Abstract. The transition to the post-industrial society is linked with the fundamental restructuring of the national economy, large-scale lay-offs and altering requirements to occupational qualification. The paper aims to determine the main thrusts of the upcoming changes. Methodologically, the research relies on the theories of vital resources and technological change. The author applies an interdisciplinary approach based on the findings from ethology, medicine, sociology, psychology, political science and economics, and methods of system analysis. In particular, he projects the theory of vital resources onto the economic development of the civilisation to elaborate on the character of the fourth vital mega-wave connected with the emergence of the industry of leisure as a dominant economic sector. The author demonstrates that such a course of events brings the managerial problem of interaction between the ruling elites and the masses to a new level. Having considered Calhoun’s law, Maslow’s pyramid of needs and Bauman’s rule, the researcher reveals social ambivalence of the economy of leisure, which has the potential for both the evolution and degradation of humankind. He discusses the initiative of the Russian government bodies to introduce a four-day working week, and points to the necessity and feasibility of this measure. The researcher suggests abandoning ambitious global projects in favour of regionalisation of the labour market when managing the economy and the higher education system. Taking into account the results of the projection of the Guex – Crevoisier matrix on the university sector, he argues that Russian universities should switch to stronger orientation towards the economic needs of the territories where they are located.

Keywords: post-industrial society; economy of leisure; vital resources; university; social ambivalence.

Acknowledgements: The paper is prepared within the framework of the state assignment of the Government of the Russian Federation to the Financial University for 2021 on the topic “Political economic regularities of the functioning and evolution of Russia’s economic system”.

For citation: Balatsky E. V. (2021). Post-industrial society and the economy of leisure: A new personnel paradigm. Journal of New Economy, vol. 22, no. 4, pp. 5–23. DOI: 10.29141/2658-5081-2021-22-4-1

Received June 15, 2021
Introduction

Today, the developed countries are actively building the so-called post-industrial society, the appearance of which was predicted in 1973 [Bell, 1973]. The periphery states do not participate in this process, while the countries of the semi-periphery, including modern Russia, are involved in this movement and are experiencing maximum difficulties of the transition period. The main characteristic of the post-industrial economy is highly efficient industry with relatively low employment, a significant level of automation in manufacturing process and use of robotics. In such conditions, there is a threat of large-scale unemployment, which, with the total replacement of human labour, will be quite difficult to eliminate. In addition, universities are losing their former monopoly on knowledge, are increasingly lagging behind technological and economic changes and therefore find themselves in an ambiguous position. In this regard, there is a problem of mutually coordinated consideration of future changes both in the labour market and in the higher education (HE).

The purpose of the study is to answer two related questions: what types of activities will be in demand in a post-industrial society? and what place will universities occupy in the new economic reality?

The answers to the questions presuppose mainly a conceptual analysis involving the necessary empiricism. The combination of two research lines based on an interdisciplinary approach allows us to formulate a new personnel paradigm for reforming the Russian economy, and determines the novelty of this paper.

Before proceeding further, we must define the scope of our study. The transition to the post-industrial society follows trends, described in an extensive number of sources. For example, humanity faces the problem of natural resources exhaustion, destruction of the natural environment, over-accumulation of various debts [Heinberg, 2011]. Today, absolutely new sciences and technologies are developing, which in the future may lead to a change in the original human nature. It should be said at once that it is impossible to touch on all the aspects.

We focus our attention on the problems of employment in the post-industrial society. New technologies change the economy structure, the demand for different professions and activities. It is desirable to smooth out the spontaneity of the supposed changes by transforming HE both through the set of professions, and through the nature of training and the students community. Our research is devoted to clarifying these issues. The specific methodological feature is building a system concept based on the data from medicine, psychology, ethology, sociology, political science and economics.

Vital resources and vital mega-waves

In order to adequately respond to the personnel challenges of the post-industrial society, it is necessary to understand its features and characteristics. In this regard,
consider the theory of vital resources, proposed in 2007, and its applications to the civilisation economic development. According to this theory, each person is the owner of four vital resources: time (lifespan), energy (vitality), money (exchange potential) and knowledge (information potential) [Balatsky, 2007]. The theory of vital resources assumes that individuals operate with the four primary factors, which help to produce for themselves all the variety of goods they need. At the same time, vital resources can be classified in two ways: degrees of universality (cosmological and social) and degrees of tangibility (tangible and intangible) (Table 1).

| Criterion of universality | Criterion of tangibility |
|---------------------------|--------------------------|
|                           | Tangible factors         | Intangible factors     |
| Cosmological factors      | Energy                   | Time                    |
| Social factors            | Money                    | Knowledge               |

Source: [Balatsky, 2007].

