conflict. Regulated market socialism is proposed as an economic system offering the advantages of a planned economy and the retention of consumer choice and individual entrepreneurship in the market sector. Here I follow the idea, proposed by S. Bodrunov of a ‘synthesise of planning and market regulation’[Bodrunov, 2023, p. 221].

I propose two coexisting systems of economic coordination. Planning is exercised at the macro level of states, while markets and networks promote individual achievement and satisfy

consumption at the micro level. It revises market socialism by limiting market competition and strengthening the level of state planning. The rise of computerisation and artificial intelligence has made planning at the state level much more efficient and effective. Reindustrialisation based on high-tech development and a rising GDP should be, as Sergey Bodrunov suggests, at the 'very heart' of an economic development model [Bodrunov, 2023, p.140]. Industry is crucial for developmental and security purposes. This kind of technological revolution, under state guidance, would follow countries such as South Korea and China. There is also the factor of growing abundance brought about by developments in the level of productive forces through artificial intelligence and automation. Bodrunov mentions these developments when he considers a 'new rationality' [Bodrunov, 2023] which directly satisfies human needs. Though this is some way in the future, the rise of 'automated communism' [Bastani, 2019] would occur in the public sector, as market relations would not be profitable.

A 'social state' is envisaged as a post-capitalist socialist political and moral order – without losing the satisfactions of a pluralist consumer society. Economic surplus, made available from public ownership, plus tax revenues, is allocated through a state plan. Socialist planning is revisited in the context of computerisation. The justification for public ownership is that it can perform more efficiently and effectively than private ownership. It is proposed for major economic corporations selected on the basis of economic failure or lacking in public responsibility. The private retail sector continues and functions through markets. The economic moral order of self-motivating individualism is retained and the political order of democracy, competitive political parties, is extended to include participation in work institutions (economic democracy). Socialist democracy then commands the high moral ground. As I pointed out in an earlier paper: to capture the hearts and minds of the people, any alternative has to have an ideational appeal. Consumer society continues. Life must appear more fulfilling and satisfying than at present. Socialism develops in a democratic society with a competitive electoral political system.

What influences my conclusion is a need to avoid the adverse consequences of 20th century socialist revolutions, which have occurred in Russia and China. In the transitional period, it is crucial to prevent civil war, to avoid economic discord and positively to improve economic welfare. Life should improve under socialism. These proposals reduce the absolute and relative distribution of income and inherited wealth and in so doing enhance social solidarity. It is important not to threaten citizens who possess personal assets through their own savings and labour, including those who have built up (or intend to create) small- and medium-sized businesses; initiative and innovation should not be penalised. Nationalisation of property would be limited to assets that create illegitimate social privileges to the detriment of the great majority or to wealth that presents an obstacle to economic progress. The objective is to create a political and social base of support for the transfer of ownership and control of corporate private property. It would allow, even increase, the use of economic surplus which furthers economic development and concurrently would limit and control levels of economic exploitation. Profits in the private sector would continue to be subject to taxation as they are under competitive capitalism.

For companies that are transferred to public ownership, appropriate compensation could take the form of bonds on which interest would be paid from future earnings of the company. The overwhelming majority of the population would not be under any threat of being dispossessed of their personal possessions. Corporations to be nationalised would have immediate benefit to the public.

Forms of electoral competition would continue giving citizens the opportunity to modify, even reverse, the changes. As electoral democracy is not threatened, opposition to the installation of a 'totalitarianism' society would be disarmed. Practices of democratic participation could be widened to include employee participation in economic enterprises. Such proposals have the great advantage that a transition could take effect within the existing political framework, it would preserve economic and political stability and have immediate positive effects. The absence of political violence in contemporary electoral systems would help minimise it during the transition [Chenoweth, Stephan, 2011]. This strategy is likely to appeal to the sentiments and dispositions of people who have been socialised into believing that democracy, creativity and self-improvement have merits.

Planning at the macro level, coexisting with markets at the micro level, leads to a hybrid form of economic coordination – regulated market socialism. The state would channel direct investment according to a long-term plan, taking account of social costs, technological developments, geographical location and the need to maintain a full employment economy. The market economy would function for small and medium size business and continue at the core of a consumer society. It would provide an arena for innovation and entrepreneurial effort. The form of regulated market socialism I have outlined is intended to move in the direction of socialism within capitalist market societies with established party-based electoral political systems.

My proposals are more than 'stakeholder capitalism' [Hutton, 2015, p. 141]. The state would have a comprehensive purposive planning role and would be a major actor with considerable ownership of industrial and financial assets. The economic plan would define the parameters of the market. As wealth increases, so would the free supply of collective goods (health, education, pensions, economic welfare) and a universal basic income could be introduced. As technology develops, the working day could be shortened. Such measures would result in a cumulative reduction in surplus value, of profit.

Following Bodrunov, satisfying human needs would be a prime motive of the economic and moral order. Distribution of retail products and services (from the public and private sector) would be coordinated by the market. A pluralist competitive system of political parties would continue. Economic strategy would be grounded on a coherent developmental policy, with economic democracy.

You may think that all this is wishful thinking. Such views have little political support. They do not figure on the agenda of any political party. There is widespread inertia. Established neoliberal forces appear ideologically and politically superior. In all these respects, you would be absolutely correct. But note the following: 'Only a crisis actual or perceived produces real change. When that crisis occurs, the actions taken depend on the ideas that are lying around. That, I believe, is our basic function, to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes the politically inevitable' [Friedman, 1962, p. 7]. The quotation is not from Marx, Lenin, Mao Zedong or Sergey Bodrunov but from 'Capitalism and Freedom', the handbook of neoliberalism, written in 1962 by Milton Friedman. Taking the cue from Milton Friedman, we might conclude that noonomy, which now appears 'politically impossible', might become 'politically inevitable'.

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DOI: 10.37930/2782-6465-2024-3-1-26-33

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IS THERE A RETURN OF INDUSTRIAL POLICY WITHIN MAINSTREAM ECONOMICS?¹

Abstract: This paper argues that Mainstream Economics (both Neoclassical and Keynesian) have a myopic understanding of Industrial Policy. This derives from their class perspective (supporting the interests of the capitalist class) and their correlated lack of a political-economic understanding of economic relations and policies. Thus, they oscillate between warm embracement to utter rejection of industrial policy, as the latter is rightfully considered the most interventionist of the economic policies. In this sense, during the era of Neoliberal dominance industrial policy was castigated as inefficient and useless. Since the beginning of the 21st century and as the failure of Neoliberalism became obvious, the novel orthodoxy of New Keynesianism moves towards a return of industrial policy. However, this is a limited return. In contrast to mainstream myopias, Marxist Political Economy offers a robust understanding of industrial policy based on its superior class-based and value-theoretic analytical toolbox.

Keywords: economics, political economy, neoliberalism, industrial policy.

For citation: Mavroudeas S. (2024). Is There a Return of Industrial Policy Within Mainstream Economics? *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 26–33. DOI: 10.37930/2782-6465-2024-3-1-26-33

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主流经济理论是否在回归产业政策?

摘要: 文章认为, 主流经济理论(新古典主义和凯恩斯主义)的代表人物对产业政策的理解有限。这源于他们的阶级观点(支持资本家的利益), 以及缺乏对经济关系和政策的政治经济学层面的理解。因此, 他们对产业政策的立场在完全肯定和完全否定之间摇摆不定。这是因为产业政策被认为是最具干预性的经济政策, 且这种观点有充分的依据。从这个意义上说, 在新自由主义观点占主导地位的时代, 产业政策遭到了批评, 被认为是无益的无效的。自21世纪初, 新自由主义的失败已很明显, 此时, 占主导地位的新凯恩斯主义开始回归产业政策。然而, 这种回归是有局限性的。与只谈局限性的观点不同, 马克思主义政治经济学借助其优秀的阶级和价值理论分析工具对产业政策进行了深度剖析。

关键词: 经济学、政治经济学、新自由主义、产业政策。

¹ The paper is based on the report at the 36th session of the S.Y. Witte Institute for New Industrial Development (INID) International Theoretical Seminar "Global Socio-Economic and Geopolitical Transformations: Theory and Practices" (5 April 2024, Saint Petersburg)

引用注释:马夫罗迪亚斯 S.(2024)主流经济理论是否在回归产业政策? //智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, 26–33. DOI: 10.37930/2782-6465-2024-3-1-26-33

Industrial Policy: A Controversial Concept

Industrial policy is perhaps the most controversial of the economic policies. As Pack and Saggi acknowledge, few issues provoke such strong reactions from economists and policy makers as that of industrial policy [Pack, Saggi, 2006, p. 1].

The very term ‘industrial policy’ covers a wide spectrum of state goals and actions promoting the efficiency, the sustainability and the growth of the economy as a whole. In this vein, one of its main levers is state intervention for the change of the structure of the economy; thus, altering its sectoral mix. What exactly is included in these two axes and whether they are both necessary has been the subject of intense debate. Therefore, disputes and controversies start from its definition and extend to its content and effectiveness. Since the onset of Neoliberalism, the content but also the very existence of Industrial Policy has come under fire.

The debates about the definition: historical and political-economic roots. The historical roots of the debates on the definition focus upon one question: **Is industrial policy only about industry?**

Industrial policy was born in practice (but not yet in name) during the transition from feudalism and post-feudalism to capitalism. A crucial aspect of this transition was the (capitalist) industrialization of the pre-capitalist mainly agricultural economies. State policies (i.e. industrial policies in all but its name) played a critical role in this transformation. Similarly, in the projects to build a socialist economy (most notably those of the Soviet Union and People’s Republic of China) the strengthening of the industrial sector was of paramount importance, as this sector contributed decisively to the creation of the material bases for the socialist transition. This gave rise to a **‘narrow’ definition**: state intervention to industrialize the economy (e.g. Reich, 1982; Johnson, 1984).

Today, a **‘broad’ definition** is more pertinent and popular: industrial policy covers any government intervention that aims to enhance the efficiency of the economy (e.g. Pinder, 1982; Rodrik, 2007). This definition does not limit industrial policy to industry but concerns all sectors of the economy. Modern economies – of any type of socio-economic system – are much more complex than the old ones and this is also reflected in the interconnections between their branches. In particular, the existence of complex production chains (i.e. activities that combine elements of more than one sector) leads to the extension of industrial policy to all sectors of the economy. Of course, regardless of the level of development of an economy (i.e. whether it is more or less developed), the industrial sector always maintains its primary strategic role in the economy and its primary contribution to the creation of economic wealth.

There is a side debate touching upon the previous issue: **is the industrial sector the main growth generator of the economy?** The Heterodox and Marxist views support the qualitative superiority of the industrial sector in the creation of economic wealth. On the contrary, Orthodox views – and especially most of the Neoclassical approach – do not accept this privileged role of the industrial sector.

The Neoclassical approach is characterized, in its majority, by the rejection of the existence of any special role of the industrial sector in the process of growth and development (e.g. Balassa, 1990; Lucas, 1990). This view is based on the Neoclassical assumption of perfect competition. The distributional and economic efficiency of private business plans is far more important than the

prioritization of the industry. Therefore, the market will determine which sector of the economy contributes most to the creation of economic wealth. The industrial sector is not by definition endowed with any superior contribution to the creation of economic wealth. Strengthening the industrial sector – as long as the market does not do it spontaneously and by itself – is a sign of inefficient allocation of productive resources. From the above it follows that the most important thing is not the selective reinforcement of a sector but the implementation of general policies for all the sectors of an economy.

On the contrary, both Keynesianism (e.g. Kaldor, 1957; Kaldor, 1961) as well as Marxist Political Economy (e.g. Tregenna, 2013) argue that the industrial sector has a strategic role in the functioning of the economy and contributes crucially – directly and indirectly – to the creation of economic wealth. This position is based on the following arguments [Kaldor, 1966]. First, the industry contributes more to total output than other sectors. Second, its contribution to employment generation is also stronger than that of other sectors of the economy. The combined effect of these two elements is a superior contribution to the total per capita income of the economy.

This position is more or less unchallenged regarding the initial steps of a country's development. In recent decades, however, it has been argued by some quarters that when an economy is more developed, this crucial role of the industrial sector recedes and is replaced by services (i.e. the tertiary sector). This view mainly reflects the experience of Western economies. It acknowledges that, to a large extent, the tertiarization (i.e. the increase in the role of the tertiary sector) of Western economies has been based on the transfer of industrial activities to non-Western countries by Western multinational corporations. Also, that even in tertiary economies technological innovation and change tends to be concentrated in the industrial sector. This is even more true in the case of complex production chains (i.e. production activities that combine elements of the primary, secondary and tertiary sectors).

The debates about the definition: political economic roots. The political-economic roots of the debates on the definition of industrial policy focus on two issues:

(a) **Is industrial policy an aberration?**

(b) ***Should industrial policy be selective or universal?***

Pure Neoliberalism has an outright distaste for industrial policy. As declared by Becker, '*the best industrial policy is its complete absence*' [Becker, 1985]. The reason for the Neoliberal abhorrence is the heavily interventionist nature of industrial policy: in addition to general measures to make the economy work more efficiently, it also includes interventions in the structure of the economy. The latter strengthen specific sectors of the economy over others. Therefore, it deforms inefficiently the market allocation of resources (which is considered efficient by definition).

But the pure Neoliberal concept of absence of industrial policy, despite its ideological dominance, could not face the practical problems of functioning of capitalist economies. Thus, it remained mainly an ideological sermon, as the state apparatuses for managing the economy needed more practically oriented tools to deal with the problems of the economy. The practical failure of Neoliberalism led to the acceptance of industrial policy but at the same time to the modification of its content. Whereas in the past industrial policy was explicitly interventionist, now this interventionism is being moderated. The goal is not for the state to intervene mainly directly and subtly in the economy but, on the contrary, to give incentives to the private sector to move in the indicated directions. That is, compared to the highly active and direct industrial policy of the past, the new industrial policy is much less active and more indirect.

We distinguish two broad categories of industrial policy:

(1) **Horizontal industrial policy** applies general regulations and policies to the entire economy without affecting the balance between individual branches of the economy. This category is usually characterized in the literature as a ‘leveling the field’ policy). That is, it creates the same operating conditions for all businesses and sectors.

(2) **Selective (discretionary or vertical) industrial policy** focuses on specific industries and applies selective (i.e. differentiated) regulations and policies that change the balance between individual sectors of the economy. This category is usually characterized in the literature as a ‘picking winners’ policy). In this case, industrial policy strengthens some industries and ignores and/or abandons others. That is, it creates different operating conditions for businesses and industries.

It is obvious that the second category of industrial policy is objectively more interventionist. In this case, industrial policy seeks to create ‘winners’ (i.e. industries that prevail over others). Also, it may aim to go beyond the existing structure of import and export industries and rearrange it (usually this is called comparative – advantage – defying). That is, it does not follow market options, but seeks to reverse them. Therefore, leading instead of following the market (leading versus following the market).

Neoconservative currents prefer the first category with the argument that it does not distort the free functioning of the market less. That is why from the 1980s onwards horizontal policies were mainly implemented. But, gradually and as the practical impasses of neoconservatism swelled, the gradual return of vertical industrial policy began.

Industrial policy uses various tools. Because industrial policy interventions can address many aspects of the economy, its tools also fall into the realms of other economic policies (such as fiscal, monetary and foreign economic policy). Industrial policy tools are divided into two main categories:

1) **Exclusively public instruments:** These are instruments based solely on the public sector. In this case, it is about the production of products and services that (a) are classified as public goods and (b) there is a direct supply of them (direct provision) from the public sector. These means are not involved – in their pure version – in the market process.

2) Public instruments that incentivize the private sector to produce and/or distribute certain products and services. In this case, it is sought to mobilize the private sector to move in the direction indicated by the industrial policy. These instruments operate **through the market** (market – driven).

In the past, tools of the first type were more important. With the rise of neoconservatism, the main burden of industrial policy shifted to tools of the second type. The classic argument of the neoconservative currents is that media operating through the market intervene more gently in the latter. By definition, they argue that the market is more efficient than the public sector. This view has been criticized that mobilizing the private sector to achieve industrial policy objectives is slower, more expensive and more uncertain than their immediate implementation by the public sector. After the global crisis of 2008, there is a gradual return of the first category means. Especially during the crisis triggered by the COVID -19 pandemic, this return of public media became more intense in the face of the inability of the private sector to cope with the health and economic aspects of this crisis.

The end of Neoliberalism and the advent of New Keynesianism

The advent of the 21st century was characterized by intense economic upheavals but also the aggravation of international geopolitical rivalries and conflicts. In this environment, the failure

of Neoliberal policies and doctrines was felt. Especially with the global crisis of 2008, the latter were hastily abandoned. Gradually, Neoliberalism’s place as economic orthodoxy was occupied by New Keynesianism with the New Macroeconomic Consensus.

This gradual withdrawal of Neoliberalism led to the return of industrial policy. However, New Keynesianism is not a radical break with the Neoliberal past but a juncture within a continuum. It remains within the general neoconservative concepts and could be characterized as a modern version of the current of Social Liberalism. Within this context, the return of industrial policy takes a different form of its pre-Neoliberal one. Whereas in the past industrial policy was explicitly and directly interventionist, now this interventionism is being moderated. The aim is not for the state to intervene mainly directly in the economy but, on the contrary, to give incentives to the private sector to move in the indicated directions. That is, compared to the highly active and direct industrial policy of the past, the new industrial policy is much less active and more indirect. As Naudé observes, even many of the former opponents of industrial policy have moved towards a softer one that is horizontal and less intrusive [Naudé, 2010]. A case in point is the EU. Similarly, the World Bank has moved in favor of an industrial policy that can defy the market but only for a while and not to a large extent [Lin, Chang, 2009].

Based on the above, after the outbreak of the 2008 crisis, interventionist industrial policies were used by most developed economies. Subsequently, the sharpening of international political-economic rivalries strengthened the role and presence of industrial policy. For example, the US with the Trump administration (but also before) systematically implemented an interventionist industrial policy. They proceeded to repeatedly impose tariffs on Chinese imports into the US (with China responding accordingly). Similarly, the EU is discussing the creation of ‘European Champions’ (i.e. large monopolies or oligopolies in strategic sectors of the economy) that can face American and Chinese competition. In March 2019, the European Council called on the European Commission to present a new ‘dynamic industrial policy that enables the EU to remain an industrial power’. In response, the Commission presented a Communication on a ‘New Industrial Strategy for Europe’ in March 2020¹ and an update in the light of the COVID -19 pandemic in May 2018².

