



The Impact of the Digital Revolution on the Paradigm Shift in the Economic Development

El impacto de la revolución digital en el cambio de paradigma en el desarrollo económico

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ABSTRACT:

The purpose of this paper is to validate the hypothesis that the shift to the digital economy is not another change of a technological trend (via, say, the 4th industrial revolution) but a change in the paradigm of the economic development that entails changes in the nature of labor division, the way of interaction among business entities, and the basis of economic power. Methods. A combination of the historical, evolutionary, and institutional methods of research has been used. Conclusion and significance. The transformation of the paradigm of economic development is characterized by changes in the nature of labor division, the dominant way of interaction among business entities, and the basis of economic power. Changes in the nature of labor division imply intellectual and organizational centers getting separated from production and service departments. Changes in the dominant way of interaction among business entities imply the gradual

RESUMEN:

El propósito de este trabajo es validar la hipótesis de que el cambio a la economía digital no es otro cambio de una tendencia tecnológica (por ejemplo, a través de la cuarta revolución industrial), sino un cambio en el paradigma del desarrollo económico que implica cambios en la naturaleza de la división del trabajo, la forma de interacción entre las entidades comerciales y la base del poder económico. Métodos. Se ha utilizado una combinación de métodos de investigación históricos, evolutivos e institucionales. Conclusión y significado La transformación del paradigma del desarrollo económico se caracteriza por cambios en la naturaleza de la división del trabajo, la forma dominante de interacción entre las entidades comerciales y la base del poder económico. Los cambios en la naturaleza de la división laboral implican que los centros intelectuales y organizacionales se separen de los departamentos de producción y servicio. Los

displacement of the free market as the leading way of interfirm interaction by value networks. Property ownership, in a classical sense, is ceasing to be the main foundation of economic power, its place being increasingly taken over by a status in the hierarchy of the field of interaction that enables one to establish the rules for interaction and distribute added value.

Keywords: digital economy, digital revolution, paradigm of economic development, labor division, economic power

cambios en la forma dominante de interacción entre las entidades comerciales implican el desplazamiento gradual del mercado libre como la forma principal de interacción entre las empresas por parte de las redes de valores. La propiedad de la propiedad, en un sentido clásico, deja de ser la base principal del poder económico, y su lugar se ve cada vez más asumido por un estatus en la jerarquía del campo de interacción que permite establecer las reglas para la interacción y distribuir el valor agregado.

Palabras clave: economía digital, revolución digital, paradigma del desarrollo económico, división laboral, poder económico

1. Introduction

Recently, the term 'digital economy' has been often used within the scientific community, in many economic forums, and in the press. Information and communication technologies are penetrating today into all areas of our life, with increasingly wider use being made of cyber-physical systems, which are capable of initiating an action and controlling operations on their own. In the view of Executive Chairman of the World Economic Forum Klaus Schwab, "The changes are so profound that, from the perspective of human history, there has never been a time of greater promise or potential risks" (Schwab, 2016).

Having realized the radicalness of upcoming changes, many nations are already engaged in developing "roadmaps" or state strategies for the development of a digital economy. Some of the examples include Digital Economy (USA), Internet Economy (China), Industrie 4.0 (Germany), and Technet (Russia).

From the technological viewpoint, digital economy is a result of overlap in fundamental breakthroughs in the development of many sectors of intellectual activity, including: the creation of cyber-physical and cyber-biological systems, whole new materials, new means of production, information technologies, genetic engineering, renewable sources of energy, etc. The shift to the digital economy is characterized by technological explosions, which are referred to the combination of technologies that enable creating new products and services that, on the one hand, create and put in place new spheres of activity and, on the other hand, eliminate or radically transform existing sectors of the economy.

Technical development is of an exponential nature: each year advanced technology is getting increasingly more streamlined and their physical embodiment gets higher quality (material carriers of information getting smaller in size and cheaper but a lot more capacious and several orders of magnitude faster in processing speed). When it comes to information that has been amassed around the world, things are even more "explosive": timeframes needed for twofold increases in information are getting increasingly smaller. The robust development of information and communication technologies (ICTs), coupled with the spread of the Internet, has led to the emergence of a new concept – 'big data' (a set of approaches, methods, and tools for the analysis of large volumes of structured and unstructured data).