Afterwards, the theory of vital resources was linked to the doctrine of the human psyche mental contours [Balatsky, 2008], designed in the 20th century by Leary, Stewart et al. [2002] and Wilson [2005a, 2005b]. Even later, the organic conjunction of vital resources and mental circuits with four perinatal matrices introduced into science by Grof [2002] was shown, which made it possible to correlate the processes of individual and social evolution, as well as to show the fractality of human mental architectonics and technological structures of the economy [Balatsky, 2008].

According to the above-mentioned correlations, the humanity develops the vital resources in a strictly defined sequence, thereby forming vital mega-waves that are associated with global technological patterns of the economy. In a stylised way, the four vital mega-waves can be represented as shown below. The first, the agrarian mega-wave, created money and developed agriculture. It resulted in the mastery of the food resource by humankind. Symbolically, money and food came to every house, regardless of the homeowner’s profession. The second, the industrial mega-wave, developed an energy resource and created a modern industry. As a result, energy came to every house in the form of light (electricity) and heat (heating), regardless of a person’s social status. The third, the information mega-wave, is associated with people mastering such an intangible resource as information (knowledge). This victory of humanity is manifested in the fact that information has come to every home in the form of a computer connected to a global information network.

Thus, human civilisation has successfully mastered three of the four vital resources, as demonstrated by their oversupply on the market with prevailing prices.
However, if the first three mega-waves have already been emerged and do not cause cognitive problems, then the fourth wave is just being formed, and its essence is not yet fully understood. In this sense, the theory of vital resources allows us to shed light on the future economy structure. Since the fourth vital resource is time, then the economy of the next wave will be associated with solving the problem of time consumption on a massive scale. In other words, the constant shortage of time due to the need to ‘spend’ it in the workplace is transformed into an excess of leisure time and the possibility of enjoying it. Most likely, in parallel, there will be a quantitative growth in the total fund of human time in the form of a life expectancy increase. This circumstance allows us to assert that the next vital mega-wave, time based, will arrive as the leisure economy. There is every reason to assume that in the final of this wave the entertainment industry will arrive in every home, regardless of its owner’s personality features. The famous slogan of the ancient Roman people “Bread and circuses!” contains only the initial and final stages of the society economic evolution and today is confirmed by the social and technological structure of the ‘economy of time’. At this stage, efforts will be aimed, firstly, at personal time fund extending due to the life expectancy increase and a decrease in the working day length, and secondly, at the most productive consumption of an individual’s leisure time in accordance with his personal desires and priorities.

The main principle of the vital mega-waves alternation is following: once one of them is formed, most of the labour force is concentrated in the corresponding economic sector, which becomes dominant for a while. When shifting from the old vital wave to a new one, the labour force is redistributed from the old dominant sector to the new one. This is exactly what happened, when a long agricultural sector dominance was reduced in favour of the industrial sectors expansion. In developed countries that have begun the post-industrial transition, the share of employment in industry has decreased in favour of information activities and services. Today, the information sector is approaching its historical maximum, and the leisure economy as a part of service sector is beginning its rapid development with the upcoming transformation into an industry dominant.

We should stress that the current fourth vital wave formation is the logical outcome of the capitalism development. The logic of capital and the corresponding economy structure, minimising human labour by replacing it with new technologies, allowed the society of developed countries to reach a reality where all the benefits it needs can be produced either by a small part of the population or by the entire working population with a short working time. The ‘overflow’ of life time from the labour into the leisure is an eternal dream of humankind, which at the moment is closer to be realised than ever before. However, this accomplishment, paradoxically, generates new challenges.
Global challenges of the leisure economy

The transformation of modern industry into robotomics, i.e. into an economy based on mass introduction of robots to the manufacturing, is a technological achievement that causes serious social problems.

For a long time, economic theory has been focused on modeling production and consumption, when goods (for example, a broom, a vacuum cleaner, or a hired cleaning worker) allow people to receive some commodities (for example, a clean house) that have a certain value for an individual and require his time (leisure!) on the use of these goods [Becker, 1965]. However, the economists did not focus their attention on the direct comparison of the working time and leisure usefulness, although some theoretical constructions occurred. For example, a contradiction was noted in the law of Walras: he requires a complete balance of all economic markets, whereas in reality, under capitalism, almost all markets are in oversupply at current prices. To remove this contradiction, the free time (leisure) of individuals was introduced into Walras's scheme, which formed an additional specific market with implicit leisure prices depending on the working time cost [Balatsky, 1999]. This approach made it possible to eliminate the discrepancy: the excess supply in all markets of goods and services, including money markets, is compensated by a shortage of leisure. However, an increase in leisure time in the post-industrial society means a decrease in its deficit with a tendency to excess. This circumstance raises the problem of global capitalism imbalances on a qualitatively new level. There is a situation when a developed leisure industry balances supply and demand in this market, but exposes the excess supply in other markets with renewed vigor.