An interesting element that emerges from the above is that as imperialist conflicts intensify and deepen, the New Keynesian orthodoxy appears to be moving away from horizontal industrial policy towards more selective and interventionist versions of industrial policy. The COVID-19 pandemic and the economic crisis that accompanied it reinforced this trend.

The following table offers a chronology of the evolution of industrial policy.

Time period	Character of industrial policy	Ideologically dominant stream of economic thought
15th c. – early 20th century	Informal and empirical application of it	Mercantilism, Liberalism & Neoclassicism that violated its principles
Interwar	Formation of the industrial policy and its systematic implementation	Challenging Neoclassicism, establishing Keynesianism
Post-war period until the mid-1980s	Development of the theory of industrial policy and its extensive and systematic application	Keynesianism

¹ COM (2020).102final.https://ec.europa.eu/info/sites/default/files/communication-eu-industrial-strategy-march-2020_en.pdf

² COM (2021). 350final.https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0350& from=EN

Time period	Character of industrial policy	Ideologically dominant stream of economic thought
Mid 1980s to early 21 st century	Rejection of industrial policy and systematic limitation of it	Neoliberalism
From the crisis of 2008 until today	Return of industrial policy	New Keynesianism

The myopic oscillations of Mainstream Economics and the Marxist critique

Mainstream Economics exhibit myopic oscillations regarding economic policy in general and industrial policy in particular. They pass from eras of warm embracement to eras of bitter divorce. In theory, these oscillations prove the deep contradictions and the limited grasp of reality that mar Mainstream Economics. In practice, these oscillations follow the altering priorities of capitalist accumulation and its accompanying imperialist conflicts.

In contrast to the mainstream moving-sand landscape, Marxist Political Economy offers a robust understanding of economic policy in general and industrial policy in particular. The Marxist approach argues that industrial policy is necessary for the proper functioning of the capitalist system. Following its general understanding of the economic role of the state in the capitalist system, Marxist Political Economy emphasizes the role of the state as a 'collective capitalist'. That is, as a body that goes beyond the individual myopic interests of individual capitalists and ensures the long-term and overall interests of the system. In this context, it must ensure capitalist dominance but at the same time – when necessary – make reasonable concessions to the working class in order to ensure the orderly functioning of the system. Therefore, industrial policy – that is, state intervention in the production structure and international competition – mediates the conflict both between capital and labor and between different shares of capital. Of course, industrial policy can alleviate or even modernize the conflict between capital and labor, but it cannot abolish it, because the latter is a structural component of the capitalist system.

The need for industrial policy arises because the Marxist approach rejects the notion of the balanced functioning of the capitalist system and, instead, considers it as a dynamic state of affairs where phases of disequilibrium succeed phases of orderly functioning. This dialectic of balance and imbalance arises primarily from trends in the sphere of production. The 'collective capitalist' intervenes in this dynamic through industrial policy. The central issue of this intervention is the restructuring of *capital*. In its historical course, the capitalist system creates new branches of production and devalues old ones. Both the creation of new industries and the obsolescence of old ones do not simply happen spontaneously through the forces of capitalist competition. On the contrary, because as previously explained the latter is not perfect, that is why state intervention is needed to facilitate and smooth this process.

There are four main reasons for state intervention in the structure and functioning of the economy and competition.

The first reason derives from the operation of the TFPF law: falling profitability can lead to 'investment famine'. This lack of sufficient investment can prevent the creation of new industries (i.e. the restructuring of capital). The latter is usually necessary for the capitalist system to emerge from a structural crisis (i.e. a crisis requiring the radical change of the structure of the economy). Therefore, the state must act strategically and fill the gap left by private capital.

Another important reason is that the uncontrolled functioning of competition can lead to premature, excessive and/or socially unsustainable bankruptcies of businesses and industries. In other words, the spontaneous restructuring of capital by private enterprises may lead to premature or even greater than necessary closure of industries and enterprises. Also, the pace of this privately driven restructuring of capital may touch social limits of endurance and cause uncontrollable social explosions.

A third reason concerns competition with other capitalist economies. Especially in this case, a strategic perspective is needed that can see beyond the existing state of affairs. Private enterprises have a limited perspective and are unable to grasp the overall picture. Also, private capitals often refuse to shoulder the innovation costs that capital restructuring requires. Therefore, in this case too, the state must intervene and implement the necessary changes, while at the same time ‘socializing’ their costs. That is, it covers the necessary expenses from its tax and other revenues to which all social classes contribute. In this way it subsidizes individual capitals.

Finally, an additional reason is that the state must discipline and integrate the working class. It therefore applies state power to industries and enterprises where individual capital is unable to discipline or integrate the working class. Sometimes this intervention is based on discipline through repressive mechanisms and the institutional framework of the state. At other times it may make concessions that individual funds either do not see the feasibility of or refuse to bear the costs of. In the latter case it happens that the issue of innovation was mentioned above. The state covers the concessions to work expenses from its tax and other revenues to which all social classes contribute. In this way it subsidizes individual capitals.

Based on the above framework, the Marxist approach considers that industrial policy is not just a technical undertaking of choosing the best solution for the economy and competition. Rather, it is a political-economic process where social, political and economic factors interact. This interaction is based on class relations and conflicts and the associated position of the economy within the web of competition that pervades the global economy. In short, industrial policy is determined by class struggle and international rivalries.

In particular matters of industrial policy, the Marxist approach pioneered emphasizing the primary role of industry in structural transformation and the creation of economic wealth. Equally pioneering was its understanding of cross-industry interconnections in the economy. In this sense, it preceded the corresponding Structuralist and Kaldorian problematics. It also emphasizes that the primary role of industrial policy is intervention for the restructuring of capital (that is, intervention in the sectoral structure of the economy). Industrial policy is therefore above all selective. The horizontal industrial policy mainly plays a supporting role. Finally, the Marxist approach argues that the labour movement does not have to propose superior ‘technically’ industrial policies. On the contrary, it must support industrial policies that improve the position of labor and reduce its degree of exploitation.

In place of conclusions

Instead of a formal conclusion, I would like to summarize the arguments presented above in a way that I think would be dear to the late Aleksandr Buzgalin whose invaluable loss we commemorate today:

- Industrial policy concerns primarily the production process.
- The production process is essentially the labour process.

- The working class should exert its power on the economy in general and on industrial policy in particular.

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DOI: 10.37930/2782-6465-2024-3-1-34-40

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GLOBAL TRENDS OF INTEGRATION AND FRAGMENTATION¹

Abstract: Globalization as a mainstream narrative at the end of the 20th century has dramatically receded at the early decades of the 21st century. After the 2008 global crash and the Great Recession, followed by successive shocks (the Covid 19 pandemic and global economic shut-down, the escalation of international geopolitical tensions,) there is a reversal of official discourse. It is centered now more and more on “de-globalization”, its priorities and dangers. But both narratives in their mainstream and apologetic form are unable to interpret current world developments. Suffering from a fatal one-sidedness, they fail to grasp the dialectical interplay of contradictory forces driving simultaneously global trends of integration and fragmentation, embedded in the capital relation itself reaching its historical limits. A cognition-based production based on social cooperation and solidarity as it is emphasized by Noonomy research, has to overcome the barrier of the capital relation itself reorganizing society on genuine socialist bases.

Keywords: globalization, de-globalization, global crisis, noonomy

For citation: Matsas S.M. (2024). Global Trends of Integration and Fragmentation. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 34–40. DOI: 10.37930/2782-6465-2024-3-1-34-40

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全球一体化和碎片化趋势

摘要:全球化作为二十世纪末的主导观念,在二十一世纪的头几十年里急剧衰退。2008年世界经济崩溃和大衰退之后,各种冲击(新冠肺炎大流行、全球经济衰退、国际地缘政治紧张局势升级)接踵而至,舆论主题开始发生转变。现在,舆论越来越关注“去全球化”及其优先地位和风险性。然而,无论是全球化还是“去全球化”,它们的基本思想和扩展观点都无法解释当前的世界事件。其自身严重的片面性,使它们无法把握各种对立力量之间相互作用的辩证关系,这些力量决定了全球一体化趋势的同时,也助长了全球碎片化趋势,这些趋势蕴含在已达到历史极限的资本关系中。正如研究智慧经济的著述所强调的那样,以知识为基础并受社会合作和团结影响的生产必须克服资本关系的障碍,而资本关系则会自行以真正社会主义为基础改造社会。

关键词:全球化、去全球化、全球危机、智慧经济学。

¹ The paper is based on the report at the 36th session of the S.Y. Witte Institute for New Industrial Development (INID) International Theoretical Seminar "Global Socio-Economic and Geopolitical Transformations: Theory and Practices" (5 April 2024, Saint Petersburg).

引用注释:马萨斯·萨瓦斯M.(2024)全球一体化和碎片化趋势 //智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 34-40. DOI: 10.37930/2782-6465-2024-3-1-34-40

Introduction

Globalization and/or de-globalization?

The world historical scene has been dramatically changed and it continues changing in an accelerated speed, through successive global shocks, spreading generalized confusion.

At the last decades of the 20th century, during the hot years of neoliberalism and dominance of globalized finance capital, capitalist globalization was presented distorted and fetishized in the dominant mainstream narrative. It was combined, particularly in the 1990s, after the disintegration of the USSR with the “end of history” myth and ended with this illusory “end”.

Already at early 21st century, myths and well-established beliefs were shattered. The crucial turning point of recent history, the real *Zeitenwende* happened not in 2022 but in 2008: it was the eruption of the global capitalist crisis with the Global Financial Crash and the Long Depression. The still unresolved world crisis, with all its ups and down, is spiraling through successive dramatic turns and brutal shocks such as the Covid 19 pandemic and shutdown, the new dangers of stagflation, and, above all, the worldwide escalation of geopolitical tensions between an aggressive US-led “collective West” and its targets, China and Russia declared as “primary strategic rivals”.

The obvious failure of neoliberalism in 2008, after the failure of Keynesianism in the 1970s, left a strategic vacuum for capitalism lacking an alternative economic strategy for an exit from the protracted global crisis.

Globalization started to be more or less replaced in public discourse by formally opposite narratives of *de-globalization*, of “decoupling or “de-risking” of “home-shoring”, or “friend-shoring”, a turn towards economic nationalism of various kinds, which soon also finds itself confronted with an impasse. [Michael-Matsas S., 2022; 2022 passim].

Conflicting assessments by leaders of US and global capital are revealing their strategic impasse in front of the simultaneous presence of conflicting global trends of economic integration and fragmentation. Larry Fink, the CEO of BlackRock, the world’s largest asset management firm with \$10 trillion in assets, in 2022, made a statement declaring “*an end to the globalization we have experienced over the last three decades*” [Foroohar R., 2022; Bukat-Lindel S., 2022; Tett G., 2022; Tooze, A.; Armstrong R., 2022]. From the other side, Jamie Dimon, chair and CEO of JP Morgan Chase, the biggest private US bank, doesn’t foresee possible a decoupling between the West and China, considering that it will lead to a disaster not only for both two biggest economies of the world but for the world economy as a whole. [Dimon J.; 2023]

Nouriel Roubini, known as one of the rare economists who predicted, in his way, the 2008 Crash, treats such an “end of globalization” as one of the ten *Megathreats* that “*imperil our future*” [Roubini N., 2022, pp. 144-166].

Globalization appears simultaneously as ending and endless.

Fragmentation collides with the reality of an already established integration of international social economic life, the already advanced interconnectedness of world social economic processes, which, at the same time, in its present historical social form generates further fragmentation.

This ‘double bind’ is the unsolved Sphinx riddle of the present. The wide spread confusion is compounded. It reigns now, in the most brutal manner in a post-post-Cold War dangerous world,

what the philosopher Alain Badiou had called “*a generalized disorientation of the world*” (Badiou A., 2022 passim).

“Globalization” and “de-globalization” in their rigid mainstream ideological-apologetic form, both suffer from a fatal one-sidedness, they are unable to grasp in their unity the contradictory aspects and trends of the real world, the complexities of the uneven and combined development of world historical process.

I. Global North and Global South

“Globalization” as neoliberal dogma, or “hyper-globalization” [Subramanian A., Kessler M., 2013 passim] in the 1990s parlance, did not limit itself in the recognition of the advanced interconnectedness of world economy, of the world character of modern productive forces and of and international division of labor. It preached the end of the national state and of its borders, and consequently of national antagonistic interests. It falsely was claiming to spread “democracy” and a “rising equality” between “developed” and “developing” countries, renamed now “emerging markets”.

In reality, the inequality divides between the metropolitan capitalist centers located in the Global North and the semi-peripheral and peripheral countries in the Global South has grown under the post-1980 phase of capitalist globalization. The world capital expansion of the imperialist Global North plundering the resources and over-exploiting the working populations in the Global South had a devastating impact in all their living conditions with famines, environmental destruction, wars, dictatorships, genocides (Rwanda 1994!) producing nonstop, unprecedented migratory waves of desperate people.

As mainstream economists had to admit there were “*serpents in the paradise of hypeglobalization*” [Subramanian A., Kessler M., 2013, p. 38] In 2002, the Keynesian Joseph Stiglitz had to give to his well-known book the title *Globalization and its discontents* [Stiglitz J., 2002]. Already at the end of the 1990s and early 21st century, a powerful global social movement against the ravages of capital globalization emerged with the Seattle 1999 anti-IMF mass revolt continued with the Genoa events in 2001 and later the Porto Alegre World Social Forum gatherings.

Against the myths, many empirical studies have exposed the globally growing inequality. A 2021 Oxfam report found that collectively, the 10 richest men in the world owned more than the combined wealth of the bottom 3.1 billion people, almost half of the entire world population. Their combined wealth doubled during the pandemic [Nabil A., et al, 2022 passim].

The rare exception of lowering mass poverty and social inequality during the last three decades was China. It took place not thanks to a West-led capital globalization but on a totally different political economy basis: an opening to the world market under the Chinese state economy sector control following the Chinese Communist Party political directions.

In every important turn of the post-2008 world crisis spiral, the divide between Global North and Global South manifests itself as a widening, ever deepening, unbridgeable gap. For instance, during and after the Covid pandemic shock, vaccination programs revealed in most dramatic terms the growing structural inequality between Global North and Global South, fracturing inhumanly humanity today. The *World Economic Outlook and Global Financial Stability Report* by the IMF, in autumn 2021 reported that “*as of late September 2021, 58 per cent of the population of high-income countries was fully vaccinated, against 36 per cent in emerging countries and a miserable 4 per cent in low-income countries*” belonging to the Global South [IMF, 2021; Wolf M., 2021].

The World Food Program's Report on what happened in the first year of the pandemic is alarming: "A record 270 million people are estimated to be acutely food insecure or at high risk in 2021- a 74 per cent jump from 2020" [Tooze A., 2021].

To repeat the title of the article in Oxfam International, *inequality kills*, indeed.

Despite all claims, that "globalization" mark "a new era' or "a new post-imperialist stage of capitalist development", the persisting divide between Global North and Global South demonstrates the domination and parasitism of the first over the later, the *continuing separation between oppressors and oppressed nations*, confirming Lenin's classical theory of imperialism as an epoch of declining capitalism.

Discourses on "de-globalization", from the other side, functions either as a call for predatory economic nationalism of a "MAGA" ("Make America Great Again") or an "America First" type or as the fallacy of an impossible national autarky for the weakest and poorest. In any case, the Global South will pay the biggest price of the common disaster. Its political reactions could be expected.

It is not accidental that the representatives of the Global South, where the vast majority of humanity lives, have opposed the sanctions policies and the weaponization of international finance by the US and the collective West against Russia. It is quite clear also why Global South countries have opposed Western driven anti-Chinese hysteria or why South Africa brought at the International Court of Justice the genocidal war in Gaza. These actions are not simply political maneuvers but expressions of a world historical divide.

II . Global North: trends of integration and of fragmentation

1. America

US capitalism is the center of the global capitalist system, and the center of its structural-systemic crisis and historical decline.

For historical and structural reasons that have determined the US social formation, American capitalism, in our imperialist epoch, particularly under the impact of two world wars, the Great Depression and later the "Cold War" had to break from isolationism, and integrate world affairs playing a leading role. Its inner equilibrium had necessarily to be based on a world equilibrium, exercising world hegemony. It was raised to this leading position in the last century replacing Britain and Europe into a subordinate, although necessary but only supportive role to US interests.

The post World War II period based on the Bretton Woods settlement and the Cold War was the "classical", always turbulent period of this US world hegemony. The collapse of the international equilibrium based on the Bretton Woods system in early 1970s, and the emergence of a world crisis combined with the international political maelstrom of the same period presented new challenges. The post-1980 neoliberal campaign and the frenzy of finance capital globalization were an attempt to overcome the crisis. Its highest point was the disintegration of the Soviet Union and the collapse of the Eastern European regimes. But integration into a Western led global capitalism under US hegemony proved to be both an illusion and a tragedy, leading to more political and economic fragmentation internationally, a worst global crisis and now to dangers bringing humanity at the brink of the abyss.

The post-1980 neoliberal globalization and the Washington Consensus did not save a crisis ridden international US rules-based order. On the contrary, the *decline* of the hegemonic US capitalism as the highest historical point of the global capitalist development, became manifest.

Even during the so-called “hyper-globalization” 1990s, its sustainability by the US and West’s ability was problematic. In 1998, D. Rodrik [Rodrik D., 1998, pp. 997-1032; Subramanian A., et al, 2013, p. 21] had warned that sustaining “*openness requires a domestic social consensus in its favor, which in turn requires mechanisms of social insurance to cushion domestic actors against globalization-induced shocks*”. But, on the eve of the 2008 Crash, according to Larry Summers “*globalization both increases the need for social insurance and undermines the government’s ability to provide it*” [Summers L., 2008].

The wages of the US workers were stagnated for three decades, social mobility declined and inequality has been sharply rising. Larry Katz of Harvard University captured the structural malaise in US and the breaking down of social consensus with the following metaphor:

“Think of the American economy as a large apartment block. A century ago-even 30 years ago- it was the object of envy. But in the last generation its character changed. The penthouses at the top keep getting larger and larger. The apartments in the middle are feeling more and more squeezed, and the basement has flooded. To round it off, the elevator is no longer working. That broken elevator is what gets people down the most” [quoted by Subramanian A., et al, p. 21]

The metaphor quite accurately describes much more than the Trump phenomenon (including the possibility of his return in the Presidential Elections of November 2024). It captures the internal disequilibrium and political dysfunction of the US, the disruption and absence of an international equilibrium to base itself upon, its decline, and consequently its imperialist drive to re-impose its global hegemony by all means against, first of all, Russia and China.