Revolutionary changes taking place within many traditional sectors and the concurrent emergence of new areas and potential for the development of human activity are making it impossible to accurately predict the future, which depends on not just the degree of radicalness of technological changes and the pace at which things are getting streamlined and spread around, but institutional support for these processes as well. That being said, one can already now list some of the significant characteristics of digital economy, which are as follows:

- ICTs getting turned into general-purpose technologies. General-purpose technologies (GPTs) are technologies that lend themselves to multiple enhancements and various types of use, can be utilized within many sectors of economy, and are capable of combining with other technologies, providing considerable boosts to their efficiency;

- information support for decision making getting streamlined thanks to remote real-time access to information and functionality for processing large volume of data; this is changing the logic underlying the organization of the management process on the level of both business and the state;
- the population and business shifting increasingly to online interaction and online service;
- living labor getting supplanted by robotized one; a major portion of production getting transferred to a digital format;
- a major portion of machines getting supplanted by 3D printers intended for various types of use – home, industrial, medical, construction, etc.; greater focus being placed on computerized production of new types of goods, including human organs;
- the role of office, production, and commercial spaces diminishing and participants in business interaction, which may involve anything from effecting online transactions to intrafirm distance interaction, getting dispersed territorially;
- information asymmetry declining due to greater ease of access to information and the use of advanced technology for processing it;
- Internet of Things emerging – objects with built-in electronic devices that exchange information on the state of an object in the external world or the very consumer without the person's participation;
- whole new products appearing in the market (unmanned transportation, energy storage units, etc.);
- novel – electronic – types of money emerging;
- the role of sharing economy (consumers acquiring not the goods but the rights to access and use them);
- the role of digital platforms connecting suppliers (sellers) with consumers (buyers) augmenting within the economy;
- hydrocarbons getting gradually supplanted by renewable sources of energy, with novel energy-efficient technology being developed;
- the idea of the “digital city” being turned into reality – the integrated informatization of transportation, **housing and utilities infrastructure**, etc., taking place;
- innovative biotechnology and pharmaceuticals for the effective rejuvenation and treatment of the body being developed;
- transaction costs getting reduced thanks to intermediaries getting replaced by automated network services;
- the concept of electronic government getting carried into effect;
- social ties getting globalized;
- a novel form of interaction between companies and the end consumer emerging through the creation of personalized production chains, which some term ‘on-demand economy’.

Of course, the above listed characteristics is by no means exhaustive and does not suggest an accurate definition of the term ‘digital economy’. Changes occur so fast today that it is really hard to forecast something and try to predict what precisely the development of technology will be like.

The impact of the digital economy on social-economic processes has been explored by a number of Russian and foreign researchers.

It is, above all, worth noting some of the latest researches into the digital economy and the effect of the development of information on the economy that have been conducted by E. Schmidt, D. Tapscott, K. Schwab, D. Pink, A. Sundararajan, C. Frey, M. Osborne, and others. Their research papers have focused on identifying the key characteristics of the digital economy, determining its fundamental structures, exploring the effect of processes taking place today on the future development of societies, including the efficiency of labor and quality of life, the role played by the government and the distribution of power within societies and across the world, the formation of a new type of interaction among institutions, and the emergence of novel social-economic roles.

Scholar D. Tapscott (Tapscott, 2014) views the era of the digital economy as a revolutionary phenomenon that combines new forms of the development of communication and computer technologies, as well as the development of information awareness and promotion of information with a view to creating a global form of interaction within societies and across the entire world.

E. Schmidt (Schmidt & Cohen, 2010) brings notice to the effect of communication technologies on the consumer market, the distribution of power within the state and among people, and new opportunities of cooperation and interaction among societies.

K. Schwab distributes the megatrends for a wide spectrum of technological drivers of, in his opinion, the new industrial revolution across 3 major clusters: physical (3D printing, advanced robotics), digital (interaction between things and humans via various platforms), and biological (the Human Genome Project). All three are deeply interrelated, with the “various technologies benefiting from one another based on the discoveries and progress each makes” (Schwab, 2016).