Thus, the post-industrial economy is, first of all, a struggle for a person's leisure, for his free time. The seriousness of this challenge is emphasized by the Californian programmers’ life motto, synthetised after a sociological survey of 2011: “We are not our job. We are our leisure. Work provides money for life, but leisure time reveals our true interests, desires, aspirations and talents”¹. In other words, modern capitalist society assumes by default a double human life: external (at work) and internal (at leisure), and the second is the main one. Consequently, the struggle for a person’s leisure is a struggle for the person himself, for what he will be, what he will want and what he will achieve. And this is no longer a purely economic problem, but a global challenge with elements of politics, ideology and culture. How and into what they will unite in reality is an open question for all countries without exception.

The main challenge of the post-industrial society is that the lay-offs in the manufacturing industry and the leisure industry formation will not be synchronized by default. This means that robotomics will lead, at least at the initial stage, to a mass of

---

¹ A remote mini-survey covered 150 programmers working in the vicinity of Los Angeles (the USA), and provided for finding out the relative importance of working and free time for people. The conclusions do not pretend to be representative, but only indicate a certain value trend of a certain professional community. The author expresses deep gratitude to A. B. Kazaryan for his help in conducting the survey.
unemployed persons, because there will not be corresponding jobs for them. Moreover, an important feature of the emerging leisure economy is the creativity of its personnel: they must create jobs for themselves, coming up with a new type of entertainment and interest the consumer with non-standard business solutions. This means that employees of the new sector will not be required to have advanced higher education, but the ability to quickly understand a specific situation and launch their own original start-ups. There is no doubt that the transition to the leisure economy will be associated with very serious social problems and unrest. If national governments do not take adequate preventive measures, the social disaffection may become uncontrollable.

The situation is aggravated by the globally observed weakening of ties between elites and masses. Today, the state power and the managerial establishment have already turned into a kind of ‘thing in itself’ for the masses; people do not see how representatives of this social stratum live, how they make decisions, what laws they violate, what is their logic of thinking, motivation, ethics, etc. In parallel, in many developed countries, the share of public spending in GDP, having reached its natural maximum, stopped growing, and the limit in the public administration system evolution was also marked with the continuing complication of the economy and social life. This circumstance allowed Dzolo put forward a political science concept of complexity, according to which the continued complication of the social system will lead to the collapse of democracy and a wide spread of authoritarian political regimes [Dzolo, 2010]. Large-scale digitalization only increases the variety of social contacts within the system, and therefore the problem of the masses activity, which the ruling elites also perceive as a ‘black box’, occurs with renewed force.

Zinoviev described this situation very accurately: “To form a mass ... requires a relatively large number of people who have free time and energy to use it outside work activities ... The masses seem mysterious and unpredictable to politicians and theorists precisely because they do not take into account the individuals left on their own ... As representatives of the masses, people ... adjust their emotionality in a certain way, they develop mass consciousness or the consciousness of a mass as a whole. This process is more or less spontaneous” [Zinoviev, 2004, p. 397]. Thus, the masses become as incomprehensible and transcendent for the elites as the elites are for the masses. This feature of the masses has been fully manifested since 2000, when a wave of ‘colour revolutions’ swept across the world, unexpected for national ruling elites and resulted from new means of communication.

Considering all the mentioned above, in the post-industrial society the struggle of the elites for the masses mindset will become the norm of life, all the possibilities of information technology and the leisure economy will be used. However, this process is obscured due to the fact that the conscious stupefaction of the masses puts an end to the further society evolution and in the long term complicates the elites position.
Post-industrial welfare: Evolution vs degradation

Another challenge of the post-industrial society, which deserves a special discussion, is the danger of repeating the experiment “Universe 25” set by John Calhoun in 1968–1972 [Calhoun, 1973], but on the scale of entire countries and peoples. The experiment essence was to create a kind of paradise for the mouse population, where food, living space and nesting material were unlimited. Contrary to expectations, the initial exponential growth of the mouse colony quickly slowed down. A group of ‘outcasts’ appeared, they did not find their social role, which radically changed the behavioural model of all mice. After four years there were 122 rodents left in the tank who had passed the reproductive age. Thus, the ‘paradise’ for mice ended with their complete depopulation. Satisfaction of the bio-survival needs caused a break in social ties between individual animals and, as a result, their social autism, which eventually ended in the physical death of the population.