2. Europe

Europe is the space where the global trends of integration and fragmentation are manifested most sharply.

The attempt of the European Union to integrate its economy around the dominant German-French axis, as a mega-regionalization with a common euro-currency occupying a strategic base for a global hegemonic role has failed.

Today its economic weight, productivity and competition is squeezed between the two biggest economies in the world, America and China. It suffers more devastating blows in every new shock of the world crisis.

Its integration to the US financial system led, after the 2008 Crash, the euro-zone crisis, from which has never really recovered.

The euro proved unable to replace the US dollar as the main world reserve currency.

A capital and banking union are still lacking, and they have no chance to be achieved.

With the Brexit, the EU lost the City, a strategic center of global finance capital.

The EU economy never really recovered after the Covid pandemic as the European economy still stagnates after the contraction of the world economy of the global shutdown, which was much greater than that of 2008-09, despite emergency “heterodox” measures to avoid. collapse and restore sustainability.

The expansion of the European Union to integrate Central/Eastern Europe and the Balkans, was accompanied, with growing trends of fragmentation, starting with the brutal disintegration of former Yugoslavia. The region is subjugated in a subordinate quasi colonial status. Social fracturing and a deep economic divide are growing between West and East.

At the same time, especially after the euro-zone crisis, there is a growing divide also between the richer, “frugal” North and the poorer South of the EU.

The German-French axis itself of the EU integration process manifests serious fractures as the German economy, the industrial heart and motor force of the EU economy plunges into recession and becomes again “the great patient of Europe”.

The tensions and rupture between the European part of Global North and its former colonial Global South, particularly in Africa and the Middle East – and the huge migratory waves from the later to the former transformed into a ‘Fortress Europe”, reach an explosive moment.

Above all, the heart of the European Continent has become the tragic theater of the greatest global geopolitical confrontation from the end of World War II,

The social political consequences of the intertwining of all these contradictory global trends over the peoples of Europe are immense, producing polarization, tensions, growing conflicts, political instability [Michael-Matsas, 2023, p.3]

Western Europe is the weakest “*mega-link*” in the chain of the metropolitan centers of Global North.

Conclusions

In this complex volcanic international landscape, to outline possible paths of an exit from the crisis and find an alternative development, it is necessary to grasp the dialectical interplay of contradictory forces driving simultaneously global trends of integration and fragmentation. Both they are embedded in the capital relation itself reaching now its historical limits.

The unifying, universalizing force is generated by capital itself and at the same time it collides with capital’s inner limits, discovered by Karl Marx: “...*the universality for which capital ceaselessly strives*”, Marx writes in the *Grundrisse*, “*comes up against barriers in capital’s own nature, barriers which at a certain stage of its development will allow it to to be recognized as being itself the greater barrier in the way of this tendency, and will therefore drive towards its transcendence through itself.*” [Marx K., 1986, p. 337]

The international interconnectedness generated by capital is not a uniform, homogeneous, static abstract universality, in a “*progression through a homogeneous and empty time*”, as Walter Benjamin had aptly pointed out in his profound *Theses on the Concept of History* [Benjamin W., 1940]. It combines, in an integral but contradictory unity, in a world division of labor, various uneven levels and speeds of development, a multiplicity of historical temporalities.

The **transitional** nature of our epoch over-determines this multiplicity. The fact that the capital relation has become “the greater barrier” to the universalizing tendency and “therefore drives towards the transcendence though itself” are demonstrated both by the high development of the material-technological conditions. The Internet revolution in the 1990s produced, as Michael Roberts remarks,

“... *a stock market boom, bubble and bust but it did little to boost growth in the overall productivity of labor in the 200s onwards [...] Robert Solow, commented at the time, “you can see the **computer age everywhere but in the productivity statistics. Productivity growth has been slowing globally as a trend throughout the first two decades of this century**” [2024].*

The potentialities revealed by technological progress are real and greatly transformative. A cognition- based production based on social cooperation and solidarity as it is emphasized by Noonomy research, initiated by Sergey Bodrunov [Bodrunov S., 2022, passim; Bodrunov S., Desai R., Freeman A., 2022 passim], has to overcome the barrier of the capital relation itself reorganizing society according to social needs and not profit, in other words, **on genuine socialist bases**.

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DOI: 10.37930/2782-6465-2024-3-1-41-51

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POTENCIES AND REALITIES: DIALECTICS IN INDUSTRIAL PRIORITIES

Abstract: The factors determining the personnel component of industrial policy in current conditions of economic turbulence and the formation of a post-economic society are considered. The guidelines for the balanced support of industry from the field of education, the relationship between knowledge and practice in real production, as well as their dialectical mutual influence are discussed. The assessment data by the industrial enterprises of St. Petersburg of the level of training of graduates of St. Petersburg higher and secondary vocational educational institutions, changes in such an assessment in recent years are presented. As a result of the acceleration of scientific and technological progress, three foreseeable directions for industrial production development are proposed.

Keywords: vocational education, industrial policy, production, personnel, knowledge and skills, generic skills, Achilles and the Tortoise.

For citation: Gorin E.A. (2024). Potencies and Realities: Dialectics in Industrial Priorities. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 41–51. DOI: 10.37930/2782-6465-2024-3-1-41-51

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工业优先发展条件下潜力与现实的辩证关系

摘要: 文章探讨了在后经济社会正在形成且经济动荡这样的现代条件下产业政策中人力资源问题的决定因素。讨论了教育领域为工业提供对应服务的指导原则, 阐述了实际生产中知识与实践之间的辩证的相互影响关系。文中提供了圣彼得堡市工业企业对当地高等和中等职业教育机构毕业生素质情况的评估数据, 并介绍了近年来这项评估的变化。作者提出了在科技进步加速条件下工业发展的三个基本预期方向。

关键词: 职业教育、产业政策、生产、劳动集体、知识和技能、通用技能、阿基里斯与乌龟。

引用注释: 戈林 E. A. (2024) 工业优先发展条件下潜力与现实的辩证关系//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 41–51. DOI: 10.37930/2782-6465-2024-3-1-41-51

*The swift-footed Achilles will never catch up with the leisurely tortoise
if the tortoise is ahead of Achilles at the beginning of his movement
Ancient Greek philosopher Zeno of Elea (5th century BC)*

Paradigm change and industrial priorities

The national social paradigm – as a general ideological model, as a system of concepts and values accepted by the state and society – actually determines the structure of economic relations, and then forms industrial priorities, the principles of functioning of the “science-education-production” system.

Existing experience demonstrates significant conservatism of production structures; organizational innovations usually follow technological innovations, which ultimately affects the entire life of society. Let us recall the somewhat forgotten thesis today that production relations and productive forces together form a mode of production, on the basis of which the political, ideological and cultural superstructures are formed [Tumashev, Kotenkova, Tumasheva, 2011].

Russian reality in this regard demonstrates unique revolutionary transformations, often having significant negative consequences. A change in the national social paradigm inevitably provokes a serious deformation of the principles on the basis of which state institutions are built and social relations are formed, and, among other things, industrial production becomes a victim. Then the opposite socio-economic action is realized, and another dialectical pattern manifests itself [Ligostaev, 2009].

Thus, considerably rational administrative-planning system, built by the end of the last century, has been abruptly replaced by spontaneous market mechanisms since the 90s, and over the past two decades, government regulation instruments have been increasingly introduced into industrial management.

The permanent transformation of economic structures does not pose any danger; it is a natural result of a new stage of industrial development [Bodrunov, Glaziev, 2023, pp. 92-145] and reflects general global economic trends [Lane, 2022, pp. 113-133]. The only thing is that avalanche-like transformations in Russian reality, supplemented by active foreign pressure, have occurred and are occurring very abruptly and revolutionarily and therefore have a painful impact on the production base and the social relations associated with it.

The rupture in relations with Western countries that had been developing over the past three decades after February 2022 once again significantly changed the picture of industrial cooperation, making an end to the period of relatively benevolent globalization, and, as a result, led to a radical restructuring of the national economic, production and social space.

Forced to react to global transformations and a clear demonstration of the fact that the economy cannot exist “autonomously” from politics, and there is no such thing as a truly existing “free market” [Lane, 2022, p. 71], we have witnessed another change in the social paradigm and guidelines of domestic industrial policy [Gorin, Imzalieva, 2023]. As a result, industrial priorities are changing, including in relations with other public institutions, with the education sector, and with the scientific community.

Social metamorphoses and guidelines for industry

In the process of civilizational development the attitude towards a Human changes, and his status as the main driving force of this development increases. The quality of human life is the

goal of the economy, while people are the main resource of the economy. Thinking itself turns into a real productive force, on the basis of which intellectual capital is formed, acquiring the role of a basic factor in the innovation process, and then – an instrument of influence on the production process and transformation of industry as such [Gorin et al., 2013].

It is impossible to understand the essence of a human being and his place in society without establishing a hierarchy of values that form morality and ethics, and ultimately social meaning and stability¹. From a philosophical point of view, value is abstract, but unlike being, it has a high individual and social significance. This determines the place of values as “regulatory ideas” and ideals of the future, which should be oriented towards the improvement of a Man [Kant, 2015, pp. 394-397].

General philosophical considerations are not so far from practical life. The blurring of moral guidelines and reasonable goal setting has led to the fact that productive and creative activity has lost its relevance in the public mind. As a result, engineering and blue-collar professions have lost their prestige and importance as a mass educational trajectory for Russian youth. The situation, however, is changing, and the demand (so poorly secured in recent years) for qualified scientific and industrial personnel has increased on the part of the labor market.²

In its time, industrialization led to the formation of an army of semi-skilled workers who could be trained in a short time to perform simple machine production operations [Patyrbaeva, 2012]. In modern reality, the key subject of the new industrial society is becoming a representative of the professional engineering class, and the training of workers for industry acquires a corresponding orientation.

That is why modern industrial policy objectively focuses on the integration of the scientific and educational sphere with the sphere of material production in a combination of mutual complements and incentives, the creation of conditions and a combination of interests, the growth of intellectual and organizational resources. The basis for the transition to an innovative type of development is the people themselves and the nature of their internal social motivation in the process of production activities.

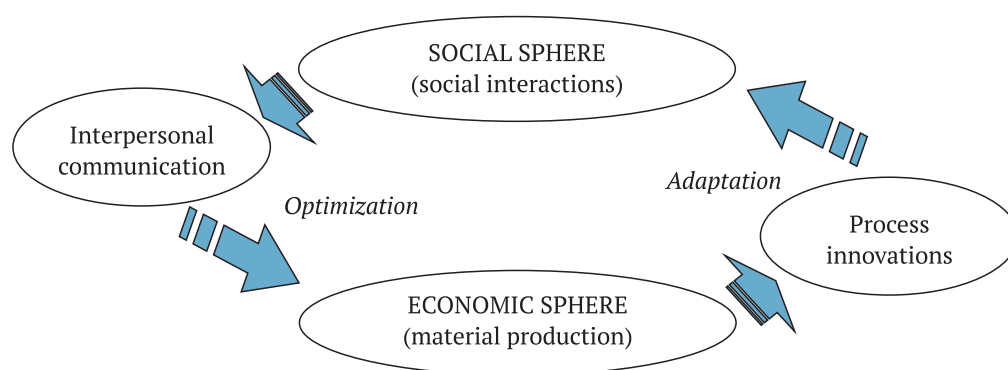


Figure 1. Dialectical connection of socio-economic relations

Figure 1 shows the dialectical connection between social relations and the sphere of material production. The practical results of scientific and technological progress are realized through

¹ The dual unity of rational-theoretical and value-worldview components of philosophy. URL: https://spravochnik.ru/filosofiya/dvuedinstvo_racionalno-teoreticheskikh_i_cennostno-mirovozzrencheskih_komponentov_filosofii/?ysclid=ismvv0qeis633220625 (Access date: 12.02.2024).

² The Main Problem of Russian Industry Is the Lack of Personnel. URL: <https://www.snta.ru/press-center/glavnaya-problema-promyshlennosti-rossii-nekhvatka-kadrov/?ysclid=lto0eg6qd119443540> (Access date : 11.03.2024).

new information and technological capabilities into the expanded potential of social relations, which, for their part, through social communication, generate new knowledge and bring it into the products of material production.

As a consequence for industry, a new type of participant in production activity is becoming increasingly in demand – a “super-industrial subject”, who does not occupy a fixed place in the collective hierarchy and is not inclined to perform routine functions, although remains highly socialized and easily adapts to changing tasks [Toffler, 2003, p. 163].

The need for creative work, characteristic of a modern human being, is significantly increasing, since precisely this kind of work is self-motivating and becomes a need. Only interest can captivate a representative of the younger generation, set up creative motivation for him and distract him from the numerous negative temptations of the surrounding world. Cultivating positive aspirations and an appropriate orientation among young people is possible based on the formation of a social aura and the attitude towards such a task of the entire “chain” of public and educational organizations, starting from school [Gorin, Raskovalov, 2014].

Education and production: Achilles catches up with the Tortoise

In the relationship of socio-economic relations shown in Figure 1, we will try to determine the relationship between production and education from the point of view of their role in practical application of scientific knowledge. By the way, the role of knowledge itself in this relationship is contained in the somewhat paraphrased aporia of the ancient Greek philosopher Zeno of Elea, which in its original version states that *Achilles will never catch up with the tortoise*. In our case, here you can see a very moralizing philosophical meaning – competition for the minds and abilities of the younger generation coming into real material production. And not only this! The role of this young generation in scientific and technological development and material production, reflecting in practice the level of scientific knowledge as well.

The personification of the tortoise can most likely be material production with its complex infrastructure and, of course, personnel with accumulated knowledge and skills, since this is a relatively expensive and inertial object in terms of all resources, slowly moving along the path of technical progress. Achilles is the new personnel for this production, proactive and interested, capable of quickly receiving and accumulating advanced knowledge. There is one nuance: every future employee begins his journey with zero knowledge and skills, at least in his future specific production application. Therefore, let us recall once again what Zeno asserted: *the swift-footed Achilles, no matter how hard he tries, will never catch up with a leisurely tortoise if at the beginning of the movement the tortoise is in front of Achilles*.

As is commonly known, the conflict proposed by Zeno is relatively easily resolved if we clarify the starting positions of the participants of this race, which we have transferred to the intellectual plane of a practical situation.

If at each moment of time a new start is made, then the race begins from the starting position, and while Achilles makes the first movement, the tortoise will crawl further away from him and remain ahead. And so over and over again, and as a result, Achilles really cannot catch up with the tortoise. As soon as we move away from local isolated situations and rely on the continuity of the process, then, obviously, Achilles' high speed ensures his victory over the tortoise¹.

¹ Explanation of Zeno's Aporia “Achilles and the Tortoise”. URL: https://dzen.ru/a/Y75P-uLvYIB_1gll (Access date: 28.02.2024).

It is curious that, at first glance, our philosophical analogy in the real relationship “new personnel – existing production” is closer to the situation of Achilles who is constantly lagging behind. Indeed, each future employee begins with zero (or, in any case, incomplete, especially for a new production) level of knowledge and skills, which means that with each new student a new countdown begins in the movement towards knowledge and skills already applied to his new place of work. In practice, this is exactly the picture that is usually observed. As a result, production sets the pace for the accumulation and practical implementation of technical potential, which the education system monitors and prepares new workers for these production needs on the basis of accumulated knowledge. This is what Figure 1 demonstrates.

The situation changes dramatically if we take into account modern realities – the hyperactive role of science, when “knowledge plays an increasingly important role, turning into a driver of knowledge-intensive production.” In fact, knowledge, becoming the main production resource and direct productive force, largely replaces the means of production in the new industry [Bodrunov, 2018, p. 177].

Then, in the process of acquiring knowledge by a future employee, yet a student, the dialectical connection of education, science and production “works”. As shown in Figure 2, in preparation for the upcoming work activity, the student goes through the well-known path “from living contemplation... to practice” [Lenin, 1969, pp. 152-153]. And this is a process of education, which is not only completed in production, but is constantly accompanied by scientific knowledge. It is the unification of science and production, when an enterprise (each, to one degree or another, innovative), in fact, not only produces a product, but also generates scientific knowledge and makes it possible to reduce the gap in the “education-production” system. Then: *Achilles and the tortoise run in lock step.*

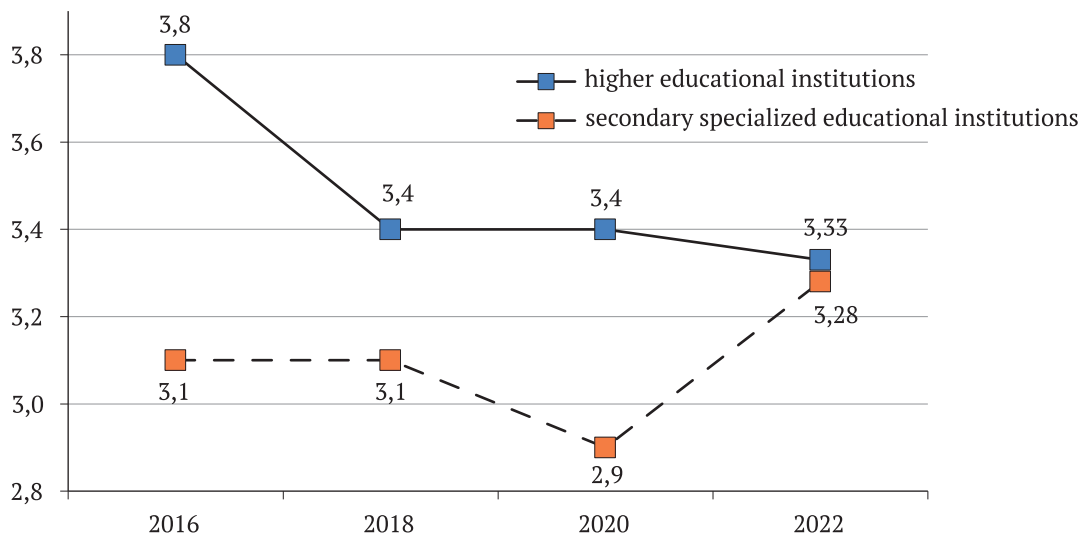


Figure 2. The dialectical connection between education, science and production in the process of acquiring knowledge by the younger generation

In such a setting, can Achilles outrun the tortoise?