D. Pink (Pink, 2005) provides an insight into a new form of economics – the “on-demand economy”. The idea of an economy where suppliers of labor are no longer staff members in a traditional sense but independent performers of specific tasks has been discussed by A. Sundararajan (Sundararajan, 2008). The researcher has also pointed out that the concentration of advantages and values in the hands of a minor percentage of people is also due to the so-called “platform effect”, whereby organizations founded on digital technologies create networks that connect sellers and buyers of a wide range of goods and services and thereby maximize their profits through the scale effect.

C. Frey and M. Osborne (Osborne, & Frey, 2013) are focusing on the quantitative significance of the potential impact of technological innovations on unemployment. The scholars have established experimentally that the employment rate will rise in high-income cognitive and creative occupations and low-income manual labor, but it will decline considerably in medium-income monotonous standard professions.

However, most researchers still lack a clear idea of what the digital economy is as a social system and are still at a loss to predict the possible social-economic consequences of the increasingly profound technological changes taking place before our eyes at the moment. It is to investigating these issues that this work is devoted to.

2. Research Methodology

Most researches devoted to the phenomenon of the digital economy use the methodology of the technical-technological approach, which relies on the analysis of the impact of technological factors on structural shifts within the economy. The authors of this paper are using the historical-evolutionary approach, grounded in the analysis of the effect of new technologies in relation to changes in fundamental social-economic institutions.

The transformation of social-economic relations, associated with the widespread use of ICTs, is construed differently by different scientific schools. The most common approach is the technical-technological one, which regards what is going on today as another technological revolution. Note that there are various ways to denote the stage in technological development, like ‘new (6th) technological arrangement’, ‘new (4th) industrial revolution’, ‘new industrialization’, etc.

The technical-technological approach is grounded in the idea that ICTs mark another stage in the development of the mode of production, the foundations whereof were laid down during the Great Industrial Revolution. The industrial revolution itself is dated to the 2nd half of the 18th century. The symbolic countdown commences in 1771, the year Arkwright’s cotton spinning mill opened up in Cromford (Derbyshire, England). The factory is the 1st example of an industrial organization – one that combines into a single system machine-based production and water power to enable a shift from sporadic manual production to mass machine-based one.

In accordance with the concept of the unequal development of scientific-technical progress (L'vov & Glaz'ev, 1986; Perez, 2002), the period of time that may be termed the 'era of industrialization' (which started at the time of the Great Industrial Revolution and is still going on today) is characterized by the regular change of technological arrangements, which are grounded in technological revolutions cardinally altering the structure of public production. That being said, whole new technologies become general-purpose ones not as soon as they come out but with some delay (Dement'ev, 2016).

Proponents of the theory of technological arrangements have thus far identified a total of 6 such arrangements – "industrial eras". The 1st arrangement begins, in their view, alongside the industrial revolution, between the 60s and 70s of the 18th century. This is the era of the use of water power and the first machines that replaced manual labor. The 2nd arrangement is positioned as the era of steam and railroads. Its symbolic beginning is normally dated to 1829 – the year the 1st steam locomotive, Stephenson's Rocket, was tested for the Liverpool & Manchester Railway. The era of electricity, steel, and heavy engineering is the 3rd technological arrangement. It traces its origins to the launch of Carnegie's steel mill in Pittsburgh (Pennsylvania, USA). The symbolic start to the 4th technological arrangement (the era of oil and automobiles) is the launch in 1908 of the Ford Model T with an internal combustion engine, generally regarded as the first affordable automobile, its launch marking car manufacturing making the shift to mass production. Lastly, the 5th technological arrangement is called the era of microelectronics and computer science and traces its origins to the emergence of computers working on chips (1971 – Intel). Scholars have yet to reach consensus on the major content and point of origin of the 6th technological arrangement. Some researchers have focused on NBIC (Nanotechnology, Biotechnology, Information, and Cognitive Science), while others – on robotics and new energy.

The developers of the concepts of technological arrangements are of the opinion that it is possible for technologies inherent to different technological arrangements to dominate in different countries at one and the same time. On top of that, it is possible to have a concurrent combination of different technological arrangements within different spheres of activity within one single country. And countries lagging behind in the level of technological development may have chances to pull ahead when there is a change of technological arrangement (Glaz'ev, 1993).