Following his research findings, Calhoun derived a formula called ‘death squared’: the rupture of social ties can be classified as an organisational ‘death of society’ (i.e. the social death of a population), and autism and indifference of specific individuals as their ‘spiritual death’, which ultimately leads to the physical extinction of the population [Calhoun, 1973]. This logic can be represented using a stylised, but very clear formalization. If $P$ denotes depopulation, i.e. the physical death and disappearance of the community, $DS$ is the paralysis (death) of the society due to the rupture of ties between individuals, and $DI$ represents the loss of activity and ability of the individual, Calhoun’s scheme and formula will look as follows: $DS \rightarrow DI \rightarrow P$ and $P = DS \times DI$. If we do not take into account the indices $S$ and $I$, then we get the final formula of ‘death squared’: $P = D^2$.

Of course, some researchers transferred the results of Calhoun’s experiment to urban population, while others warned against analogies between rodents and humans [Ramsden, 2011], but this issue is far from being clarified. In this regard, we show the deep content and limitations of the Calhoun’s formula.

First of all, the Calhoun’s experiment is really universal and was reproduced among people, in particular during the colonisation of the Polynesian islands by Europeans. So, back in 1896, Stevenson brilliantly described the depopulation of the Oceania natives: the colonists’ abolition of old behaviour norms (a ban on men wearing skirts, many types of dancing, tattooing on the body, hunting for the heads of other tribes members, replacing the leader with a foreign governor, etc.) led to the rupture of the original social ties and social disorientation of the aborigines, which, in turn, caused them the deepest depression, apathy and suicidal tendencies. As a result, the native population of paradise Polynesian islands began to rapidly die out [Stevenson, 2008].

---

1 The universality of Calhoun’s law is that it reveals the algorithm of any system destruction: first, the system connections between the system elements (i.e. collective mechanisms) are torn and broken, and after that the decomposition of the system individual elements (i.e. individual entities) begins. The second stage inevitably comes by virtue of the very definition of the system as a mode of existence of a multitude of individual elements.
This makes it possible to interpret the Calhoun’s scheme and formula as a kind of a systemic law.

It must be admitted that the total society digitalisation, remote contacts, increasing leisure and entertainment industry are a solid foundation for the degradation of human civilisation. Autism is becoming a real curse of the 21st century. According to the federal agency of the US Department of Health (The Centers for Disease Control and Prevention (CDC)), the scale and dynamics of autism (autism spectrum disorder – ASD) are threatening: if in 2000 one child with ASD accounted for 150 children, then in 2016 – one child for 54 children [Maenner et al., 2020].

In parallel with the traditional medical discussions about the correctness of ASD diagnostic methods, the stability of the diagnosis, its genetic basis, etc. today, a new social paradigm is already being used. According to this paradigm, human health is both inside and outside of his body. A typical example of this concept application is the Roseto Mystery paradox [Gladwell, 2008]. Within this tradition, Calhoun’s law allows us to understand the social origins of ASD. An autistic child is a product of under-socialisation, i.e. lack of attention from the social environment: parents, educators, teachers, etc. It is the lack of social contacts that leads to the ‘Mowgli syndrome’ appearance of varying severity. The key reason for this state of affairs is the excessive employment of parents, their overwork, overload with various problems and, as a result, unwillingness to deal with their children.

This situation obeys the Bauman’s rule, which in modern interpretation can be formulated as follows: the lack of opportunities unites people into social groups, and the availability of opportunities divides them [Bauman, 2000]. In this regard, the growth of the population welfare, which gives people new opportunities and makes them relatively independent of large social groups, allows them to become independent and either break most ties with society or minimise them. Children are most sensitive to this process, although ASD symptoms manifest themselves among adults in the forms of addiction, ludomania, gambling, etc.