Apparently, he can, since modern science makes it possible, within the framework of the educational process, to prepare specialists whose knowledge is ahead of the level of even the most

advanced production. Then a contradiction will arise: such new employees “overflowing with potentialities” will come to existing production, which is unlikely to be able to quickly absorb their knowledge, which has not yet been absorbed by the industry. This means that the practical application of innovations and the next step along the path of scientific and technical progress will take time. Here is the result: *Achilles will be slowed down, Achilles and the tortoise will run in lock step.*

A practical example of this situation in its successful form is the activity of national research universities, since the purpose of their creation was to form teams of practical specialists whose knowledge and skills are ahead of the level achieved by existing production and are capable of introducing new knowledge and becoming locomotives of industrial development. And even more, making a workable prototype or even a practically working product. It is then that the following scenario shall be realized: *Achilles will drag the tortoise!*

Education and production: dialectical unity

Next, we shall present some results of practical assessment monitoring made by the employers, of training quality of the graduates of higher and secondary vocational educational institutions who start working in St. Petersburg industry [Gorin, 2016; Kuznetsov, Gorin, Imzalieva, 2023], on a five-point scale.

Expectations and realities combined with the scope of potential and specific actions of all participants in the personnel training process, the system of motivation in the public mind and in the youth environment – all this determines the specifics of forming the structure of production personnel and selecting new employees for specific enterprises, dedicated groups of economic entities subjects and of the economy as a whole.

Multidirectionality of the presented estimates and their alteration over time depending on the changing economic situation should be taken into consideration. On the one hand, this is the attractiveness and quality of educational training, youth (public) preferences, and on the other hand, the requirements of employers and their expectations. All factors undergo changes over time, and in our “dynamic century” they are changing quite actively. If we add to this the significantly changing order of interaction between “school – college – university – enterprise” and the forms of state (public) participation in this process, then the relationships are becoming more and more complicated.

In our case, let us turn only to assessing the level of universal competencies of graduates, that is, characteristics associated with general knowledge, value-semantic attitudes and personal qualities. It is universal competencies that allow a person to realize creative potential and adapt to changing conditions, and help solve problems regardless of their usual field of activity. This also implies a very important quality – willingness to take up responsibility and demonstrate leadership abilities.

Figure 3 shows an assessment of the level of universal competencies and the dynamics of such assessment regarding the graduates of higher and secondary specialized educational institutions hired in 2016–2022 by enterprises and organizations that are members of the Union of Industrialists and Entrepreneurs of St. Petersburg. University graduates do not yet meet employers’ expectations, although the deterioration of the situation has clearly slowed down, despite the increase in labor market requirements for holders of higher education diplomas in recent years.

If at the beginning of the observation period college graduates showed almost no noticeable dynamics, then in recent years, not without reason, we expect positive changes.

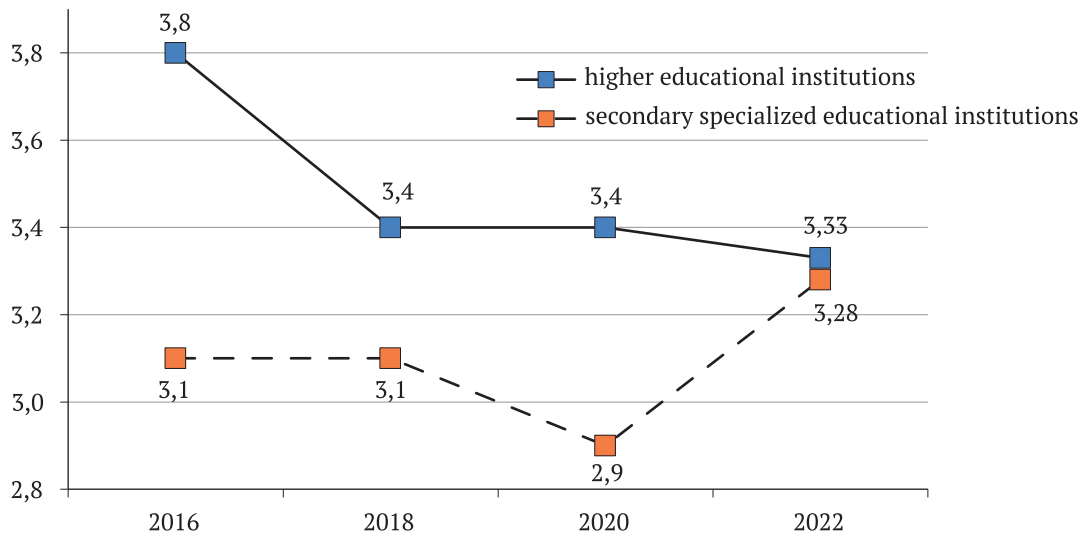


Figure 3. Assessment of the level of universal competencies of graduates of higher and secondary specialized educational institutions hired in 2016–2022 by enterprises and organizations – members of the Union of Industrialists and Entrepreneurs of St. Petersburg

Similar data are presented for various production groups: large industrial enterprises (Fig. 4); medium and small industrial enterprises (Fig. 5); scientific and technological organizations (Fig. 6).

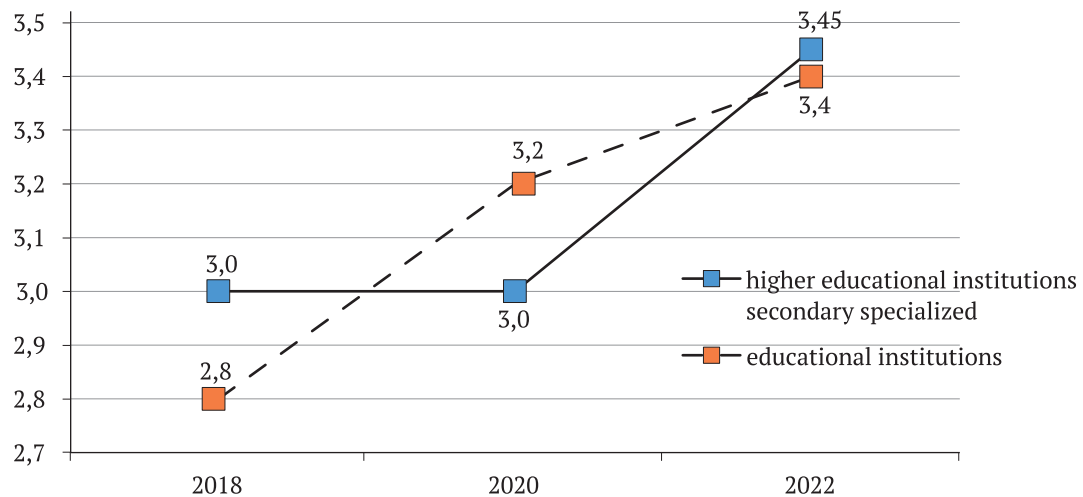


Figure 4. Assessment of the level of universal competencies among graduates of higher and secondary specialized educational institutions hired in 2018–2022 at large St. Petersburg industrial enterprises

For all economic entities, quality level of graduates coming to large industrial enterprises both from colleges and universities tends to increase based on this parameter. At the same time, heads of small and medium-sized industrial enterprises, scientific and design organizations show a noticeable decline in their assessments of university graduates. Apparently, the operating conditions of this sector of the economy have become noticeably more complicated, the problems faced by managers have increased, and the exigencies for the new employees have become stricter.

In addition, it is worth considering that the mutual work of educational institutions and human resources services of large industry have become much better organized.

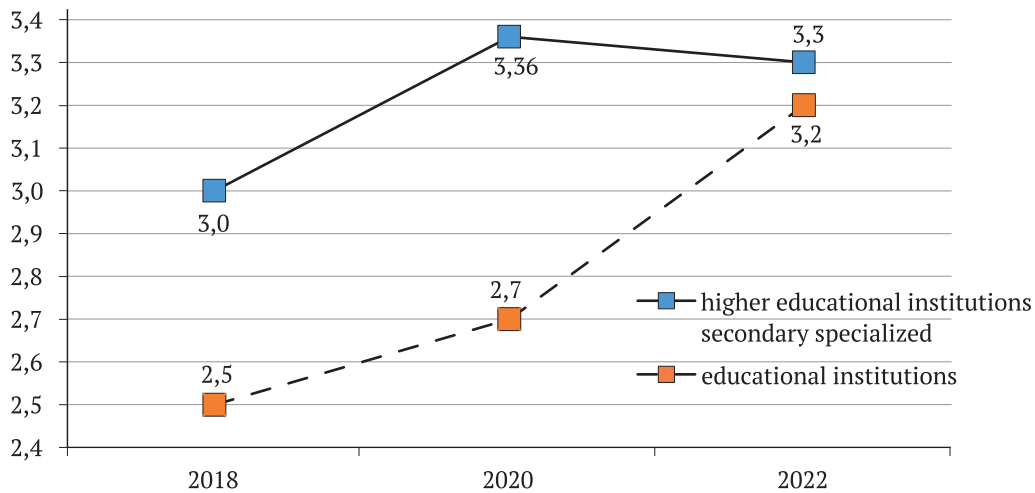


Figure 5. Assessment of the level of universal competencies among graduates of higher and secondary specialized educational institutions hired in 2018–2022 at medium and small St. Petersburg industrial enterprises

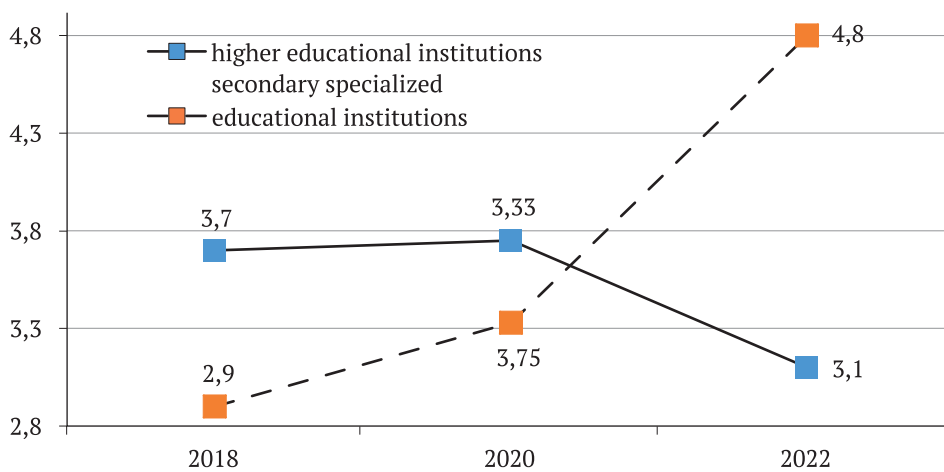


Figure 6. Assessment of the level of universal competencies among graduates of higher and secondary specialized educational institutions hired in 2018–2022 in St. Petersburg scientific and technological organizations

Basis for a new social paradigm

Not only the system of higher engineering education today is capable of becoming a serious driver of technical progress, outstripping the production of even an innovative industrial enterprise. Just look at the list of competencies for which the All-Russian Professional Skills Championship is held. The competition is based on already existing labor functions and real types of production activities that are in demand in the domestic labor market, confirmed by employers and within

the framework of ongoing areas of secondary (!) vocational education¹. Here are just a few of the 45 such competencies: web technologies, information security, corporate protection against internal threats to information security, neural networks and big data, space systems engineering, flying robotics, mechatronics, geospatial digital engineering, laser technologies, etc.

In this case, the growing interest of young people in studying at reputable colleges is understandable. Competition for admission in 2023 to receive secondary vocational education at the Zh. Ya. Kotin Academy of Mechanical Engineering even for traditional specialties was as follows: “Operator of computer-controlled machines” – 7.8 people/place (after 9th grade); «Foreman of instrumentation and automation” – 5.76 people/place; “Additive technologies” – 5.42 people/place (after 9th grade); “Mechanical Engineering Technology” – 5.28 people/place (after 11th grade)².

The atmosphere in engineering training is changing even more. The experts note the pragmatism of today’s youth and focus on results. The prestige of the diploma and its marketability in the labor market have begun to play a major role; the students are taking a more responsible approach to the process of acquiring professional knowledge from the first years of study, gravitate toward research work, and are able to quickly find the necessary information and grasp its essence³.

The federal project “Advanced Engineering Schools” is aimed at integrating science and education with production to train highly qualified engineers of the new generation, capable of providing the country not only with technological sovereignty, but also with scientific and industrial advance⁴. Each of the leading engineering schools, and 50 Russian universities have already joined the project, is working in one or more relevant scientific and technological areas that correspond to the profile and needs of key partner companies and are designated as priorities in the national «Strategies for scientific and technological development of the Russian Federation»⁵. The integration of science, education and production in such Schools is complemented by internships and practical training for students at enterprises, the involvement of company employees in teaching and the improvement of the practical competencies of university professors.

Production: dialectics in differentiation

After a very optimistic picture that determines the formation of an effective team of qualified and creative employees, whose knowledge and skills have been developed in the “school-college-university” system, the connection of science allows us to look beyond the industrial production that actually exists today. The question arises about the production itself: will it become a tortoise, dragged along by the swift-footed Achilles on a high-tech leash?

Indeed, scientific and technological progress sets its priorities, potentials and desires are superimposed onto possibilities and practical feasibility. But dialectical diversity [Tsyrendorzheva,

¹ Competencies. All-Russian Championship Movement in Professional Skills. URL: <https://pro.firpo.ru/kompetent-si/?ysclid=lt6vos8k8y758623753> (Access date: 28.02.2024).

² Average Score of Applicants’ Certificates. Nevsky Machine Builder. 2023 (October). Vol. 13. No. 2. P. 4. URL: <https://academykotin.ru/file/news/np/N%20%20%2813%29%20октябрь%202023%20r.pdf> (Access date: 11.03.2024).

³ Rumyantseva A. Professors of Russian Universities Talk About How Students Have Changed Over Ten Years . Jan. 25th 2024. URL: <https://russian.rt.com/russia/news/1262908-studenty-izmeneniya-vuzy> (Access date: 25.01.2024).

⁴ Advanced Engineering Schools: What Is This Project and Who Is Involved in It . Feb 2 2024. URL: <https://skillbox.ru/media/education/peredovye-inzhenernye-shkoly-chto-eto-za-proekt-i-kto-v-nyem-uchastvuet/?ysclid=lt75kgywt331557305> (Access date: 28.02.2024).

⁵ Decree of the President of the Russian Federation of February 28, 2024 No. 145 “On the Strategy for Scientific and Technological Development of the Russian Federation.” URL: <https://www.garant.ru/products/ipo/prime/doc/408518353> (Access date: 28.02.2024)/

2012] has not been canceled! Let us consider that "... in the evolution of society, culture and personality, the breadth of the nonlinear spectrum is incomparably greater than in the development of natural systems – greater precisely because the choice of movement trajectories is determined by the free goal-setting of individual and group subjects, reaching special strength with the entry of a story of an individual into the arena" [Kagan, 2002, p. 47].

Apparently, modern industrial production will be implemented in three consistent and related, but very different and independent directions, such as: multi-batch automated, small-batch innovative and individual creative direction.

The criteria for their difference are quite obvious, and they can be characterized by formal characteristics by: the number of employees; means of production used (areas); shares in total production or GDP; efficiency (profitability, contribution to technological development or to the functioning of society). Finally, a factor that is difficult to quantify is social significance.

Industrial production, as a socially important and dialectically developing complex, is increasingly "immersed" into scientific and technological progress, maintaining the possibility and necessity of differentiation, while remaining in the dialectical unity of diverse social needs.

Conclusion

To sum up the attempt to understand the relationship "science – education – production", it should be noted that modern requirements inevitably "paint" the image of an employee joining an enterprise team as a specialist with a broad outlook, deep knowledge and professional skills, possessing communication skills and leadership qualities, capable of solving non-standard problems. It is on this path that a dialectical and progressive combination of potentials and realities is possible.

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DOI: 10.37930/2782-6465-2024-3-1-52-57

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NEW PRODUCTS AND NEEDS IN THE ERA OF CYBER-PHYSICAL SYSTEMS

Abstract: The article reveals the periodization of the evolution of the main scientific and industrial discoveries in the field of digitalization, artificial intelligence, cyberphysics, as well as the prospects for the evolution of needs and product markets in connection with the development of cyber-physical systems. For cyber-physical systems, there is already an extensive knowledge base formed by various technical disciplines, including information systems, engineering, computer science, and mechatronics. Neurotechnological companies aim to create a holistic brain interface capable of linking biological and artificial intelligence more closely. The neural interface is able to absolutely determine consumer behavior in accordance with the project. He will be able to set, set consumer behavior in a range in accordance with management goals – from absolutely rational to irrational. The range of applications of cyber-physical systems includes transport, logistics, medical devices, energy, security systems, asset and resource management, distributed robotics, military systems and many others. The products of the future are a computer program that simulates the work of the mind; physical media for storing information; means of extracting and transferring information located in the brain to a computer; quantum computers; controlling machines with the power of thought; exchange of information between people without additional “physical” control interfaces.

Keywords: cyber-physical goods, consumer behavior, ethics, digitalization, neurointerface.

For citation: Skokov R.Yu. (2024). New Products and Needs in the Era of Cyber-Physical Systems. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 52–57. DOI: 10.37930/2782-618X-2024-3-1-52-57

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网络物理技术时代的新商品和新需求

摘要: 本文揭示了数字化、人工智能和网络物理领域的主要科学和工业发现的演变周期, 以及网络物理系统发展所带来的需求和商品市场的演变前景。在多个技术学科已经形成了有关网络物理系统的庞大的知识库, 包括信息系统、工程学、计算机科学和机电一体化等学科。神经技术公司的目标是创建能够将生物智能和人工智能更紧密地联系在一起的大脑接口。神经接口能够按照设计完全决定消费者的行为。它将能够根据管理目标设置和控制消费者行为的范围: 从绝对理性到非理性。网络物理技术的应用范围包括运输工具、物流、医疗设备、能源、安全系统、资产和资源管理、分布式机器人、军事系统等。模拟思维工作的计算机程序、存储信息的物理介质、提取大脑信息并将其传输到计算机的工具、量子计算机、通过思维操控的机器、无需额外的“物理”控制界面的人与人之间的信息交流服务等将成为未来商品。

关键词: 网络物理商品、消费者行为、伦理、数字化、神经接口。

引用注释: 斯科可夫R.Y.(2024)网络物理技术时代的新商品和新需求 //智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 52–57. DOI: 10.37930/2782-618X-2024-3-1-52-57

The Internet, social networks, cloud services and e-commerce are important components of a modern person's life. Cyber-physical systems combine two aspects of people's lives – the real “analog” world and cyberspace.

