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**THE TECHNOLOGICAL REVOLUTION:
THE NEED AND OPPORTUNITY FOR QUALITATIVE CHANGE
IN SOCIO-ECONOMIC DEVELOPMENT
(Discussions on S.D. Bodrunov's book *Noonomy*)**

The work of Russian scholars rarely finds much resonance in the international community. This is all the more true for books published in Russian and presented to the English-speaking public only in the form of a manuscript translated into English. All the more significant is such an exception as the book *Noonomy* by S.D. Bodrunov [Bodrunov, 2018]. This book and the series of articles based on it in leading academic journals have not only received wide recognition in Russia, but have also been the subject of discussions at international seminars in Cambridge, St. Petersburg, New York, Beijing and Moscow. In 2018, the book was awarded the Outstanding Contribution to the Political Economy of the 21st Century Award by the World Political Economy Association in Berlin. In the years that followed, attention to this book has not diminished at all, and it has been translated into several languages (besides English, also Portuguese, Spanish, Croatian, Hebrew and Belarusian) and published in Brazil [Bodrunov, 2022b], Mexico [Bodrunov, 2020], Croatia [Bodrunov, 2022a], Belarus [Badrunoŭ, 2021] and Israel [בודרונוב, 2022]. Synopsis of *Noonomy* has been published in Chinese, and a full translation of the book is now being prepared for publication in the PRC.

What is the reason for this? Yes, the author is a well-known scientist and public figure, corresponding member of the Russian Academy of Sciences, president of the Free Economic Society of Russia, the largest (more than 300,000 members) and oldest (founded in the 18th century!) public organisation in the country, a professor. But it is not only and not so much about the author's fame, but about the content of the concept proposed by this scientist – a large-scale, pioneering, future-oriented concept, which is also based on the generalisation of a wide range of empirical material well known to the author, who is not only an academic scientist, but also the head of one of the few large high-tech complexes in Russia. Thus, the book could not only arouse interest but also generate active controversy.

The main idea of the book is the emergence of the 4th technological revolution and the increasing growth of knowledge-intensive production as the basis of a qualitatively new social system based on a non-economic way of satisfying people's reasonable needs – Noonomy. Bodrunov's book differs significantly from the works of post-industrial theorists, as the author of *Noonomy* sees the basis of the future not in the denial of the leading role of material production, but in the emergence of its new quality – knowledge-intensive industrial production, in which knowledge becomes the main source of development, science becomes a direct productive force, and culture, which shapes people, and education “through life” become prerequisites for effective productive activity.

Our civilisation is on the threshold of a qualitative leap: man will gradually “go beyond material production” and become its “master and regulator”, as Karl Marx predicted. Knowledge, rath-

er than material resources, will be the main source of production. Simulative needs will gradually fade into the background and be replaced by the need for knowledge; the system of inequality of property will be replaced by a system of inequality of abilities and talents; humanity will not be oriented towards increasing the volume of consumption, but towards the development of human abilities, the progress of the mind and culture. And the traditional categories and laws of economics (value, property, money, etc.) will gradually lose their familiar meaning in the coming future, if not disappear altogether. The problems of time economy and the efficient use of resources will be more technical than social. Increasingly, they will no longer be solved by people directly, but by an external construction (in terms of human society) – an “unloving”, autonomous, self-regulating technosphere.

This is not a prediction of a very distant future, but a statement of the changes that have already begun: the birth not only of an economy, but of a qualitatively new phenomenon: *Noonomy*.

How did the scientific community react to this concept?

In the following we would like to summarise the statements made by some leading scholars from all over the world during discussions about the book at international forums, conferences and seminars in Moscow, St. Petersburg, Beijing, Cambridge, New York and Berlin.

In Russia, the theses of the author, who has repeatedly criticised “market fundamentalism”, have naturally provoked a mixed reaction. The proponents of the monetarist line have not supported the author’s ideas. But their opponents, notably **Sergey Glaziev**, an academician of the Russian Academy of Sciences and advisor to the president of the Russian Federation, publicly praised Bodrunov’s developments: “The theory of Noonomy shows us the way to a future without forced labour, poverty and hostility over scarce resources. Many thinkers have dreamed of such a society, but the attempts to build it could not succeed without an appropriate technological foundation. Sergey Bodrunov shows how the combination of rapidly growing technological capabilities with a mature spiritual culture can lead humanity out of the realm of necessity and into the realm of freedom, provided that man becomes truly intelligent.».