However, the experiment “Universe 25” not at all demonstrates the fatality of social welfare. To understand this point, it is necessary to make a number of fundamental clarifications. The fact is that mice do not have rich cognitive and spiritual demand, and therefore the satisfaction of simple bio-survival needs led them to the top of the animal pyramid of needs. Further, in accordance with the unshakable law of the theory of systems, one of two things happens: the system goes either up (increases the level of organisation) or down (lowers the level of organisation) – the third is not given. Due to the limitations of the mice pyramid of needs, they had no choice but to begin to degrade. People, on the contrary, in accordance with the concept of Maslow’s

---

1 The genetic nature of autism undoubtedly takes place, however, it should be taken into account that the genetic predisposition to the disease is the result of genetic mutations in the child’s ancestors, which, in turn, are always caused by external causes, i.e. have a social nature. Thus, the genetic and social paradigms, strictly speaking, do not contradict each other.
pyramid, in addition to physiological and simplest social needs, have also a ‘super-
structure’ of higher needs for self-expression: cognitive, aesthetic, needs for self-actu-
alisation [Maslow, 1954]. Thus, people, unlike mice, have a place to move up the path
of evolution, but not everyone will choose this path in the new post-industrial society.
This means that the leisure economy at its limit will lead to the degradation of a large
strata, and in some cases, entire countries, peoples and continents. Such communities
are doomed and, most likely, will die sooner or later. Therefore, to neglect this process
means to provoke the degradation of civilisation. Every country and every nation
must look for its own answers to this challenge.

In connection with Calhoun’s law, one more important explanation should be
made concerning the cyclicity of evolution. The spiritual development of a person has
its own limit1. The prophets and various adherents of religious and esoteric teachings
came to this limit through prolonged social deprivation2. However, after that, they
all returned to society with the intention of serving and transforming it for the bet-
ter. For example, the devotion of Moses was expressed in 40 years of wandering with
the Jewish people in the desert, Buddha preached for 40 years throughout the Indian
subcontinent and formed communities, Socrates and Jesus sacrificed their lives for a
better future of people, etc. In this regard, there is no fatal predestination of evolution,
and Calhoun’s law only determines a possible negative scenario for a certain large
social group. In a positive scenario, the post-industrial society can lead to a complete
transformation of humanity and the inward nature of humankind.

Challenges of the leisure economy: Russian specifics

All the above-mentioned challenges of the post-industrial society are relevant for
Russia, but some aspects are specific. Here we will identify two interrelated problems.
The first is the creation of a high-tech industry sector, the second is the implementa-
tion of preventive actions to reduce future mass unemployment. Consider them in
more detail.

It has already been noted that Russian model of entering into the post-industrial
society is very irrational: a post-industrial society without a developed industrial sec-
tor [Balatsky, Ekimova, 2021]. Building a fully-fledged post-industrial society with-
out highly developed industry, considerable labour productivity and knowledge in-
tensity, is impossible, strictly speaking. The following analogy is appropriate here:
entering a post-agrarian (industrial) society without a developed agricultural sector.
This example clearly shows that without a developed agricultural sector, the country
and its population become extremely vulnerable to the policy of food exporters in the
foreign market. Any food embargo against an industrially developed state will mean
the slow death of its population even though it has remarkable industrial goods and

---

1 This state appears under different names: nirvana, enlightenment, awakening, descent of grace, transcen-
dence of consciousness, etc. The very fact of this ‘spiritual singularity’ is important.
2 The forms of spiritual practice can be different: prayers, meditations, retreats, different forms of yoga, etc.
Theoretical Basis of Economic Development and Growth

Technologies. The same is the case with the industrial sector in the post-industrial society: the refusal of exporting countries to supply vital industrial goods to Russia (personal computers, mobile phones, cars, household appliances, medicines, etc.) will mean paralysis of the Russian society, regardless of other economic achievements.

Today, the country is not ready for a civilised transition to the post-industrial society due to the manufacturing industry underdevelopment: calculations show that labour productivity in this sector in 2019 was six times lower than in the USA [Balatsky, Ekimova, 2021]. Given the extremely low commodity diversification of the Russian manufacturing industry, the country cannot sustain economic security standards. Thus, at the present time, building the post-industrial society is an objective necessity and a global trend, while Russia does not yet have an adequate basis for this. This situation resembles building in 1917 the proletariat dictatorships without the proletariat, when by the time of the socialist revolution in the Russian Empire, proletarian workers numbered only 4.2% of the total population [Fedorov, 2010], followed by catching up industrial development.

Without a doubt, Russia will have to balance its economy through the technological improving of the manufacturing industry. It will be a difficult challenge in the context of large-scale international sanctions and the political woes. However, without filling a technological gap, Russia risks to build a post-industrial society that will serve as a resource base and a place of exotic tourism for the whole world.

The problem of preparing Russian personnel for the post-industrial society in order to prevent future mass unemployment is quite acute, because it requires to develop completely different economic sectors than those that appear in the priorities and the program documents of the Russian government, as well as the training of appropriate personnel that is not in the focus of the national higher education system. We are talking about the fact that the robotomics will displace industrial workers, who can be re-employed only in the service sector and, in particular, in the leisure industry.