The creation of cyberphysical systems was led by the evolution and synthesis of discoveries in physiology, neurobiology, psychology, addictionology, computer science, electronics, communications, cybernetics, and captology. The periodization of this process can be represented by the following main substantive milestones and time stages:

1. Achievements of physiology.

Principles of higher nervous activity by I. Pavlov (1904), author of the behavioral concepts of reinforcement, unconditioned and conditioned reflexes.

Theory of functional systems by P. Anokhin (1935), the harbinger of cybernetics (author of the term «reverse afferentation or communication»).

2. Development of computer science, the emergence of cybernetics for the purposes of the military-industrial complex.

1915-1918 an American entrepreneur created the first unmanned aerial vehicle E. Sperry.

1936-1940 A. Turing's computer was created, the first computer, the doctrine of the architecture of computers (J. von Neumann), information theory (K. Shannon).

1940-1942 the work of N. Wiener and D. Bigelow on the creation of an air defense device that predicts the flight of an aircraft.

3. Research on the brain and artificial intelligence.

1949 creation of a “homeostat” – the first “thinking machine” closest to an artificial brain (W. Ashby).

1956-1957 – the first programs in the field of artificial intelligence (G. Simon and A. Newell).

1949 Nobel Prize in Medicine and Physiology was awarded to E. Moniz for lobotomy.

1950 – testing of the first neural interface device (Stimoceiver) (J. Delgado).

4. Development of data transmission networks and computers for military-political purposes.

In the early 50s. – in the military-industrial complex of the USSR, communication lines (networks) were widely used, connecting central computers with remote terminals (RTE).

1962 – the first computer video game, Spacewar. S. Brand compared it to taking psychedelics.

1959-1960s. – development of the use of cybernetics in management and economics (E. Beer, V. Glushkov).

1967 – F. Emery (Tavistock Institute) predicted the use of “teenage swarm synergy” at rock concerts to destroy nation states by the end of the 90s. But the methods were used already in 1968 in the European “color revolutions” (“Prague Spring”, “Paris Revolution”).

5. Distribution of data networks and computerization to the mass consumer sector.

Mid-1960s – in the USSR, automated air and railway ticket offices “Sirena” and “Express” (an analogue of social networks) were developed and launched in 1972.

1969-1971 The first American networks (ARPANET and TYMNET) were created by order of the American military agency DARPA.

At the end of the 1970s S. Jobs and S. Wozniak brought personal computers and telephone devices to the market.

In the early 1980s P. Benioff proposed a quantum mechanical model of the Turing machine.

1984 Apple introduced the Macintosh, the first computer with a graphical user interface.

1985 The WELL online community was opened.

1996 Captology (B.J. Fogg) appears, studying computers as technologies of persuasion.

2003-2004 The rise of social media (LinkedIn, Facebook).

6. Development of neurocomputer interface.

2019-2023 Elon Musk and Neuralink presented the technology of an implantable neural interface (“brain-computer”), received permission for clinical trials on humans.

Digitalization, artificial intelligence, cyber-physical systems have changed the model of production, consumption, management.

The concept of Industry 4.0 is based on cyber-physical systems connecting the material and virtual worlds via the Internet. Cyber-physical systems are used in industry in the following areas: autonomous robots, drones, digital twins, integration systems, Internet of things, gamification, cybersecurity, online planning and analysis, cloud technologies, adaptive manufacturing, augmented reality, energy-efficient technologies, big data, alternative energy, unmanned transport.

Cyber-physical systems (CPS) are a complex concept. To date, they have not received an unambiguous and generally accepted definition, because systems are at the intersection of several spheres at once and, depending on the implementation, are capable of affecting a variety of aspects of people’s lives. According to E.A. Lee and S.A. Seshia in 2006 Helen Gill from the US National Science Foundation defined the term CPS as “the integration of computation and physical processes (Lee et al., 2017). Embedded computers and networks monitor and control physical processes, usually with feedback loops in which physical processes influence computation and vice versa.”

CPS combine and integrate several technology approaches, including big data analytics and artificial intelligence, improving the monitoring and control of production processes in real time. CPS are used both in industry and in many other areas of application, therefore they are general-purpose technologies [Bresnahan, 2010].

In our opinion, cyber-physical systems can be defined as integrated engineering systems that are built on the basis of seamless integration of physical components and software that interact with one another and with the external environment using modern technologies.

The cyber-physical era differs from the digital era in that it includes not only the world of digital technology, but also the physical world.

Cyber-physical systems are a key enabler of the new era of Internet communications and real-time economic relations between all participants in the value chain, such as devices, systems, organizations and people. The future of CPS will lead to the next generation of a wide range of new specific products, needs and ways to meet them. The mechanisms of supply and demand for CPS will have significant differences from models based on the laws of classical theory.

In order to study future models of consumer behavior, interdisciplinary knowledge will be required, based on: neuroscience, cognitive psychology, epistemology, philosophy, linguistics, anthropology, artificial intelligence, electromagnetism, field theory, particle physics, information theory, cosmology. Logical possibilities for solving problems are higher at the intersection of disciplines.

The theory of information and computational sciences, which appeared in the middle of the 20th century. thanks to A. Turing (who created a mechanical device capable of carrying out any computational process, 1936), J. von Neumann (author of the doctrine of the architecture of computers, 1944), K. Shannon (formulated the theory of information, 1948), allows us to take a fresh look at the product, use value, utility.

Experts in consumer behavior and psychologists sensed the incredible potential of the discoveries of information and communication theory and applied them in their field. With the discovery and development of information theory, it is obvious that the property of a product is information about it and the information itself can be a product in its pure form. The properties of a commodity body are its physical and informational characteristics. Therefore, in the era of computers and telecommunications, we can say that use value has become the embodiment of not only physical, but also informational existence.

A product is (or can be) a physical carrier of information, stores it, and processes it. The physical state of an object, substance, product that is a carrier of information affects the quality of transmission, reproduction, safety, and duration of existence of information. Stone (rock paintings), clay (clay tablets), papyrus, paper, ice, air (communication through smoke, using special pyrotechnic devices) are historically known formats for figurative representation of information. Great many people consider information to be the same basic entity as matter, energy or consciousness. The reality through which information passes can be divided into spheres: physical and mental. Matter is a physical substance as opposed to a mental, spiritual substance. Speaking about the types of matter that serve as the material basis for presenting information, it is obvious that they change and evolve. At the present stage, the accumulation of bits of information is carried out in individual atoms, electrons, photons. In the early 1980s P. Benioff proposed a quantum mechanical model of the Turing machine, so the creation of quantum computers seems to be a matter of time.

Information moves from physical reality to the mental reality of a person. Consumer behavior consists of a unique configuration of traits and attributes that make a person one of a kind (personality), unlike all other people. According to C.L. Delgado “information goes hand in hand with the concepts of personality and consciousness” [Delgado, 2022, p. 155], “the human personality is a mask, a product of information processed by the brain”, “the entire content of the mind is information” [Delgado, 2022, p. 166].

According to R. Penrose, the behavior of the human mind does not fit into the laws of any of the currently known areas of physics¹. “Despite decades of combined efforts by neurophysiologists, philosophers and psychologists, the question of how our brain makes us conscious and how sensations, feelings and subjectivity awaken has not received an answer: we have no idea” [Noé, 2010, p. 13]. C.L. Delgado identifies the following models of the mind: materialism, neural doctrine, computational focus, neural network approach, quantum paradigm [Delgado, 2022, p. 122-128]. Materialism states that the brain consists of matter (two types of quarks and one type of electron); the neural doctrine explains how information moves through the nervous system (received, encoded, transmitted and stored); in accordance with the computational approach, knowledge is presented in the mind in an analytical format (in the form of judgments) or in an analog format (using mental pictures); the quantum paradigm shows that the brain uses the prin-

¹ Discover interview: Roger Penrose says Physics is Wrong from String Theory to Quantum Mechanics. Discover Magazine. October. 2009. 06.

principles of classical physics and quantum mechanisms for computational operations. To a certain extent, this also explains the wide range of economic models of human behavior.

Until now, digital (or computer) behavioral design is used as a tool, a technology for creating digital goods of a new generation, which makes it possible to form consumer habits and manipulate people's behavior. There are various models for describing this process, for example, the "hook" of Eyal and R. Hoover [Eyal et al., 2013], represented by a four-stage process of trigger, action, variable reward and investment. Digital behavioral design is based primarily on psychology.

Developers of neural interfaces are aimed at creating a holistic brain interface capable of more closely connecting biological and artificial intelligence [Skokov, 2022]. The neurocomputer interface, as a system for exchanging information directly between the brain and an electronic device, is based on neurobiology. A neurocomputer interface opens up an order of magnitude greater possibilities for influencing human behavior compared to digital behavioral design. Behavioral design transforms, influences, influences behavior, brings it closer to a specific project. The neural interface is capable of absolutely determining consumer behavior in accordance with the design. He will be able to set and establish consumer behavior in the full range depending on management goals: absolutely rational, rational, limitedly rational, and even irrational, which is absent in the mainstream of economic science.

The areas of application of cyber-physical systems are as follows:

- transport systems, logistics, manufacturing (including agriculture), medical devices (including for elderly and disabled people);
- production and distribution of electricity, energy saving;
- heating, ventilation and air conditioning systems;
- physical safety, assistance and rescue;
- traffic and safety management;
- asset management and distributed robotics;
- resource management (land, water, etc.);
- control and measuring instruments;
- military systems.

The goods of the future are: a computer program that simulates the work of the mind; a physical medium for storing information (including the human brain after death); means of extracting and transferring information located in the brain to a computer; quantum computers; controlling machines with the power of thought; exchange of information between people without additional "physical" control interfaces

CPS becomes a key driver of the innovation potential of industries large and small, driving economic growth and supporting meaningful jobs for citizens. In Russia, research into the problems of creating and monetizing cyber-physical systems is not carried out intensively enough, as a result of which all the latest initiatives in the field of digitalization of the economy, which looked like breakthroughs, in fact have not yet led to the emergence of competitive goods and business models of monetization. The economic and institutional aspects, which are of utmost importance, have not actually been studied, therefore the categorization of cyber-physical goods acquires economic, legal, and socio-psychological significance. It is necessary to build an economic theory of cyber-physical systems and a model of public and state regulation of the markets for goods and services generated by them based on specifying their essence, structure, functions,

specifics of supply and demand, analysis of the evolution of concepts, assessment of effects and risks, development experience institutions and mechanisms of regulation and self-regulation.

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DOI: 10.37930/2782-6465-2024-3-1-58-63

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UNEXPECTED SUBJECT OF INTERNATIONAL RELATIONS (CORPORATOCRATS OUST OLIGARCHS)

Abstract: The article proposes to test the hypothesis that it is the market power of giant corporations that forms the basis of the global deep state. Therefore, it is not States, but corporations themselves, that are the driver of reducing the sovereignty of states. The latter is often only a personification of the exercise of corporate power.

Keywords: deep state, corporate charter, corporate power, corporatocracy, country sovereignty, subject of international relations.

For citation: Tretyak V.P., Smirnov V.G. (2024). Unexpected Subject of International Relations (Corporatocrats Oust Oligarchs). *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 58–63. DOI: 10.37930/2782-6465-2024-3-1-58-63

特列季亚克 V. P.

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国际关系中出乎预料的主体 (公司巨头取代寡头)

摘要: 文章建议验证一个假设, 这个假设就是巨型公司的市场力量构成了世界深层国家的基础。因此, 导致国家主权被削弱的不是国家, 而是企业。国家往往只是公司行使权力的代表。

关键词: 深层国家、公司章程、公司权力、公司巨头政治、国家主权、国际关系主体。

引用注释: 特列季亚克 V. P., 斯米尔诺夫 B. G. (2024) 国际关系中出乎预料的主体//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 58–63. DOI: 10.37930/2782-6465-2024-3-1-58-63

Introduction

The power of giant corporations currently forms the basis of the Global Deep State. Based on the aforesaid, it is not states, but corporations that are the driver of the diminishment in state sovereignty. The latter are often just the personification of the exercise of corporate power.

Analysis of Studies

The forty-fifth president of the United States had a strong influence on the global media space. At the instigation of Donald Trump, concepts such as “fake news” and “Deep State” were introduced into this media space. While the first phrase, which originated from PR, in our country was called a lie, or untruth, then the second evoked the idea of a global conspiracy.

Doug Casey states that “The Deep State is an extremely powerful network that controls nearly everything around you” [Casey, 2015]. They don’t talk about it publicly. This interpretation conveys some kind of mystery and frightening uncertainty, while emphasizing that this concept exists not only within the framework of the nation state.

The aforementioned author believes that the concept of the “Deep State” originated in Turkey and “... is the heir to the totally corrupt Byzantine and Ottoman Empires. And in the best Byzantine manner, the Deep State has insinuated itself throughout the fabric of what once was America” [Casey, 2015]. At the same time, Doug Casey, like L.F. Boltenkova¹, tries to consider the essence of the Deep State, on the one hand, as an ahistorical concept characteristic of national states, and on the other, seeks to find an analogue in history that is not related to the dynamics of the development of big capital, which is characteristic of the US state (Fig. 1).

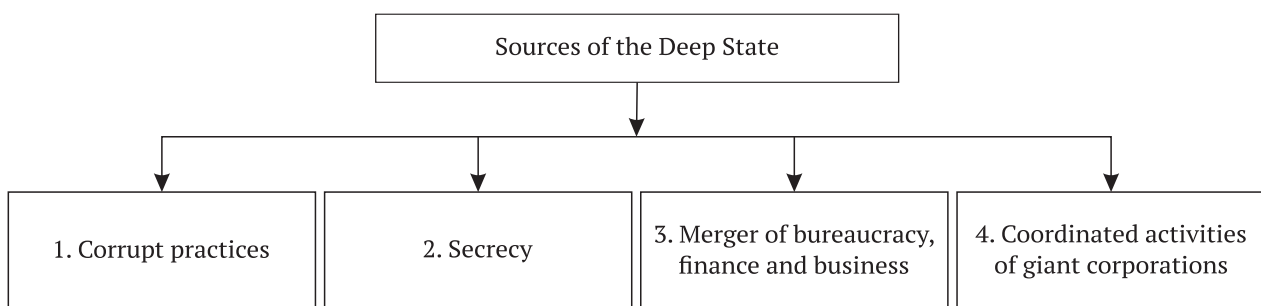


Fig.1. Sources of the Deep State

Jason Royce Lindsey argues that “The Deep State draws power from the national security and intelligence communities, a realm where secrecy is a source of power” [Lindsey, 2013, p. 35–36]. The question is what is the secrecy of power, what is the nature of that power, and does that power only exist if there is a market?

Bob Jessop sees the essence of the Deep State as a hybrid amalgamation of “government officials and upper-level financiers and industrialists who effectively run the United States without asking voters, violating the essence of the political process” [Jessop, 2016]². We are talking about the Deep State in one country – the United States, and at the same time its ability to influence global economic processes is diminished. I.V. Ponkin writes that the “Deep State” ontologically, existentially can be officially part of a legal state or government (as, for example, “weaving” of the system of state power structures “with the institution of attached intelligence officers... but for the most part we are talking about completely different ontological phenomena” [Ponkin, 2019, p. 44].

¹ Political history shows that the Deep State is not a product of the 20th–21st centuries. Its elements have been “hiding” in political systems for a long time. Otherwise, there would be no one to change political regimes, overthrow kings, czars, etc. The strength and scale of this “state” vary depending on the country and time”(quoted from: [Boltenkova, 2019, p. 620]).

² See also: What the Rothschilds Teach Western “leaders”, or How the Deep State Functions (Part 1) (2018). URL: <https://rurik-l.livejournal.com/3524707.html> (access date: 14.02.2024).

Identification of Outstanding Issues

Meanwhile, we see how corporate power extends to interstate relations and affects the sovereign behavior of many countries.

According to analyst A. Fursov, "...by the mid-70s, there was a reorientation of the intelligence services of the largest Western states towards transnational corporations. This very reorientation allowed the intelligence services to gain an independent role between the state and the corporatocracy" [Fursov, 2021]. The essence of the Deep State is the coordinated activities of giant corporations. Professor V. Katasonov believes that at the top of the global financial pyramid, which controls the functioning of the global economy, there are the "Big Four" companies: FMR, State Street, BlackRock, Vanguard [Katasonov, 2016].

Corporatocracy is a special product of the Global Deep State, not limited to its own state, but seeking to extend the market power of corporations to interstate relations, displacing and subordinating the activities of state entities in international relations, and reducing the importance of the sovereignty status of countries by turning them into instruments that strengthen the power of corporations.

Entities of corporatocracy (corporatocrats) are more difficult to personify than aristocrats or oligarchs¹. How did it become possible for corporations to enter the field of international relations?

V.P. Tretyak repeatedly drew attention to the fact that «... the entire set of market agents can be divided into two groups²: enterprises whose behavior completely depends on the situation on the industry market, i.e. ordinary firms, and active (dominant) firms³ that are able to influence both the market structure and the behavior of competitors and consumers". The latter are able to project their influence, their intra-company mechanism beyond their own borders.

Or otherwise, such corporations transfer intra-company power relations in a sense to market relations and influence the functioning of the market mechanism (adjust the market mechanism) [Tretyak, 2011, p. 26].

Giant corporations are passionate market agents capable of spreading their intra-company mechanism beyond their borders and adjusting the market mechanism itself both within national borders and beyond them⁴ [Korten, 2002]. They are capable of integrating assets both in the form of natural integration (capital accumulation) and in various types of incomplete and quasi-integration of assets. The above qualities allow them (corporations) to maintain a dominant position in the market and enhance their market power which adjusts the market mechanism itself.

D. Korten points out that "gaining strength within the feudal state, corporations must seek permission from the authorities (the crown) in order to successfully carry out their activities".

¹ Aristocracy is a product of forced economic organization, when the policy of one's own state is influenced by powerful, hereditary clans. Oligarchs are a product of the world of capital movement and wage labor, where wealthy citizens try to influence political processes within their country. Corporatocrats are not content with just influence within the country; they need to influence global political and economic processes.