The work also became the subject of polemics with scholars who hold unequivocally Marxist positions and who, in contrast to Sergey Bodrunov, believe that the road to the future is not an evolutionary process conditioned by technological progress, but a space of not only socio-economic but also political struggles leading to social revolution and the formation of a qualitatively new – communist – social system. The polemic on this issue between the author of Noonomy and professor of Moscow State University **Alexander Buzgalin** and his followers took place more than once at the forums in Moscow and St. Petersburg.

Another participant in the Moscow and St. Petersburg discussions – **James Kenneth Galbraith**, professor at the University of Texas at Austin and son of the famous author of *The New Industrial State* – assessed the work differently. According to him, “Sergey Bodrunov’s monograph is a fundamental study of the sources of wealth and the need to integrate technology and culture in creating a knowledge-based economy in the face of environmental challenges and limited resources. Western readers will be particularly interested in how Sergey Bodrunov synthesises Russian and Western economic concepts, including ideas from the works of my father John K. Galbraith, in the development of his theory. *Noonomy* is a benchmark for transnational and intercultural scientific analysis.”

The work has also been highly praised in China. For example, **Chen Enfu**, Academician of the Chinese Academy of Social Sciences and President of the World Political Economy Association, stressed that Professor Bodrunov is the leading exponent in Russia and the world of the ideas of transition from the new industrial economy to a new quality of social life, which he called Noonomy. The academic emphasised Professor Bodrunov's practical conclusion: Russia needs a course of socio-economic progress that makes critical use of the experience of China and the Northern European countries – the introduction of an effective planning system in combination with the market. China and Russia should push back the influence of neoliberal economics, strengthen all-round strategic cooperation in developing a new generation of industrialisation and Noonomy, jointly oppose economic hegemonism and act for the benefit of the people of their countries and the world.

It may seem paradoxical, but one of the best-known theorists of the “left spectrum” in the world and director of the Third World Forum, **Samir Amin**, who participated in the discussion of Bodrunov's work, supported the conclusion of his Chinese colleagues rather than Buzgalin's radical view and commented very positively on Bodrunov's book: “This book is very informative. The author has a fine and extremely useful sense of historical changes and trends that condition the development of society. The concept vividly illustrates Marx's idea that the coming transition to communism represents a higher stage of social development.”

Despite the polemical nature of the book, some of its points have left little doubt. This includes the critique of post-industrial concepts. Professor Radika Desai (Canada) emphasised this point in her presentation at a seminar in Cambridge. She agreed with Professor Bodrunov that some of the accepted assessments of the post-industrial economy must be rejected. Professor Desai also supported Bodrunov's thesis of the centrality of production.

“The approach presented in Noonomy,” she continued, “reflects a deeper understanding of the issue than the transition from one form of capitalism to another. According to Bodrunov, what is happening now requires a transition to a completely different form of society. In other words, technological change is currently at a critical stage. The old paradigm is dying out and new paradigms are not yet born. And the reason new paradigms are not born is that our society is still dominated by the structures of capitalist production, which I would like to understand not only as production for profit, which it is, but also in a broader sense as production of value. As far as the specific content of this transition is concerned, it should be emphasised that the production of creative services is increasing, i.e. there is progress in the creative content of production.

As far as knowledge production is concerned, I do not think there is an ‘economy of ignorance’, we have always existed in an economy of knowledge. From the moment the first man threw the first stone at the first animal, he was already using knowledge, or some kind of technology and knowledge. It is not a question of having knowledge. We need to evolve, and the necessary transition that Professor Bodrunov talks about requires that we take seriously the production of more knowledge, more creativity. This transition is blocked by capitalism.”

Radika Desai concludes by pointing out that Professor Bodrunov is right to point out the difficulty of using GDP to assess the state of the world economy. “If we consider Noonomy as a modern form of Marxist economics, we should assess economic growth by indicators of the quality of life of individuals: level of education, length of schooling, health status, access to cultural values, that should be the measure of economic growth.”

David Kotz, Professor Emeritus of the Department of Economics at the University of Massachusetts in Amherst (USA), analysed Sergei Bodrunov's *Noonomy* and stated, “This interesting

book looks at the consequences of current trends in technological development of the economy and society. The author rejects the common view that the increasing role of the information component has displaced material production; he believes that progress in information processing has changed material production. The author pays tribute to John Kenneth Galbraith's ideas on the primacy of technology and expertise in the modern economy in this thought-provoking and debatable work. "Bodrunov's critique of contemporary global capitalism is absolutely valid and his proposals for Russia's development are more relevant than ever," concludes Professor Kotz.