The Russian government bodies understand current trends and see an impending threat. Apparently, this circumstance may be the reason for the speech of Dmitry Medvedev, the Security Council Deputy Chairman of the Russian Federation, at the International Labour Conference in Geneva in the summer of 2019, where he first voiced the idea of introducing a four-day working week in Russia ‘all other things being equal’ (salary payments remain unchanged). According to Medvedev, this is valuable in itself, since a person needs “more space to live and relax”. Without a doubt, this initiative is revolutionary in every respect: for the first time in the human history, it is proposed to almost equalise the days of work and leisure by making this ratio 4/3.

To understand the scale of social transformations from this measure, we will carry out the simplest, but very clear calculations. Assume that it takes a third of a day

---

1Less, but not better. Will the Russians have a four-day working week? RIA Novosti. May 29, 2021. https://ria.ru/20210529/pyatidnevka-1734662190.html (in Russ.)
(eight hours) for a person to sleep. Then, with a five-day working week, we will get the following ratio between working time and leisure: $40 \times 5 > 32 \times 2$, that is, an individual's leisure time is 80% of the working time. Now let's compare the four-day working week under the same assumptions: $32 \times 4 < 48 \times 3$, that is, leisure time is one and a half longer than working time\(^1\). The situation is changing dramatically: society is turning from ‘working’ mainly into ‘having a rest’, therefore, the leisure economy should become the main driver of the national economy and a condition for the successful fight against autism and deviant behaviour. And the economy restructuring on the basis of a completely different production impulse is the main challenge for the Russian government bodies.

**The feasibility of building the leisure economy: Russia and the world**

We should admit that there are grounds for Dmitry Medvedev’s initiative. For example, according to the data of Organisation for Economic Cooperation and Development (OECD) for 2018, the Netherlands already has a working week of 29.3 hours, ahead of the reform planned in Russia. In Germany, this value is 34.3 hours, in Australia and Italy – 35.7, in Sweden – 36.0\(^2\). Thus, these four countries lag behind the four-day standard of the working week by 2–4 hours, which is a good basis for its final adoption. Spain has launched a three-year pilot project to reduce working hours from 40 to 32, which involves about 200 companies with about six thousand people employed; the Spanish government has allocated 50 million euros to compensate enterprises for the loss of income\(^3\).

Back in 1965, the British company Roundpay Metal Finishers tried to switch to three days off a week. Despite the positive results of the experiment, the experience did not receive mass implementation. In 1974, in order to save energy during large-scale inflation in the UK, a three-day (!) working week was introduced for two months with a positive result: people worked two times less, and the production level fell by only 6%. Nevertheless, the country was not yet ready for such radical changes and the case was limited to an experiment\(^4\).

---

\(^1\) The calculations do not take into account the fact that even working a person still has about 2 hours as leisure time (the time for food, transport, hygiene, etc.); they also do not take into account the fact that not all 16 hours of weekends are pure leisure (at least time for food and hygiene must be deducted from it). Taking into account these factors does not fundamentally change the situation, but makes the final results less clear, and therefore the calculations were carried out according to a simplified scheme.

\(^2\) What will happen if Russia switches to a four-day working week? *Attek journal*. October 8, 2019. [https://www.centratek.ru/info/rossija-perejdet-na-chetyrehdnevnuyu-rabochuju-nedelju-chto-budet-plany/](https://www.centratek.ru/info/rossija-perejdet-na-chetyrehdnevnuyu-rabochuju-nedelju-chto-budet-plany/) (in Russ.)

\(^3\) Reduced. Are there any prospects for a four-day working week in Russia? *Kommersant*. May 3, 2021. [https://www.kommersant.ru/doc/4800206](https://www.kommersant.ru/doc/4800206) (in Russ.)

\(^4\) Four-day working week: Spain has started. When in Russia? *Voennoye obozrenie*. March 24, 2021. [https://topwar.ru/181155-chetyrehdnevnaja-rabochaja-nedelja-ispancy-nachali-kogda-v-rossii.html](https://topwar.ru/181155-chetyrehdnevnaja-rabochaja-nedelja-ispancy-nachali-kogda-v-rossii.html) (in Russ.); You need to work with your head: why do companies switch to a four-day working week? *Forbes*. June 1, 2021. [https://www.forbes.ru/forbeslife/430947-rabotat-nuzhno-golovoy-zachen-kompaniii-perehodyat-na-chetyrehdnevnuyu-rabochuju](https://www.forbes.ru/forbeslife/430947-rabotat-nuzhno-golovoy-zachen-kompanii-perehodyat-na-chetyrehdnevnuyu-rabochuju) (in Russ.)
In the USA, back in 2008, the five-day working week was compressed to a four-day working week in the Utah state institutions without reducing its hourly duration. Subsequently, similar experiments were regularly conducted in such large companies as Unilever, Deloitte and KPMG. In 2019, the Microsoft division in Japan introduced a paid day off for its employees on Friday, which led to a 40% increase in labour productivity, as well as to savings in office resources and electricity: the number of printed pages decreased by 59%, and electricity consumption by 23%1. Even such results did not encourage the country’s leaders to widely introduce organisational innovation. However, the process can no longer be stopped: according to the recruitment company ZipRecruiter (California, the USA), over the past three years (2018–2020), the number of offers to switch to a four-day week has almost tripled2.