Members of the German technological school of thought are of an opinion that is a bit different in periodization but not very much in essence, believing that this is the 4th industrial revolution (Note 1). In accordance with the German tradition, there is a sequence of industrial revolutions tracing its origins to the 2nd half of the 18th century (Zaparii & Nefedov, 2003). Under the approach, the "first industrial revolution spanned from about 1760 to around 1840. Triggered by the construction of railroads and the invention of the steam engine, it ushered in mechanical production. The second industrial revolution, which started in the late 19th century and into the early 20th century, made mass production possible, fostered by the advent of electricity and the assembly line. The third industrial revolution began in the 1960s. It is usually called the computer or digital revolution because it was catalyzed by the development of semiconductors, mainframe computing (1960s), personal computing (1970s and '80s) and the internet (1990s)" (Schwab, 2016).

In the view of K. Schwab, the 4th industrial revolution is characterized by widespread coverage of mobile internet, by smaller and more powerful sensors that have become cheaper, and by artificial intelligence and machine learning. As well as by the synthesis of physical, digital, and biological innovations.

As one can see, just like in the case of the last and penultimate technological arrangements, the fundamental technologies of the 3rd and 4th stages appear to intersect in a way. It is all about that same ICTs, which appear to form this paper's subject of study.

There is another possible alternative to the technological approach – the structural-sectoral one. These are multiple concepts about the end of industrial society, from D. Bell's post-

industrial society (Bell, 1973) to A. Toffler's "third wave" (Toffler, 1980). In accordance with the structural approach, the classification of various types of society is grounded in the criterion of a sphere of activity with the greatest share of the employed. Consequently, one differentiates between agrarian society, industrial one, and post- or super-industrial one, which is characterized by the movement of the bulk of activity into the sphere of services and intellectual (innovative) activity and transformation of scientific knowledge into an independent factor of production.

This viewpoint has been actively criticized nowadays. Proponents of the idea of "new industrial society" are claiming that the concept of denying the leading role of material production has failed to be substantiated by practice. Material production has not gone away anywhere – it has just moved to other countries. On top of that, the world's South and East have witnessed a powerful wave of industrialization, which has led to a sharp increase in the share of industrial production in those regions and, as a consequence, an increase within the world's total workforce of the share of workers and engineers employed strictly within the industrial sphere (Bodrunov, 2016).

However, the share of those employed in a particular type of activity, just like the type of engine (water, steam, internal combustion, or electric), should hardly be a cogent argument in debating the essence of processes taking place in the world. Just like the industrial revolution did not eliminate the agrarian sector but just considerably reduced its scale within the national economy of the world's top industrial powers, the new wave or new economic revolution (if it is actually taking place) presupposes not the demise of the industrial sector but the reduction of its role in public production, more specifically the reduction of the share of added value created within the sector.

It is a different story that, per se, industrial production being moved to the periphery of the world economic system is a highly significant phenomenon. But it is important to answer the following question: territorial expansion and the resulting changes in price proportions – is this the natural way of development for the existing world economic system (Wallerstein, 2001) or, rather, a manifestation of some novel underlying processes that are altering the actual paradigm of economic development?

3. Research hypothesis

The authors are of the opinion that the shift to the digital economy is not just a change of technological arrangement and/or another technological (industrial) revolution, resulting in major structural shifts within the economy, changes in price proportions, and new markets emerging, but changes in the paradigm of economic development – an economic revolution that is comparable in significance to the Neolithic (the shift to the appropriating type of the economy) and Industrial (the shift from a predominantly agricultural economy to manufacturing) revolutions.

The use of the term 'economic revolution' does not imply the leaping nature of the changes (which in all 3 cases have the nature of a gradual, accumulating shift from quantity to quality) but their radicalness – the formation of a new model for the economic development of society. In this sense, economic revolutions differ considerably from political ones, during which there first occurs a sharp change of conditions of life activity (the social paradigm of development), followed by partial restoration of the past.