² According to V.P. Tretyak, "there are mechanisms of resource redistribution: the market mechanism itself and the firm mechanism. In other words, a traditional firm is an institution for alternative distribution of resources between competing options, along with a market mechanism for redistributing resources" [Tretyak, 2011, p. 26].

³ According to V.P. Tretyak, "active firms have the ability to influence the behavior of actors in a given market, the industry market mechanism, while passive participants in the market game traditionally depend on the market mechanism for redistributing resources" [Tretyak, 2011, p. 26].

⁴ D. Korten points out that "corporations have emerged as the dominant governance institutions on the planet, with the largest among them reaching into virtually every country of the world and exceeding most governments in size and power (emphasis added – V. T., V. S.)" [Korten, 2002].

It is known that “...the corporations of those days were granted their charter from the crown and acted as an extension of the power of the crown. In general, these corporations were granted monopoly rights to territories and industries that were of strategic importance for the English state” [Korten, 2002]. “The corporate charter represented a grant from the crown that limited an investor’s liability for losses of the corporation to the amount of his or her investment in it — a right not extended to individual citizens. Each charter set forth the specific rights and obligations conferred on a particular corporation, including the share of profits that would go to the crown in return for the special privilege extended. Such charters were bestowed at the pleasure of the crown and could be withdrawn at any time” [Korten, 2002]. At that time, the activities of the corporation were still dependent on the state (Fig. 2).

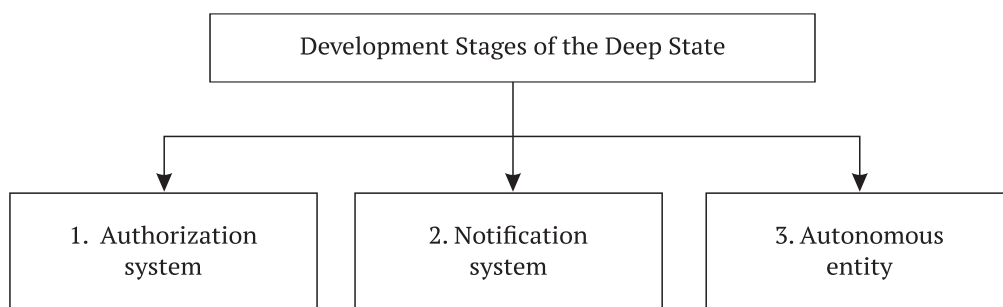


Fig. 2. Development Stages of the Deep State

The calls of corporate representatives to fight for freedom do not at all mean only the deliverance of all people from the rudiments of feudal dependence, but rather, it is the desire of corporations to move from the authorization system of charter registration to its notification nature, while it would be possible to minimize the share of profit that went to the state in return for this special privilege, the investor’s liability for the corporation’s losses. In other words, corporations have secured limited liability not as a privilege, but as a standard practice.

D. Korten also claims that from the practice of creating corporations in the United States, it is known that in the early stages the approval of corporate charters was “kept under watchful citizen and governmental control. The power to issue corporate charters was retained by the individual states, rather than being given to the federal government. The intent was to keep that power as close as possible to citizen control”, and further adds: “Having gotten rid of the shackles of the feudal state and retained market power, corporations are moving away from the authorization system for registering their activities (charter), gradually reducing the influence of both the state and public control, turning it purely into a formal procedure”¹ [Korten, 2002].

Results and Discussions

Modern corporations are increasingly turning into an independent entity, independent even of the people who make it up – a special institution – to a certain extent different from both traditional firms and passionate companies. Corporations become so independent of anything that they become an autonomous entity, growing out of the market and operating against the market.

¹ At the same time, D. Korten believes that “as corporations gain in autonomous institutional power and become more detached from people and place, the human interest and the corporate interest increasingly diverge” [Korten, 2002].

Corporations, as important new institutions, remove obstacles to international trade, the flow of capital, global distribution, and the functioning of global transport corridors.

The essence of the Deep State lies not only and not so much in the symbiosis of the institutions of US government power, but in the coordinated activities of giant corporations to control the world economy. As a result, the state becomes not the only subject of international relations and very often not the strongest. “Along with that, there are transnational corporations and closed supranational groups” [Fursov, 2021]. Moreover, it can be said that states are gradually ceding their sovereignty to the consolidated institution of corporations. This is manifested in the creation of trading posts on the territory of other countries (the experience of Genoa and Venice), and in the organization of colonial dependent countries, and in the overthrow of legitimate governments, and in the “spontaneous” going through the Orange Revolutions or Rose Revolutions, and in the creation of international organizations (such as the IMF), reserve currency (dollar), holding groups, financial and industrial groups, transnational companies, etc.

Financial power is the basis for the functioning of the Deep State. The power of global corporations as an institution sacrifices the sovereignty of even their own state and the corporatocrats they reproduce (Fig. 3).

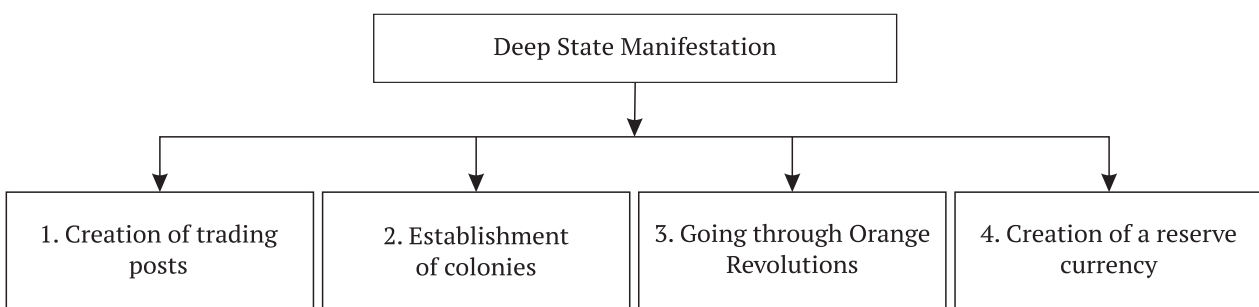


Fig.3. Deep State Manifestation

Conclusions

Analysis of the current situation allows us to draw the following conclusions:

1. The market power of giant corporations forms the basis of the Global Deep State.
2. Corporations are the driver of the decrease in the sovereignty of states, which are often a simple personification of the exercise of corporate power.

3. Corporatocracy is a special product of the Global Deep State, not limited to its own state, but seeking to extend the power of corporations to interstate relations, displacing and subordinating the activities of state entities in international relations, and reducing the importance of the sovereignty status of countries by turning them into instruments that strengthen the power of corporations.

4. Aristocrats and oligarchs represent a personified manifestation of either influential clans (boyars, lords...) influencing the power of the state, or financiers (bankers, insurers...) persuading officials to make the “right decisions” for finance moguls.

5. Corporatocrats are more difficult to personify than aristocrats (power by origin) or oligarchs (power by financial capabilities). Corporatocracy forms the backbone of the Deep State, capable of

influencing the level of sovereignty of countries that were previously the only subject of international relations. An unusual subject of this relationship is emerging.

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DOI: 10.37930/2782-6465-2024-3-1-64-67

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SEARCHING FOR PROSPECTS FOR FORMING A SMART CITY NOOSPACE BASED ON AUGMENTED REALITY TECHNOLOGIES

Abstract: The article presents the results of research into the influence of augmented reality technologies on the development of noospaces in smart cities. Their deep integration with other digital technologies of a smart city is revealed and various directions of influence on the intelligent systems of smart city spaces are revealed. The influence of augmented reality technologies on changing methods of communication, cultural values and habits of residents of a smart city is shown.

Keywords: noospaces, smart city, noovalues, participatory design, augmented reality technologies.

For citation: Shushunova T.N. (2024). Searching for Prospects for Forming a Smart City Noospace Based on Augmented Reality Technologies. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 64–67. DOI: 10.37930/2782-6465-2024-3-1-64-67

舒庶诺娃 T. N.

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对在增强现实技术基础上建立智能城市的智慧空间的前景的探索

摘要: 文章介绍了增强现实技术对智能城市的智慧空间发展的影响方面的研究成果。文章揭示了增强现实技术与智能城市其他数字技术的深度融合, 并说明了增强现实技术对智能城市空间智能系统的多方面影响。指出了增强现实技术对智能城市居民的交流方式、文化价值观和生活习惯的影响。

关键词: 智慧空间、智能城市、智慧价值观、参与式设计、增强现实技术。

引用注释: 舒庶诺娃 T. N. (2024) 对在增强现实技术基础上建立智能城市的智慧空间的前景的探索 // 智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 64–67. DOI: 10.37930/2782-6465-2024-3-1-64-67

The growing informatization of society, life in the VUCA world in the conditions of combusive development of technology cannot but cause concern and uncertainty about the future for the average person. It is beyond argument that new technologies, at the stage of searching for the optimal development option, must find ways aimed at ensuring safety and favorable conditions for human life, resource conservation, and the discovery of new inexhaustible renewable sources of resources demanded by smart technologies. They should have a high penetration rate in the spaces of smart cities, promoting their new organization and social interaction of residents in physical and virtual environments [Bodrunov, 2018, p. 153]. This is how smart spaces of the city – noospaces – are developed. Their rapid development is ensured primarily through the integration

of smart technologies, such as artificial intelligence, big data, Internet of Things, cloud computing, blockchain, robotics, virtual and augmented reality. The sustainable development, well-being and comfort of people in smart cities are also facilitated by the resilience of smart cities [Akberdina, 2021, p. 1412], promoting flexibility, adaptability and rapid response in urban planning to external changes. Intelligent systems of urban noospaces are formed not only on the basis of a technocratic approach, but also as a result of development of new values - noovalues, transformation of the cultural code of urban life with different content, habits, methods of communication and self-expression [Bodrunov, 2022, p. 23]. After all, part of a person's life is already spent in the digital world of the Internet, in virtual reality.

One of the most exciting technology innovations that demonstrates such changes most clearly and revolutionizes smart city spaces is Augmented Reality (AR). It allows adding virtual elements, images and sounds to the real-world environment of public spaces in the urban environment, art spaces, creative and tourist clusters [Bitkin, 2021]. Transformation of urban spaces based on smart technologies, which include virtual and augmented reality, undoubtedly contributes to the development of noospaces of smart cities.

The purpose of the study is to analyze the influence of augmented reality on the perception and interaction with the noospaces of a smart city, and to search for prospects for the development of this area, including the discovery of new unique opportunities for self-expression and self-actualization of city residents.

The diffusion of augmented reality into the noospaces of smart cities leads to the fact that city residents cease to be passive observers and enter into an interactive game, where they become an active participant or protagonist. Such interaction introduces new emotional and cognitive levels of perception and opens up completely new opportunities when designing, for example, creative clusters and public spaces of a smart city. Noospaces are a human-centric urban environment, as they place a person at the center of the entire smart city system. They understand that noospace is an open, safe and comfortable place where they can have a very interesting and meaningful time, relax emotionally and chat with friends. This is how a new content of human needs, needs of a resident of a smart city, is gradually being formed, where values, the quality of consumed goods, reducing inequality, a healthy lifestyle and the environmental sustainability of the urban environment are of paramount importance.

The relevance of using augmented reality lies in the fact that it helps to create “virtual bridges” between cultures, times and places, ensuring the conservation, protection and preservation of cultural and natural heritage. This technology makes it possible, for example, to exhibit works of art from different eras, uniting them in one space and enriching the viewer's perception. The new digital humanism does not imply an insensitive, egalitarian, equal approach to people and urban communities. Human-centricity is based on respect and preservation of the cultural code, memory and traditions of each resident.

Augmented reality technologies ensure a person's right to “their own” city or region. Each city user will be able to customize the appearance of the city as they wish or delegate this customization to algorithms based on their search queries. Using augmented reality glasses, they can, for example, recreate old buildings in their historical locations. Noospaces are urban environments of involvement, diversity and inclusion.

In the noospaces of a smart city, the fusion of art and technology becomes a reality. Augmented reality is a modern tool that significantly changes approaches to arranging art spaces, elimi-

nating barriers in time and space. Despite all the limitations and challenges, augmented reality remains a potentially powerful tool for attracting and interacting with visitors at exhibitions. The use of AR can create a unique and original experience, interaction between visitors and works of art. To visit an exhibition in a famous museum, you don't have to travel to another city or country; you just need to use a smart gadget powered by virtual and augmented reality.

The use of its digital tools transforms art spaces into educational tourist clusters of a smart city, into noospaces where interaction takes place between the virtual and real world based on new forms of art, while enriching the cultural experience of urban communities. For example, special tourist tariffs may appear that will allow one to study the history of buildings, streets and public spaces [Abdullaev, 2023, p. 7].

At the same time, the use of augmented reality technologies in smart cities is not limited to convenience. Their content is much broader and is also aimed at creating new ways of communication and self-actualization of city residents in the processes of managing a smart city. Effective management of smart public spaces cannot be achieved without increasing the degree of involvement of civil society in decision-making processes and urban development. Based on the use of virtual and augmented reality technologies in a smart city, it is possible to provide new opportunities for collaboration with citizens on improvement projects. For example, any city resident, if desired, can download an application with augmented reality on a smartphone, go outside and through the gadget's screen see virtual models of buildings and structures superimposed on real objects where they should appear - the locations of pipes, power cables, gas lines, roads, lawns and playgrounds.

Following the development of smart mechanisms for ensuring civil society involvement in urban planning processes and managing the design of noospaces, engaged residents will no longer have to gather at the local government office to take part in public hearings on the city's master plan. They will only have to visit the event in the metaverse at the specified time, where, together with the architects, they can go through different options for the functions and visual design of public space, real 3D models of the future space. In virtual reality, they can walk among them, feel the distances and dimensions. Cities will have endless digital twins with different themes.

Participation in the design of noospaces will contribute to further development of participatory budgeting. Since citizens will not only be interested in putting forward and discussing new projects, but also in co-financing the works to implement their initiatives and controlling their implementation.

The efficiency of city development management will undoubtedly improve not only due to the transparency and accessibility of citizen participation processes, but also by increasing the value of noospaces among residents, since they not only took the initiative and put forward an improvement project, but also financed it to a certain extent and managed the works under the proposed project. As a result, they will have the opportunity not only to gain self-satisfaction from the completed project for the development of a comfortable urban environment, but will also appreciate more what was built on their initiative and with their direct participation.

Moreover, the processes of citizen participation in the design of new spaces will be aimed at ensuring safety and favorable living conditions for them. Residents will be interested in choosing urban development projects that will be aimed at resource conservation, health protection, and environmental safety. After all, they and their future generations will live in these noospaces. The emerging cultural values of smart cities thus imply not just participatory design and co-financing

by citizens based on smart technologies, including virtual and augmented reality, but also responsible co-financing, responsible investing, when they invest personal savings in projects that comply with international ESG principles. Trust management of such assets allows the investor to generate long-term capital and invest it in intelligent systems for sustainable urban noospaces, including energy-efficient buildings and low-carbon transport, smart waste management systems to ensure proper collection, recycling and disposal of solid waste in cities and etc.

Planning solutions obtained using augmented reality technologies ensure the sustainability of the urban environment to natural and man-made threats, create conditions for a healthy lifestyle in green areas and public places that are accessible and open to all, especially women, children, and the elderly. This is because architects and engaged city residents can design noospaces not in the office, but in the city itself. This way they can achieve high accuracy of perception and compliance with the characteristics of the territory of noospaces, and quickly make the right decisions.

Thus, augmented reality technologies are integrated with other digital technologies and influence many intelligent systems of smart cities. The meaning of their development is not limited only to technical systems. They change the habits and lifestyle of urban residents, their methods of communication, cultural values, and self-esteem criteria. Knowledge of the development patterns of the digital technologies in question will contribute not only to accelerating the formation of comfortable city noospaces, but also to their efficient management.

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DOI: 10.37930/2782-6465-2024-3-1-68-73

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ECOSYSTEM AS A KEY FORM OF INTEGRATION IN NOONOMY

Abstract: The article reveals the essence of business models and their transition to more flexible and innovative ones. To achieve maximum efficiency of these processes, it is necessary to integrate several market participants at once. Therefore, currently one of the key trends is the transformation of the traditional business model towards an ecosystem. Ecosystems enable companies to create value for customers through shared efforts and resources, and to respond more quickly to rapidly changing market conditions. At the same time, speaking about the importance of intellectual capital, the concept of noonomy is increasingly being discussed. Noonomy is a new economic system based on the principles of trust, fairness and sustainability. Comparing the conceptual foundations of the ecosystem and noonomy, close relationships between their principles can be traced, allowing us to conclude that the ecosystem is the key form of the future social order.

Keywords: noonomy, ecosystem, integration, consumer, client-centricity, human-centricity.

For citation: Kalenov O.E., Romanovskaya K.D. (2024). Ecosystem as a Key Form of Integration in Noonomy. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 68–73. DOI: 10.37930/ 2782-6465-2024-3-1-68-73

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生态系统是智慧经济的主要一体化形式

摘要: 文章揭示了商业模式及其向更加灵活和创新模式转变的本质。为了实现转变过程的最大效率, 必须同时使多个市场参与者一体化。因此, 当前的主要趋势之一是传统商业模式向生态系统转型。生态系统使企业能够通过共同努力和资源利用为客户创造价值, 并对快速变化的市场环境做出更迅速的反应。在谈论智力资本重要性的同时, 智慧经济的概念也越来越多地被讨论。智慧经济是一种基于信任、公平和可持续原则的新经济体系。通过比较生态系统和智慧经济的基本概念, 可以发现两者的原则之间的密切联系, 从而得出结论: 生态系统是未来社会结构的主要形式。

关键词: 智慧经济、生态系统、一体化、消费者、以客户为中心、以人为本。

引用注释:卡列诺夫 O. E., 罗曼诺夫斯卡娅 K. D. (2024) 生态系统是智慧经济的主要一体化形式//智慧经济与智慧社会. 维捷新兴工业发展研究所论文选, Vol. 3, No. 1, pp. 68–73. DOI: 10.37930/2782-6465-2024-3-1-68-73

Recently, with the development of digitalization and innovation and due to their intense implementation in our daily lives, they also extend to the economic sphere and give rise to ever new ways and mechanisms of business management. There is an increasing tendency for the emergence of integrated structures among organizations, which also results in the blurring of distinctions between industries and markets and their transformation. Increasingly, companies need to identify new ways to interact with customers in order to meet consumer expectations, while joining efforts with other market players.