The corporate sector carried out similar experiments in Russia. For example, about 10 years ago, Mirax Group introduced a four-day working week, and the personnel had time to do in four days all what they used to do in five days3. The coronavirus epidemic and public fears about the upcoming economy robotisation aroused additional interest to the initiative: a survey by the BCG consulting company showed that 41% of workers worldwide fear being displaced by robots.

Regarding the feasibility of Medvedev’s initiative, we can confidently say that it will be implemented, and in the not so distant future. Firstly, this is indirectly evidenced by the insistence of the innovation initiator: in February 2021, he proposed to revive the idea of a four-day working week and begin preparing amendments to the Labour Code of the Russian Federation, and in April of the same year, the politician confirmed his position at a meeting with trade unions4. Secondly, many political forces support the initiative of the Russian Federation ex-President. For example, the Federation of Independent Trade Unions of Russia is ready to accept a four-day working week at any time5. Tatyana Potyaeva, the Commissioner for Human Rights in Moscow, also voiced absolute support for the initiative and expressed readiness to introduce a four-day working week for women. Sergey Vostretsov, a member of the State Duma Committee on Labour, Social Policy and Veterans Affairs believes that Russia will make the transition to a four-day working week by the beginning of 20306. Valery

---

1 Four-day working week: Spain has started. When in Russia? Voennoye obozrenie. March 24, 2021. https://topwar.ru/181155-chetyrehdnevnaja-rabochaja-nedelja-ispancy-nachali-kogda-v-rossii.html (in Russ.)
2 Four-day working week: will there be shift in Russia. Kommercheskiy director. https://www.kom-dir.ru/article/3690-chetyrehdnevnaya-rabochaya-nedelya (in Russ.)
3 Four-day working week in Russia in 2021. Komsomolskaya Pravda. https://www.kp.ru/putevoditel/lichnye-finansy/chetyrekhodnevnya-rabochaya-nedelya/ (in Russ.)
4 Four-day working week in Russia. GOGOV: April 30, 2021. https://gogov.ru/articles/4day-workweek (in Russ.)
5 Four-day working week in Russia in 2021. Komsomolskaya Pravda. https://www.kp.ru/putevoditel/lichnye-finansy/chetyrekhodnevnya-rabochaya-nedelya/ (in Russ.)
6 The State Duma called the transition to a four-day working week inevitable. Izvestiya. March 17, 2021. https://iz.ru/1138279/2021-03-17/v-gd-nazvali-neizbezhnym-perekhod-na-chetyrekhodnevnuu-rabochuiu-nedeliiu (in Russ.)
Ryazansky, the First Deputy Chairman of the Committee of the Federation Council of the Russian Federation on Social Policy maintains a similar position. The Russian Union of Industrialists and Entrepreneurs believes that the planned radical change in the labour regime is possible by 2035, but this does not prevent its representatives from working out forms and tools to introduce a new system.

A purposeful developing of the four-day working week initiative is already on the move. Dmitry Medvedev, the ex-President of the Russian Federation believes that the new system should be introduced gradually: first by fixing a short working Friday, then experimentally in one region or a group of companies, etc. In the same vein, proposals are made for palliative steps: reducing working hours for certain groups of workers: young families, citizens caring for sick or elderly parents, disabled children, etc. However, no regulations on this issue have yet been adopted, and according to the press, the Ministry of Labour and Social Protection of the Russian Federation is only preparing a pilot project to introduce a four-day working week at some enterprises participating in the national program of labour productivity improvement. The experiment will involve 266 small and medium-sized businesses in 30 regions of the country; their employees are supposed to keep the same salary, and the costs of the enterprises due to the shift to a reduced work schedule are compensated by the state (100% in the first year, 50% in the second and 33% in the third).

The above-mentioned facts clearly indicate that the Russian government bodies are preparing in advance to ease the problem of unemployment in the post-industrial society. This measure will fundamentally transform the current labour market.