4. Results and discussion

To validate a thesis about the formation of a new paradigm of economic development, the authors explored the cardinal changes associated with economic revolutions, including: changes in the nature of labor division, changes in the way of interaction among business entities, and changes in the basis of economic power. Below are some of the findings obtained by the authors.

Changes in the nature of labor division. The change of paradigm of economic development is, above all, characterized by changes in the nature of labor division. Thus, for instance, the 1st (Neolithic) economic revolution is associated with the formation of sustainable spheres of labor division – the division of the community into those engaged in valiant types of activity (cattle farming, hunting, war) and those engaged in smalltime household labor, including crop farming (Veblen, 1973).

The 2nd (Industrial) revolution is characterized by not just a shift from manual to machine labor, the formation of industry as an independent sphere of production, and the redistribution in it of the bulk of wealth created in society. Concurrently, there occurs the mass separation of production (enterprises) from household businesses. The, predominantly, subsistence economy, which does incorporate the institution of exchange (market) but where the bulk of output is produced to satisfy the needs of one's own (including the need for luxury (Sombart, 2003)), is supplanted by the market economy, where goods are produced mostly for exchange and the target function of business entities is to generate profit.

Lastly, the 3rd (digital) revolution marks the separation of organizational and intellectual centers from production and auxiliary departments and the localization of various components of the production process all across the globe – another great unbundling (Baldwin, 2011).

The changes in the nature of labor division taking place before our eyes have the following characteristics:

- the bulk of wealth created in society getting redistributed into the sphere of intellectual and organizational activity (generation and commercialization of ideas; control over value networks);
- the scale of distance interaction expanding, which enables not just the coordination and cooperation of geographically dispersed participants but also the remote management of robotized systems as well;
- the border between entrepreneurial activity and wage labor getting erased gradually; some of the risks and rights to receiving a portion of entrepreneurial profits (losses) getting passed onto the company's staff;
- the border between household businesses and firms getting erased, including via the formation of the sharing economy; household businesses penetrating into the final product market;
- the production of the bulk of consumer goods and services returning to the framework of household-level production based on enhancements to electronics. This trend is likely to augment going forward, with 3D printers expected to enable households to produce many goods on their own;
- computers and robots gradually replacing specialists in many professions, including those requiring advanced qualifications, like training, health diagnostics, performing surgeries, operating complex technical devices, etc. As a consequence, there is augmented differentiation of the nature of labor;
- living labor getting replaced by robots via the computerization and automation of the overwhelming majority of operations, including those related to decision making. As a result, if the institutional conditions of employment do not change, there is a possibility of the unemployment rate going up and the "redundant population" problem arising.

Changes in the way of economic interaction – the various forms of relationships between business entities and ways of coordinating their activity.

As was noted above, the Industrial Revolution was accompanied by a shift to the market as a primary way of coordinating economic (interfirm) interaction. K. Polanyi believed that the pre-industrial economy incorporated the institution of market exchange but was not governed by the market (Dalton, 1968). To describe the pre-industrial economy, the scholar identified the transactions of reciprocity, redistribution, household-level production, and exchange.

The market way of coordinating economic activity assumes that the interaction of economic

agents is regulated by the free market pricing mechanism – equilibrium between demand and supply based on competition among sellers and buyers striving to maximize their profits. However, even in a market-type economy price regulation is by no means the only way to coordinate economic interaction. Virtually always and everywhere it is supplemented by standardization (both in the form of formal norms *and* routines and traditions), administrative regulation (in particular, in the form of redistribution transactions), and mutual coordination (in particular, in the form of reciprocity transactions) (Dement'ev, Evsyukov, & Ustyuzhanina, 2017).

When it comes to pre-industrial type economies, there is a combination of several ways of coordinating economic interaction. Communal-type economies are dominated by reciprocity transactions and the mutual coordination mechanism (consultative coordination) inherent to them, while hierarchical-type economies, which include both feudal and planned economics, – by redistribution transactions and the administrative way of coordinating things.

The question arises: If the shift from agrarian to industrial economics was accompanied by a shift to the market as the principal way of coordinating economic interaction, then which way of coordinating economic interaction qualifies as the principal one in digital economics?