Emeritus Professor of Sociology at Emmanuel College, Cambridge University, **David Lane** (UK), analysed Bodrunov's book from the perspective of the social problems of development. He emphasised that "Noonomy critically develops the theories of J.K. Galbraith and M. Castells on the transition of capitalist society to a new social order". What is new about Bodrunov's approach, however, is that he looks at this transition from the perspective of nooproduction and Noonomy. The book contains a lot of useful and interesting information derived from numerous reference materials. The author provides a critical assessment of neoliberal economic fundamentalism by analysing numerous sources. According to S.D. Bodrunov, the development of the knowledge economy, digital and cognitive technologies, is closely linked to the emergence of a new kind of civilisation. The book emphasises the importance of understanding the role of future technologies and the opportunities they offer for the further development of society. The author touches on fundamental problems not only in economics, but also in public policy, especially with regard to environmental protection. It is particularly noteworthy that Sergey Bodrunov justifies the need for Russia's reindustrialisation and emphasises that the movement in this direction should be based on modern trends and the development of new technologies".

The book launch seminar, organised by the journal *Science and Society* in New York, addressed other aspects of Bodrunov's book. The most important of these was the question of technological determinism. We emphasise that this was also one of the main topics of discussion at the Cambridge seminar we reported on above.

This question was raised in particular by Professor **David Laibman**, Editor-in-Chief of *Science and Society*. In his speech, he emphasised that "Professor Bodrunov's special quality is that he always thinks globally", noting, "But I was under the impression that the transition he is talking about is technology-based and that we need to keep up with all the technological changes and so on. Technological progress has many forms and formats, but Noonomy is about overtaking development, about what is being accelerated. This approach seems to me to be somewhat out of context, because one must necessarily look at the social system as a whole. Do we need to accelerate change? What is an appropriate pace of innovation, an appropriate pace of change? Acceleration can be seen as synonymous with proletarianisation, because the working class of today works in information technology. But is technological change enough to change social relations as well?"

"The second thing I wanted to note about the book," Professor Laibman continued, "is the emphasis on strengthening the role of knowledge and reducing the role of material in the production process. This raises the question: How is the weight of knowledge measured? Is knowledge a direct component of material production? In what way can its share be measured? We could, for example, compare the current situation with the development of modern information technology with the industrial production of the last century. We could try to ask what is the balance between knowledge and material production. Has modern material production become less material? Is it less dependent on materials? Or have we moved into the immaterial realm?"

David Laibman has asked the question for Russia: “Why can not this country realise its potential? Why does the economy continue to work with the commodity model? Professor Bodrunov has an answer to these questions. The situation in Russia is as follows: The oligarchic elite is afraid of the neo-industrialisation that Professor Bodrunov talks about. They are afraid of it, and they are afraid because the new technology will necessarily require a revision of skills, abilities, education, etc. The development of civil society needs to be boosted.

Another question is whether Noonomy is a hidden, implicit expression of what Marx would have called a higher stage, communism.

These critical questions from an American colleague caused quite a controversy and the author promised to answer them in detail in later publications.

S.D. Bodrunov attempted to answer these questions in a number of his later publications. In the short time that has passed since the above discussions, S.D. Bodrunov has produced a number of new publications. These are: the textbook *General Theory of Noonomy* [Bodrunov, 2019], monograph *Noonomy: trajectory of global transformation* [Bodrunov, 2020b], monograph co-authored with Academician V.L. Kvint *Strategizing Society Transformation: knowledge, technology, Noonomy* [Kvint, Bodrunov, 2021], which has already been translated into English [Kvint, Bodrunov, 2022] and the joint book *Beyond the Global Crisis: Noonomy, Creativity, Geopolitical Economy* with Radica Desai and Alan Freeman [Bodrunov, Desai, Freeman, 2022]. Thus, the idea of Noonomy not only attracts the interest of famous researchers, but also becomes the object of direct scientific cooperation and the basis for new training courses.

In addition to these foundational works, Bodrunov has published a number of articles in various academic journals in Russia and abroad¹, reflecting a range of ideas that have not been addressed, or have been inadequately addressed, in his books. Such intensive research work provides rich material for further academic interactions. And we should expect that in the years to come we will not pay so much attention to the reviews of S.D. Bodrunov’s works, but rather to how his ideas begin to enrich and live an independent life in the scientific community.

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¹ See, for example: [Bodrunov, 2020a; Bodrunov, 2020c; Bodrunov, 2021a; Bodrunov, 2021b; Bodrunov, 2022a; Bodrunov, 2022b; Bodrunov, 2021; Bodrunov, 2022c;] etc.

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