In the course of such changes and the active digitalization of society, knowledge, human resources, information and so on, which we call intangible resources, become a critical factor in the economy. As one of the factors in determining the cost of goods and services, digital transformation has a key impact on the organization's position in the market, including its competitive growth.

Thus, as the economic environment changes, the market has increasingly moved away from traditional business models, and ecosystems are taking their place. Ecosystems imply changes in the relationship between the seller and the buyer, the development of technology and the increasing importance of an innovative approach in order to minimize effort and improve client-centricity.

You could say, at the moment the world is striving to achieve a qualitatively new economic system. This is the highest level of economic development, where intellectual and information resources predominate, with focus on human capital.

Speaking about the knowledge-based economy, it is obvious that in the near future the most competitive and investment-attractive countries and companies will be those whose economies are based not on the extraction of useful and rare natural resources, but on human capital and the capabilities for its effective use.

According to famous Russian economist S.D. Bodrunov, a fundamentally new type of material production is being developed on this basis - knowledge-intensive production [Bodrunov, 2019]. The progress of technology leads to the possibility of satisfying many human wants, previously satisfied through different and/or several industrial products, with one knowledge-intensive industrial product in the era of noonomy [Bodrunov, 2018, p. 97].

Noonomy is an economic system with the priority given to the relationships between people, not related to material production". That is, this is a non-economic way of managing the economy to meet wants, which is carried out by a human who has withdrawn beyond the boundaries of material production.

This concept began its development in the first half of the 20th century [Bodrunov, 2018, p. 14; Vernadsky, 1965, p. 328]. The difficulty of systematizing the periods of noonomy development is that it is not possible to specify any specific time period for the establishment of the concept of noonomy [Bodrunov, 2018, p. 4]. However, the following general stages can be distinguished:

1. 1936 – development of the concept of “Noosphere”;
2. 1950-1960 – the need to use human production resources to regulate natural processes;
3. Transition from a consumer society to a completely new attitude towards things and material objects in general;

4. Transition to noospheric development presupposes a qualitative transformation of the collective mind.

Also, an analysis of literature devoted to this concept allows us to highlight the following list of principles of the concept of noonomy:

1. Self-limitation of consumption (only to reasonable wants based on cultural criteria);
2. Satisfaction of specific and reasonable wants;
3. Reasonable criteria for interference with activities;
4. Rationalization of relations with nature and reduction of production waste;
5. Reasonableness of technical application of knowledge;
6. Reliability and performance of goods and services;
7. Abandonment of the institution of ownership. With the abandonment of ownership, the economy as such will vanish, because the relations of appropriation and alienation constitute the basis of the economy;
8. Knowledge as the basis of the economy;
9. Integration of science and education;
10. Priority in achieving non-economic goals based on integration, cooperation, mutual benefit, on the combination of knowledge and technology with cultural, spiritual, moral and ethical norms and principles.

At the beginning of this work, the authors mentioned the traditional business model as the dominant concept in the economy since the second half of the last century. The emerging role of knowledge and the digital transformation of individual enterprises and entire industries have led to the popularization of the concept of noonomy [Khabibullina, 2022, p. 80].

In order not to find themselves in unfavorable position, organizations are forced to monitor the operations of their competitors. There is a transformation from the traditional business model towards an ecosystem. Based on existing studies, we can conclude that traditional business models are based on a rigid value chain, while ecosystem business models are based on flexible, adaptive value networks [Kalenov, 2020, pp. 124-131].

Thus, organizations with an ecosystem approach are able to follow modern trends and not neglect the introduction of innovations and new technologies, including recruitment of young and creative professionals. And through this, they can develop the vision of business in the economic environment and transform its integrated structures in such a way that these organizations can meet modern trends.

The ecosystem currently appears to be one of the most promising and advanced forms of integration in the economy. There is a large number of different definitions of the ecosystem in the economic plane, considering this phenomenon from entrepreneurial, innovation, venture, digital and other perspectives. After summarizing them, the business ecosystem will refer to the integration of various interrelated market actors, united, as a rule, around one leading organization and characterized by mutually beneficial interaction for the most complete and convenient satisfaction of the wants of a wide range of consumers, which is ensured through the wide use of digital technologies. This integration is also manifested through the development of an integrated product/service [Kalenov, 2021, pp. 37-46].

In addition, an ecosystem is an organization that uses innovative approaches to management and views the enterprise as an independently developing “living” organism that actively interacts with the external environment. The prerequisites for these transformations in economic rela-

tions, as already stated earlier, are the processes of development of new technologies and changes in the relationships of market actors.

The next step is to identify the properties and characteristics of the ecosystem:

1. Modular structure;
2. Creating value through collaboration and integration;
3. Knowledge-intensive production and/or service sector;
4. Client-centricity (with a perspective on human-centricity);
5. Qualitatively new satisfaction of wants (optimization and maximization) [Pavlov, 2021];
6. Transformation of ownership relations based on the development of institutions of co-ownership, sharing, etc.

Now, having listed the principles of noonomy and ecosystems, we can make a diagram showing the intersection of these principles. Thus, we can identify the principles that unite the concepts of “noonomy” and “ecosystem” (Fig. 1).

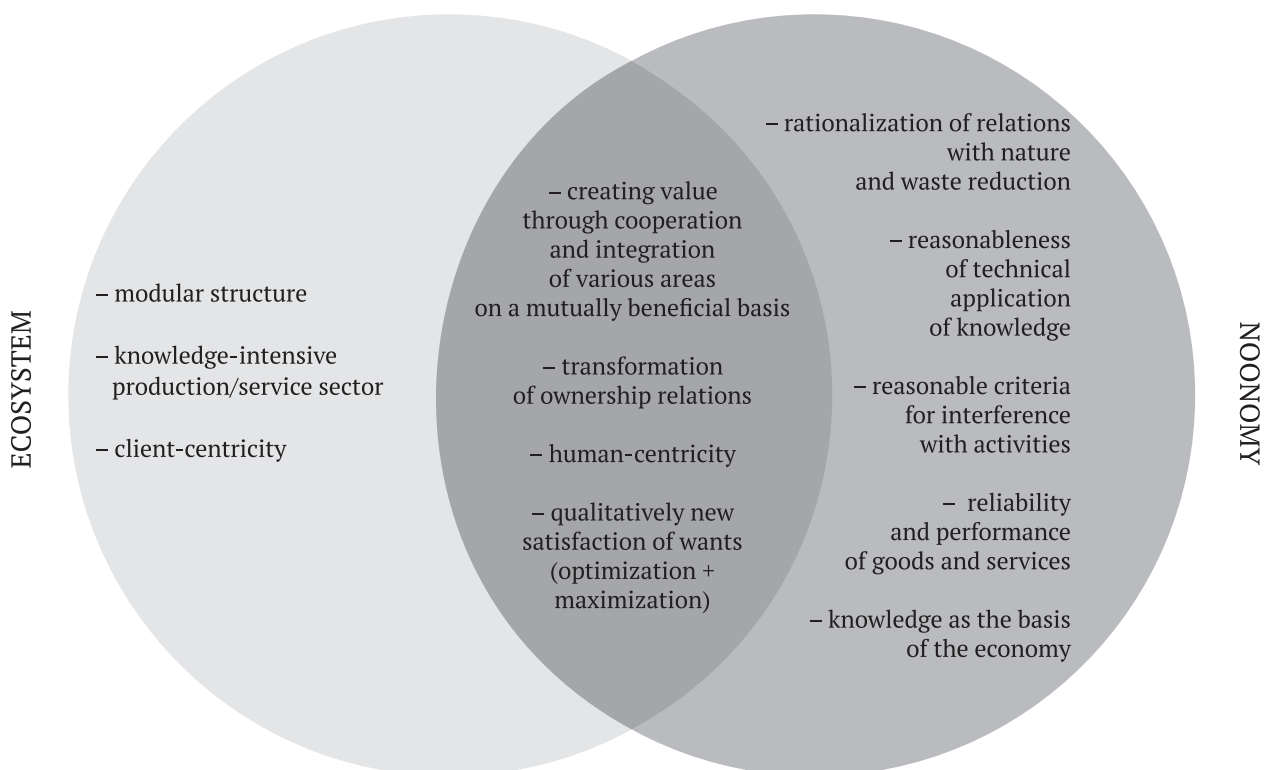


Figure 1. Intersection of Ecosystem and Noonomy Principles (prepared by the authors)

Using this diagram, we can clearly see that principles such as a) human-centricity, b) mutually beneficial cooperation and integration as a value, c) changing attitudes towards ownership, d) optimal and maximized satisfaction of wants are common to both noonomy and for the ecosystem, which allows us to conclude that the ecosystem may be one of the fundamental integration factors in noonomy.

In addition, the analysis allows us to draw conclusions about the evolution of integration forms of organizations based on the periodization of types of society. Pre-industrial society was dominated by integrated structures such as communities and tribes. Their main goal was survival. Then, in industrial society, syndicates and trusts began to evolve, which concentrated on gaining

profit and independence. The next stage came the post-industrial economy, as it is also called the “service economy”. It is dominated by alliances and holdings whose goal is to make a profit. In the future, thinking about the development of noonomy and the implementation of its principles, where the goal of integrated structures is to maximize and harmonize the satisfaction of wants, the main integration form will be the ecosystem, since, as we have already found out, it meets all the essential principles. So far, our society is in a transitional stage of business ecosystems, since the main goal of organizations is still to make a profit. However, the orientation vector is gradually shifting towards human-centricity. At the same time, with the development of the above factors, the level of systematicity and self-organization of these integration structures also increases.

Noonomy is considered to be something unrealistic and beyond comprehension even in the modern world. It is quite difficult to imagine such a universal type of economy, where knowledge is the basis of all branches of production, and production itself does not have any negative impact on any area of human life. Without changing the views of human and society on the modern economy, the development and implementation of the concept of noonomy is impossible, since its basis is the individual, namely his or her logically structured and rational behavior.

However, the ecosystem is already striving to cover these demands. As we have already noted, the ecosystem approach is characterized by modular structure, rationality, knowledge-intensive products and services, etc. Ecosystems vigorously pick up innovations and introduce them into their practices. Also, such organizations strive for reasonable consumption and generally try to comply with the principles of sustainable development. Coincidentally, all these specific features correspond to the concept of noonomy. Thus, we can conclude that, in a global strategic vision, the ecosystem may become a key factor leading our society to a unique and so far difficult to imagine noonomy structure.

Many corporations that already use an ecosystem approach can contribute to achieving the development and implementation of noonomy in our society. The largest number of such companies are located in the USA (Google, Uber, Apple, etc.) and China (Alibaba Group, Baidu, etc.), however, in recent years, Russia has also begun to rapidly develop in this area. Companies such as Yandex, Sber, VK, MTS, Tinkoff and others began to establish their own business ecosystems.

The largest domestic and global business ecosystems listed above have emerged around companies with great technological potential, a wide client base, and the ability to operate big data. These companies process a huge number of requests every day in their various services, providing various services and goods, and such organizations with an ecosystem approach are able to satisfy a wide range of consumer wants. For example, Sber, in addition to financial services, also provides services of a different nature: trading, logistics, marketing and others. In addition, by changing the vector to personal development, Sber breaks away from purely material services and puts its efforts into such services as Ökko, SberUniversity, 2GIS and others.

As Herman Gref said at Investor Day, announcing Sber’s strategy 2026¹, the company’s business model should first of all focus on human-centricity, not client-centricity: “We must put artificial intelligence at the service of humans. The business model must change, the center of which must be the person and his long-term interests <...>, and not his wallet”.

As we have already found out in the course of our work, the principles of noonomy meet the same criteria; accordingly, the listed global conglomerates can help ensure that the noonomic

¹ Official website of BCS Express/“News and Analytics” Section URL: // <https://bcs-express.ru/novosti-i-analitika/sber-predstavil-strategiiu-2026-glavnoe> (access date: 02.03.2024)

way of life is not so unimaginable for humanity. The ecosystem is the main and priority form of integration of market actors, allowing steps to be taken towards achieving a completely new type of economic development.

Thus, the study conducted by the authors allows us to conclude that ecosystems as key forms of integration, currently actively being established by such domestic companies as Sber, Yandex, VK, MTS, etc., are gradually approaching the standards of noonomy and directing the vector of their development towards human-centricity and the most effective satisfaction of reasonable wants of society.

Based on the use of knowledge (about the product, consumers and their needs), which in turn serves as an effective way to manage production, ecosystems also act as a kind of booster for the emergence and development of a new economic system - noonomy.

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DIGITAL TRANSFORMATION AS A TREND OF PROGRESS TOWARDS NOONOMY: A MARKETING APPROACH

Abstract: An analysis of the influence of digital transformation on the progress towards noonomy is carried out. Based on the marketing approach, it is shown that digital technologies play a key role in interaction with consumers, allow the creation of new values, markets for goods and services, and change approaches to organizing distribution and delivery systems. It has been established that in the digital marketing complex an important place is given to the digital image of a product. Features of pricing policy are associated with the need to take into account two components – value in the real world, as well as the value of digital products and services in the virtual world. The development of electronic trading platforms, marketplaces, and digital business platforms has led to the emergence of a platform economy. Recommendations for improving competitive strategies in the context of the transition to noonomy are formulated. Considering the complexity and versatility of the impact of digital transformation on the business environment, directions for future research in the field of marketing approaches in noonomy are discussed.

Keywords: business platforms, marketing, noonomy, consumer values, digital transformation.

For citation: Yanenko M.B., Yanenko M.E. (2024). Digital Transformation as a Trend of Promotion Towards Noonomy: Marketing Approach. *Noonomy and Noosociety. Almanac of Scientific Works of the S.Y. Witte INID*, Vol. 3, No. 1, pp. 74–79. DOI: 10.37930/2782-618X-2024-3-1-74-79

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从营销方式看数字化转型及其反映的向智慧经济迈进的趋势

摘要: 文章分析了数字化转型对向智慧经济发展的引领作用。透过营销方式作者看到, 数字技术在与消费者的互动中发挥着关键作用, 能够创造新的价值、新的商品和服务市场, 能够改变分销和运送体系的组织方法。作者认为, 在数字营销综合体系中, 商品的数字形象占有重要地位。定价政策的特殊性表现在两个方面: 数字产品和服务在现实世界的价值以及它们在虚拟世界中的价值。电子交易平台、在线商城、数字商务平台的发展催生了电子商务经济。本文给出了在向智慧经济过渡背景下改进

竞争战略的建议。文章分析了数字化转型对商业环境影响的复杂性和多面性,探讨了未来在智慧经济条件下营销方式领域的研究方向。

关键词:商业平台、营销、智慧经济、消费价值、数字化转型。

引用注释:亚年科M.B.,亚年科M.E.(2024)从营销方式看数字化转型及其反映的向智慧经济迈进的趋势 //智慧经济与智慧社会. 维捷新兴工业发展研究所论文选Vol. 3, No. 1, pp. 74–79. DOI: 10.37930/2782-618X-2024-3-1-74-79

Intense development of digital technologies which underlie the construction of information and communication systems that provide access to a huge amount of knowledge, gives new impetus to the progress towards noonomy. Digital transformation is having an increasing impact on the business environment, markets, and consumer behavior, forcing us to reconsider approaches to the formation and satisfaction of noowants [Bodrunov, 2020, p. 105].

Performance analysis of successful companies shows that when implementing competitive strategies, they use a marketing approach based on the use of innovative technologies in product and pricing policies, management of distribution and promotion of goods [Kraus et al, 2022, p. 55; Purnomo et al, 2022, pp. 68-75].

However, despite vast experience in the use of digital technologies, due attention has not yet been paid to the theoretical and methodological understanding of digital transformation and the role of marketing in the development of competitive corporate strategies as the basis for progress towards noonomy.

The purpose of this work is to identify trends of changes in marketing, make a synthesis of the experience of developing and using marketing tools during the transition to noonomy based on an analysis of digital transformation processes.

Objectives of the work:

- analyze the features of doing business in the context of changing trends in the development of digital technologies;
- demonstrate the areas of digital transformation and innovative development of marketing tools;
- provide proposals for the development of competitive strategies when moving towards noonomy.

The authors hypothesize that under the influence of new technologies, approaches to the digital transformation of the economy and the choice of marketing tools are changing. These primarily include the image-building for goods in the digital environment, the growing role of marketplaces and digital business platforms, and artificial intelligence technologies. In competitive strategies, businesses should be responsive to changing trends in the development of digital technologies and the capabilities of innovative marketing management tools.

The novelty of this study lies in the development of theory and practices of digital transformation of marketing in the context of progress towards noonomy. It was demonstrated that by gaining experience of interacting in the digital environment, users change their value systems. Noowants force us to develop the sector of digital and virtual goods and to build a digital image of the product. Marketplaces, digital business platforms, and ecosystems are becoming efficient tools for distribution and sales. Based on artificial intelligence technologies, innovative tools for promoting goods and services in the digital environment are being created.

Analysis of basic methodological approaches to digital transformation of business is presented by the authors in [Yanenko M.B., Yanenko M.E., 2011, p. 45; Yanenko et al, 2022, p. 4]. During the analysis, general scientific theoretical and empirical research methods, methods of system and comparative analysis, forecasting and expert assessments were used. To elaborate the concepts of digital transformation and technology from a marketing perspective, methods of content analysis of various sources were used. Empirical studies used methods for analyzing corporate websites.

At the initial stage, the development of digital technologies was determined by the development of methods for analog-to-digital signal conversion, the creation and introduction of computer-aided manufacturing systems. During this period, customer databases and CRM systems evolved in marketing activities. The second stage was associated with the development of computer networks and, above all, the Internet, the emergence of means of interaction and communication in the digital environment. A new thread originates in marketing titled “Internet marketing”.

The third stage taking place today, titled “digital transformation”, is considered as a process aimed at improving the competitive edge of a company by introducing innovative changes in its activities through the development of digital technologies. In marketing, it is characterized by significant changes in product and pricing policies, distribution and sales systems, integrated marketing communications, occurring under the influence of business transition to the digital environment.

Changing priorities in technology development cause a corresponding change in digital transformation trends. Until recently, the emergence of new models of smartphones with enhanced functionality, 4G and 5G technologies, Wi-Fi, the Internet of Things, unmanned vehicles, virtual and augmented reality technologies, metaverses were a priority [Bagiev, Yanenko M.B., Yanenko M.E., 2022, p. 98]. Currently, the business focuses on interaction with consumers in the digital environment, sales on digital business platforms (DBP), and artificial intelligence (AI) technologies. The theoretical background of DBP is the concept of multi-sided markets, according to which the platform interacts with several groups of participants (sellers, buyers) simultaneously.