It may be about network forms of economic interaction grounded in the formation of sustainable relationships between business entities based on the continual exchange of information and cultivation of relations that are based on trust. Similar to the way the market is born in the womb of the pre-industrial economy, network forms of economic interaction are born in the womb of the industrial economy. In the view of scholar S.I. Parinov, we are talking here about going back to the communal form of governance – with a focus on expanding the potential of information exchange. “It would be logical to presume that the market and hierarchical forms emerged in response to the inability of the communal form of governance to ensure the effective servicing of the system of division of labor when it started to go beyond the commune. The reason – the limited capacity of the communication media and system of information exchange back then, which were unable to ensure a wider group of people the level of information exchange needed for the proper operation of the communal economy” (Parinov, 2002).

In other words, the development of ICTs is helping resolve the issue of direct information exchange and, accordingly, that of establishing direct ties and trust-based relations among a rather extensive group of people. We are witnessing the market as the universal way of interfirm interaction among independent manufacturers getting supplanted by network forms of cooperation, based on which the leading way of coordinating things is mutual coordination. It is worth noting that the network forms are, mainly, taking over for market – rather than intrafirm – interaction, since the mitigation of the information asymmetry problem is making it possible for not just sustainable interfirm relationships to be formed but for corporations to enlarge, as well as for the intra-corporate power vertical to get stronger (Dement'ev, Evsyukov, & Ustyuzhanina, 2017).

Changes in the basis of economic power. Usually, when analyzing various social-economic formations (modes of production), researchers focus on what to them is the principal factor of production (the principal object of property). It is commonly believed that under feudalism (the agrarian economy) this kind of factor is land (natural resources), under capitalism (the industrial economy) – means of production (capital), and in the new economy – knowledge (information) (Note 2).

The authors are inclined to believe that this kind of approach somewhat simplifies the issue of economic power, reducing it to the issue of property ownership. This simplification may be due to the temptation to explore institutions of the past and future based on the use of analogies from today. This is manifested most vividly in relation to the extensive construal of the term “property ownership”. Thus, when describing the feudal system many researchers attach a determining significance to relations of land ownership. That being said, according to T. Veblen, in medieval times “customary authority was the proximate ground to which rights, powers, and

privileges were then habitually referred. It was felt that if a clear case of devolution from a superior could be made out, the right claimed was thereby established; and any claim which could not be brought to rest on such an act, or constructive act, of devolution was felt to be in a precarious case" (Veblen, 1973). In other words, in terms of the perpetual 'power-property' dilemma the upper hand was with power. And power was based not just on coercion but a hierarchically built system of legitimization and traced its origins to God himself (Note 3).

Under those conditions, land ownership was just a concomitant condition for one's status within the social hierarchy. Its role in redistribution was secondary, since keeping some of the serf's output was, above all, based on the so-called feudal contract – restricting one's rights and liberties in exchange for protection (Note 4). The power of the feudal lord comprised 3 major components: landowner power (land ownership), economic power (servage), and political, including judicial, power. Therefore, it is hardly fair to equate corvee labor or servage with land rent. Such kind of obligations were a sort of intermediate link between communal forms of collective protection, tribute to the enthralled, and – only last of all – rent. A different story is that rent-based relations are what, over time, the feudal contract transformed into, as mankind transitioned from villeinage to copyhold tenure.

In describing the present-day economy, it may be worth expanding the "ownership" category and equating it with, essentially, the capacity to restrict the rights of other people. The term "intellectual property" is defined by the Civil Code of the Russian Federation as "protected results of intellectual activity and means of individualization equated to them" (Articles 128 and 1225), while the content of exclusive rights to an item of intellectual property is construed as the right to "use one's own discretion to allow or disallow others to make use of a result of intellectual activity or means of individualization" (Article 1229).

Nowadays within economy, relations of power by no means always rely on relations of ownership. Even if it is about the authority to dispose of or regulate access to resources, including electronic ones (Skype, Torrent, etc.), researchers are faced with complex phenomena which requires making a distinction between operational rules and rules of collective choice (Ostrom, 1990), as well as taking into account the possibility of dispersion of proprietary rights (Kapelyushnikov, 1991). But the point is that the authority to dispose of resources, which is normally called power as ownership, is by no means the only foundation for economic power. As was noted above, no less important is power through status which may be grounded in estates privileges, office, clan (family) hierarchy, traditions, etc.

Another foundation for economic power is monopoly. "Power as monopoly is based on the parties having unequal bargaining power due to the limited space for choices to be made ... This statement may be supported both by control over a unique resource, including intellectual property, infrastructural facilities (a pipeline, an only road), access to the market, etc., and by unique spot within the value network" (Dement'ev & Ustyuzhanina, 2016). In other words, the rationale for a monopoly may be the ability to both regulate access to a resource, including a non-material one (here one may draw an analogy to rights and rules characteristic of ownership relations), and lock the counterparty into a certain relationship. The best illustration of the 2nd type of monopoly is the fundamental transformation (Williamson, 1987), where the parties' bargaining power changes as a result of one of the counterparties investing in specific assets, with power shifting not to the owner of those assets but its counterparty.

The next important source of power is economic coercion, which implies power as temptation (Dement'ev & Ustyuzhanina, 2016). It profits suppliers to work with large retailers, since this kind of partnership enables them to take advantage of the scale effect and keep transaction costs down significantly. However, there is a price to pay for this, which is agreeing to the counterparty dictating the terms of the interaction (prices, delivery terms, product quality, packaging, etc.). Among those operating in similar conditions are taxi drivers working with platforms like Uber, owners of spaces working with Airbnb, or industrial companies that supply parts for Boeing. All of the cases described by the authors are about unequal bargaining power that is based not on the monopoly of one of the parties to the transaction but its position within

the hierarchy of its field of the market (Fligstein, 2001). In other words, power as monopoly is grounded in limiting the space for possible choices to be made, whilst power as temptation is about the lucrateness of working together at the moment. Satellite companies oriented toward maximizing current gains (minimizing current losses) give voluntary consent to assuming a dependent position within the value chain, exchanging their freedom for not just a subordinate position today but limited space for choices to be made in the future (Note 5).

In real life, the power of one entity over others is based on several foundations. However, there is also the dominant foundation or basis of economic power which is characteristic of each paradigm of economic development. In the authors' view, in an agrarian society economic power is based predominantly on status (one's status within the estates hierarchy), in an industrial one – on property ownership (in a classical sense), and in a digital one – on economic coercion (one's status within the hierarchy of one's field of the market and/or value network).

5. Conclusion

The researchers' analysis provides the statement on the inevitability of digital transformation of public production and, as a consequence, crucial changes in social-economic relations. This is not about just another industrial or technological revolution (change of technological arrangement) but changes in the paradigm of economic development, which are comparable in significance to the Neolithic and Industrial revolutions.

Changes in the paradigm of economic development can be outlined mostly in 3 areas: changes in the nature of labor division, changes in the principal way of interaction among business entities, and changes in the basis of economic power. Changes in the nature of labor division are, above all, expressed in intellectual and organizational centers getting separated from production and service departments. Gradually, an increasingly sizable portion of wealth created in society will move into the area of innovative activity. The free market as the dominant way of interfirm interaction is likely to be supplanted by relatively sustainable, both in participant make-up and in internal structure, value networks. Lastly, property ownership, in a classical sense, will cease to be the main foundation of economic power, and its place will be taken over by a status in the hierarchy of the field of interaction (a firm, a market, or a network) that enables one to establish the rules for interaction and distribute added value.

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Notes

Note 1. It is this terminology that the Ministry of Industry and Trade of the Russian Federation has been keeping to.

Note 2. When it comes to the theory of social-economic formations specifically, its proponents are inclined to believe that in a slave-owning society the main object of ownership is people (slaves).

Note 3. According to A. Bard and J. Söderkvist (Bard & Söderkvist, 2004), the central link within the paradigm of a medieval society, the presumed constant of existence, was the concept of God, whereas for an industrial society this constant is the value of individual freedom.

Note 4. Protection was expressed in the feudal lord both performing the function of a "stationary bandit" and ensuring the insurance function – in times of crop failure the feudal lord's subsistence and seed stores were used to support their lieges.

Note 5. Here you may trace a direct analogy to a free wage worker who agrees to exchange their economic freedom for guaranteed remuneration in the form of wages.

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