The results of the study show that a large number of enterprises and organizations that form the ecosystem of the digital economy are involved in the development of digital technologies. Traditionally, when assessing the digital economy, four large segments are considered: e-commerce, online advertising and marketing, infrastructure and digital content (the “digital contour” of the Russian economy). The largest segment is e-commerce. The newly emerged new category of “digital goods” is rapidly growing in it, including software, subscriptions to streaming services and gaming platforms, e-books, videos, and audio files. In Russia its share has already reached 4.4%. In global trade, digital goods and services make up 37% of online purchases¹.

As online trading develops, the consumer increasingly first becomes acquainted not with a physical product at a land-based retail outlet, but with an image of the product on the website of the manufacturer or seller [Singh, et al, 2022, p. 462]. Virtual and augmented reality technologies allow customers to change their image by trying on clothes, cosmetics, and accessories in a digital environment before making a purchasing decision. The development of metaverses resulted in a

¹ White Book on Digital Economy (2022). ANO “Digital Economy”. URL: https://files.data-economy.ru/Docs/White_Book.pdf (access date: 16.04.2023).

situation where already 23% of buyers use them to make purchases. Digital and virtual goods and services in gaming metaverses are purchased by 57% of gamers¹.

The data provided evidence that buyers make active use of digital devices to compare products and prices in offline stores and on online platforms. To successfully develop digital channels of interaction and sales, it is required to create an attractive image of a product, brand, or company in the digital environment.

According to Tinkoff eCommerce, the Russian Internet audience has reached 100 million people (about 90% of households). The sales turnover of the largest Russian marketplaces and aggregators (Wildberries, Ozon, Yandex, AliExpress Russia and SberMarket) amounted to 2.5 trillion rubles in 2021. 3.5 million people (4.9% of all employed in the country) use DBP in their work². Thanks to the opening of new order pickup outlets in the regions, which increased by 72%, the share of regional entrepreneurs on marketplaces grew to 67%. This has improved the availability of goods offered by marketplaces in the regions³.

A competitive advantage is multichannel sales, which allows combining direct sales made on brand websites (D2C), delivery services, marketplaces, and online platforms. It allows improving the level of service, customer experience, and security of purchases [Rangaswamy et al, 2020, p. 74].

To interact with consumers and promote goods and services, companies are increasingly using artificial intelligence (AI) technologies. In most cases, AI includes technologies for text manipulation, pattern recognition and image processing, voice processing, and decision making. In marketing activities, AI is increasingly used in creating content, forecasting demand, and personalizing offers. It allows not only to reduce costs, but also to increase the enterprise efficiency by completing recurring tasks.

The analysis of trends in the development of digital technologies and their application in marketing shows that digital technologies play a critical role in interaction with consumers. They have significantly expanded the toolkit of product policy, allowing the creation of “smart” products with unique characteristics and competitive advantages. The supply of digital goods and services, which are a collection of data and programs offered in the form of a product, is growing. Virtual goods emerge in the virtual environment and metaspacial business structures, that are created and in demand in the metaverse to satisfy new digital human needs. It has been established that in the digital marketing complex, an essential role is being assigned to the digital image of the product.

Reducing unit costs for storage, processing, data transmission, and increasing the productivity of software and hardware opens up the possibility of providing additional value through related services in the digital and virtual environment. Features of pricing policy in the metaspaces are associated with the need to keep in mind two components of value for the consumer – value in the real world, and value of digital products and services in the virtual world. An economy of creators is evolving. Its business models are focused on artistic people creating digital products (software, content, etc.).

¹ Changes in Online Trading Market in 2023. Infographics URL: https://www.rbc.ru/technology_and_media/12/02/2024 (access date: 27.03.2024).

² Abdrakhmanova G.I., Gokhberg L.M., Demyanova A.V., et al. (2023). Platform Economy in Russia: Development Potential: Analytical Report. Gokhberg L.M., Glazkov B.M., Rudnik P.B., Abdrakhmanova G.I. (Eds.); National Research University Higher School of Economics. Moscow: HSE Institute for Statistical Studies and Economics of Knowledge (ISSEK). 72 p.

³ Internet Trading Market in Russia. URL: <https://akit.ru/analytics/analyt-data> (access date: 27.03.2024).

Digital technologies have not only become the basis for automating manufacturing processes, but have also changed approaches to managing distribution and delivery systems. A significant share of Internet resources is associated with sales of goods and services, electronic payments, commercial activities, and bank account management. The development of electronic trading platforms, marketplaces, and digital business platforms has resulted in the emergence of a platform economy.

However, the processes of establishing consumer values and reasonable consumption in a virtual environment have not yet been studied enough. Existing examples of transactions for the sale of digital assets (virtual land plots and premises, clothing of authors) emphasize the need for in-depth studies of value preferences in a digital environment that combines the real world and virtual reality.

Thus, considering digital transformation as a key direction in the transition to noonomy, when developing marketing strategies, one should take into account continuous changes in trends in the development of digital technologies. The acquisition of interaction skills in the digital environment by consumers makes it necessary to pay special attention to the creation and promotion of a digital image, product, brand, company. To ensure multichannel selling, it is advisable to use marketplaces, digital business platforms and ecosystems, including the capabilities of artificial intelligence technologies. In the context of growing Internet audience and digital consumption, one of the topical areas of further studies is the problem of changing consumer values; the emergence of new values associated with interaction in the digital environment; expanding interactive interaction with the consumer.

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INTERNATIONAL CONTEST “THEORY OF NOONOMY AS A KEY TO THE RESEARCH ON SOCIO-ECONOMIC TRANSFORMATIONS OF THE 21ST CENTURY”

On April 24, 2024, the final of the 1st International Contest of Research Works of Young Scientists and Students “Theory of Noonomy as a Key to the Research on Socio-Economic Transformations of the 21st Century” took place. The results of the contest were announced at the Ural State Economic University.

Organizers of the Contest: S.Y. Witte Institute for New Industrial Development, Free Economic Society of Russia (VEO of Russia), Ural State Economic University, Noonomy Center of Science and Education of the Ural State Economic University, Ural branch of the Free Economic Society of Russia (VEO of Russia).

The chairperson of the contest expert commission was S.D. Bodrunov, Corresponding Member of the Russian Academy of Sciences, President of the Free Economic Society of Russia, Director of the S.Y. Witte Institute for New Industrial Development, Doctor of Economics, Professor.

The scientific director of the contest was S.G. Pyankova, Deputy Head of the Noonomy Center of Science and Education, Vice-President of the Ural branch of the VEO of Russia, Professor at the Department of Regional, Municipal Economics and Management of USUE, Doctor of Economics.

The contest was held in two phases. It included 70 participants from Yekaterinburg, Moscow, St. Petersburg, Chelyabinsk, Perm, Volgograd, Shadrinsk, Veliky Novgorod, Penza and other cities. 11 universities were participating, among which were the following: St. Petersburg State Economic University, Peter the Great St. Petersburg Polytechnic University, Plekhanov Russian University of Economics, Ural State Economic University, Ural Institute of Management – the branch of the Russian Presidential Academy of National Economy and Public Administration, Yaroslav-the-Wise Novgorod State University, Volgograd State Technical University, Shadrinsk State Pedagogical University, Penza State University and others.

The research in submitted works is dedicated to studying human qualities development in a noosociety, sharing relations in the Russian Federation, the prerequisites for the formation of a noosociety in the Eurasian Economic Union, the emergence of simulative and non-simulative needs, the influence of modern technologies on various aspects of the socio-economic system, and other topics.

27 participants became contestants in the second phase. The carried out research resulted in valuable practical recommendations. Thus, one of the finalists’ works dedicated to production science and education integration contains a conclusion about the need of educational reform, creation of a regulatory framework that can serve as the foundation for interaction between educational institutions and business. The study of another finalist focuses on maintaining the advantage of the Russian Federation on the world stage through the development of innovative potential and creation of knowledge-intensive technologies, production modernization, implementation of digital technologies and artificial intelligence. As it is emphasized in the work, all these aspects of development are the factors in the formation of a “noosociety”, where knowledge, not material resources, plays a key role. Recommendations regarding improving the environmental situation include tightening environmental legislation, active tree planting, and landscaping. A large part of the research was devoted to the spiritual development both individually and as a society in general during the transformation period. The study emphasizes the need to form new

values and improve interpersonal interactions during a successful transition to a noosociety. In practice, it is possible to establish new sociocultural connections through the use of noonomy principles when developing advancement strategies by government agencies, which is proposed in one of the works.

The winners of the International Contest of Research Works of Young Scientists and Students “Theory of Noonomy as a Key to the Research on Socio-Economic Transformations of the 21st Century” are:

1st prize winners:

Utkin Alexander Ivanovich, Solbakov Roman Konstantinovich, St. Petersburg State Economic University. Topic: “Simulative and Non-simulative Needs in Noonomy”.

Huseynli Kamal Mubariz ogly, Ural State Economic University. Topic: “Noonomy as a Factor in Increasing the Competitiveness of a University in the Context of Noo-Transformation”.

2nd prize

Korostelev Alexander Olegovich, Udalov Ivan Sergeevich, Plekhanov Russian University of Economics. Topic: “Noonomy as a Science of the 6th Technological Order”.

3rd prize

Dobrenky Dmitry Olegovich, Lyubimova Irina Romanovna, Kazantsev Dmitry Sergeevich, Ural State Economic University. Topic: “Integration of Production, Science and Education: USEU Experience”.



S.D. BODRUNOV, THE CORRESPONDING MEMBER OF THE RUSSIAN ACADEMY OF SCIENCES, DELIVERS A CLOSING LECTURE AT THE M.V. LOMONOSOV MOSCOW STATE UNIVERSITY

On April 24, 2024, at the Department of Philosophy of the M.V. Lomonosov Moscow State University, Director of S.Y. Witte Institute for New Industrial Development (INID), President of the Free Economic Society (VEO of Russia), Corresponding Member of the Russian Academy of Sciences, Professor, Curator of the cross-faculty course “Global Transformation: Technology, Economics, Human (General Theory of Noonomy)”, **S.D. Bodrunov** delivered a closing summarizing lecture on the topic of the “Issues of Societal Transformation and Noonomy”.

The lecture received many positive responses and aroused keen interest among listeners, including students and graduate students of Economics, Mechanics and Mathematics, Physics, History, Chemistry, Sociology and Philosophy Departments of Moscow State University, as well as students of the Moscow School of Economics (MSE of MSU), Higher School of Cultural Policy and Public Administration, Faculty of Space Research and Public Administration of MSU.

The course “Global Transformation: Technology, Economics, Human (General Theory of Noonomy)” will be taught in the next academic year as well.

The course was initiated and conducted for students by the researchers of the Scientific and Educational Center for Contemporary Marxist Research, Department of Philosophy, Moscow State University: L.A. Bulavka-Buzgalina, Doctor of Philosophy, Professor, A.I. Kolganov, Doctor of Economics, Professor, N.G. Yakovleva, Doctor of Economics, Associate Professor, O.V. Barashkova, and G.A. Maslov, Candidate of Economics.

Following the completion of the course, a textbook is to be published.



The S.Y. Witte Institute for New Industrial Development is preparing a new book for publication titled *The Integral Economics of John Kenneth Galbraith (1933-1983)* (by French researcher Alexandre Chirat) [*Alexandre Chirat. L'economie integrale de John Kenneth Galbraith (1933-1983)*] in the “Modern Economic Thought” series. S.D. Bodrunov, Corresponding Member of the Russian Academy of Sciences, is the editor of the Russian edition of the book.

Below is the Foreword by S.D. Bodrunov to this book.

*From the Editorial Board
Noonomy and Noosociety.
Almanac of Scientific Works of the S.Y. Witte INID*

Sergey D. Bodrunov

Foreword to the Russian edition of the book
The Integral Economics of John Kenneth Galbraith (1933–1983)
by Alexandre Chirat [Alexandre Chirat. L'économie intégrale
de John Kenneth Galbraith (1933–1983)]

The decision of the S.Y. Witte Institute for New Industrial Development (INID) to publish the Russian translation of Alexander Chirat's book *The Integral Economics of John Kenneth Galbraith (1933–1983)* [Alexandre Chirat. L'économie Intégrale De John Kenneth Galbraith (1933–1983)]¹ arose under the influence of a number of circumstances.

John C. Galbraith's research has long attracted the interest of the S.Y. Witte INID. The Institute has already published a Russian translation of John K. Galbraith's book *The Affluent Society*² and a number of publications dedicated to his scientific contribution. A detailed analysis of John K. Galbraith's ideas was also given in *Galbraith: Return*³, a large monograph published by the institute in 2018 in Russian and English. This attention is not accidental. S.Y. Witte INID focuses on the impact of technological shifts on socio-economic development, long-term aftermaths included. Therefore, in the process of our scientific development, we could not ignore those scientific works of John K. Galbraith, which also examine the influence of the advancement of new industrial technologies on the formation of an entire social system. This is especially true for Galbraith's book *The New Industrial State*⁴.

It is particularly important for us that John K. Galbraith does not simply highlight this or that impact of technological development on the state of society. His research focuses on deep, significant changes in engineering and technology, which create new institutional forms of production using these technologies, and, ultimately, lead to the transition of all social relations and society as a whole to a qualitatively new state.

This approach echoes our own desire to assess the long-term consequences of the modern technological revolution, and on this basis develop a reasonable forecast for a transition to a new stage of social development. Such research allowed us to develop the concept of the formation of a "new industrial society of the second generation" (NIS 2.0), based on the dissemination of technologies of the 6th and formulating the 7th technological order, which create the prerequisites for changing the role of man in the economy and in the social system in general.

The study of these very shifts in the role of a person in the economy allowed us to put forward a theory of the transition from economy to noonomy, according to which a person, leaving the sphere of direct participation in production processes, changes the criteria of his production activity. A person gets rid of the dominance of economic necessity and economic rationality and puts the achievement of the most favorable conditions for his own development at the forefront.

¹ Chirat A. (2022). *L'Économie Intégrale de John Kenneth Galbraith (1933-1983)*. Classiques Garnier Multimedia. 1073 pp.

² Galbraith J. K. (2018). *The Affluent Society*. Trans. from English, S.D. Bodrunov (Ed.). Moscow: Olimp-Business. S.Y. Witte INID series "Modern Economic Thought". 404 p.

³ Bodrunov S.D., Galbraith J.K., Sorokin S.D., Tsagolov G.N., et al. (2017). *Galbraith: Return*. S.D. Bodrunov (Ed.). Moscow: Kul'turnaya revolyutsiya. 372 p.

⁴ Galbraith J.K. (1967/2004) *The New Industrial State*. Boston: Houghton Mifflin. 317 pp.; Moscow: OOO AST Publishing House: OOO Transitskniga; St. Petersburg: Terra Fantastica. 602 p.

Therefore, we are very close to the approach of John K. Galbraith, who never limited the study of economic processes exclusively to the observation of traditional micro- and macroeconomic categories. What is characteristic for him is a broader view of economic reality, where there is room for understanding the role of technology and institutional conditions of human activity, their influence on the structure of society, on human behavior in the economic system, etc. The Russian translation of Alexandre Chirat's book, as we see it, precisely shows the originality of Galbraith's approach to socio-economic reality, which has significant points of contact with our own approaches.

Not the least role in the decision to publish the Russian translation played the recommendation of James K. Galbraith, according to whom the Academic Council of the S.Y. Witte INID drew its attention to the book *Integral Economics of John Kenneth Galbraith (1933-1983)* and decided to publish it in Russian as part of the S.Y. Witte INID series "Modern Economic Thought" to give Russian readers the opportunity to become familiar with it.

James K. Galbraith is our longtime friend and colleague. Together we conducted a number of studies, and two books were published (in Russian and English): *New Industrial Revolution and Inequality Issues: A Study Guide*¹ by S.D. Bodrunov and J.K. Galbraith, and *The Concept of the New Industrial Society: History and Development* by S.D. Bodrunov and J.K. Galbraith². Therefore, his opinion is of undoubted significance for us. And if not him, who can best evaluate the quality of a book dedicated to the scientific heritage of his father?

We hope that the Russian edition of Alexandre Chirat's book about John Kenneth Galbraith will serve not only to educate Russian readers, but will give an additional impetus to the research carried out at the S.Y. Witte INID as well. The Institute intends to continue the line of research devoted to the impact of engineering and technology development on socio-economic institutions and on the entire structure of society, both in relation to Russia and in the global context. These studies will continue to address not only the immediate problems of socio-economic development, but also the strategic vision of the prospects for human civilization. John K. Galbraith was also thinking about these questions, and that is why the dialogue with the theoretical legacy of this outstanding scientist is so important to us.

¹ Bodrunov S., Galbraith J.K. (2017). *New Industrial Revolution and Inequality Issues: A Study Guide*. S.D. Bodrunov (Ed.). Moscow: Plekhanov Russian University of Economics. 122 pp.

² Bodrunov S., Galbraith J.K. (2018) *The Concept of the New Industrial Society: History and Development*. S.D. Bodrunov (Ed.). Yekaterinburg: Ural State University of Economics. 114 pp.

Scientific publication

NOONOMY AND NOOSOCIETY

ALMANAC OF SCIENTIFIC WORKS OF THE S.Y. WITTE INID

Vol 3, No. 1

2024

Editors-in-Chief

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Z.R. Khabibullina

The journal uses materials of the S.Y.Witte Institute for New Industrial Development (INID) presented at scientific seminars and conferences of the S.Y.Witte INID and represent a concentrated collection of publications on the concept of a new industrial society of the second generation and the theory of Noonomy developed by the S.Y.Witte INID together with the Russian and international scientific community

Editorial and publisher's address:

16 B. Monetnaya St., St. Petersburg, 197101

Phone: +7 (812) 313-82-68, e-mail: noonomy@inir.ru

Signed for publication on May, 02, 2024.

Format 60×84/8. Offset paper.

Printed sheets 10,75. Conditional printed sheets 10,00.

Circulation 1000 pcs. Order 11134/2



Free price

Xi-Print Limited Liability

36 Babushkina St., St. Petersburg, 192029



S.Y. WITTE INSTITUTE FOR NEW INDUSTRIAL DEVELOPMENT (INID)