**Education in the post-industrial economy**

As has been seen, the very concept of unemployment in the post-industrial society was already rethought at the end of the 20th century and began to be considered as a transitional stage in a person’s life, when a forced pause in working activity can be used to study new professions. At the same time, the central link of the unemployment policy in the post-industrial society is an effective national system of education throughout the life of an individual [Levett, 1994].

It is acknowledged that the value of human capital in the post-industrial society in comparison with industrial (physical) capital is sharply increasing [Gershuny, 2005]. At the same time, post-industrial values are applicable only to a small part of the population, so the post-industrial challenges produce completely different responses

---

1 The Federation Council assessed the chances of switching to a four-day working week. [Rossiyskaya Gazeta](https://rg.ru/2021/05/27/v-sovfede-ocenili-shansy-po-perehodu-na-chetyrehdnevnuu-rabochiuu-nedeliu.html) (in Russ.)

2 “While it remains a dream”: The Ministry of Labour is ready to discuss the transition to a four-day working week [Gazeta.ru](https://www.gazeta.ru/business/2021/05/27/13609526.shtml) (in Russ.)

3 Four-day working week: if there will be a shift in Russia. [Kommercheskiy director](https://www.kom-dir.ru/article/3690-chetyrehdnevnya-rabochaya-nil) (in Russ.)
from the masses and elites in national mobilisation structures [Wilensky, 2003]. The diversity of the behavioural models in different social groups are complemented in the post-industrial society by the ‘great divergence’ between those cities that have become centers of innovation and ideas and those that have remained traditional production centers; this trend is characteristic of cities in both the USA and Europe, including the UK [Martin et al., 2016]. It is not surprising that under these conditions, researchers are paying more attention to alternative employment models [Eichhorst, Marx, 2015].

Today, a number of researchers consider 2008 as the start of a post-industrial society [Guex, Crevoisier, 2017]. This approach once again activates regional development strategies. Thus, based on the concept of Camagni [2005] and his colleagues [Camagni, Capello, Caragliu, 2016], considering the region as a meeting place for various supplies and needs, an original typology of regions in the post-industrial society is proposed [Guex, Crevoisier, 2017] and essentially boils down to a spatial matrix ‘supply-demand’ (Table 2).

Table 2. Typology of regional economies in the post-industrial society by Guex – Crevoisier

| Supply of the place | Demand for the place |
|---------------------|----------------------|
| Production place (Place as a productive agglomeration) | 'Manufacturing' (1) Specialised production for export markets | 'Short circuits' (3) Specialised production for local population |
| Consumption place (Place as a living environment) | 'Tourism' (2) Attractiveness for consumers | 'Local services' (4) Economy of local population's needs |

Source: [Guex, Crevoisier, 2017].

Note: the numbers in parentheses indicate the types of regions.

According to Table 2, regions in post-industrial globalisation should take into account their specifics more carefully and, respectively, their capabilities and advantages. So, if type 1 is developing due to industrial international competitiveness, then type 3 is adapting the production to the needs of the local population; if type 2 is developing due to the attractiveness for living and visiting by citizens of the whole world, then type 4 is adapting the service sector to the needs of the local population [Guex, Crevoisier, 2017].

Looking ahead, we will point out that the Guex – Crevoisier typology is fully applicable to universities, which can also act in these four aspects. This is especially relevant in the context of conflicts between urban communities and universities. Thus, some researchers believe that the university-dominated economy distorts normal market incentives and encourages a special form of stalled gentrification.
The struggle for minds in the post-industrial society is also being conducted at the universities, which is confirmed by the academic interest in the higher education affecting the national identity and social cohesion of students [Idris et al., 2012].

Thus, the problems of developing countries become especially obvious: even a simple quantitative saturation of society with universities is their primary goal with growing national ambitions. States such as Ethiopia, for example, have to simultaneously solve the problem of increasing the quantity and quality of education [Deuren et al., 2013]. However, acute problems are faced also by developed countries. A number of researchers traditionally study such anomalies as incomplete higher education, decreasing return on investment in education, increasing students’ loan debt and the number of defaults, productivity decline of university research with the simultaneous growth of the administrative apparatus and bureaucracy, etc. [Murphy, 2015]. Russia also contributes to the piggy bank of modern problems. Russian universities supply the labour market with a ‘semi-finished product’: according to experts, it requires 12 months on average and millions of rubles to complete the training of specialists from the best country’s universities.

The above-mentioned details assume a completely new model of the university and higher education in the Russian post-industrial society.

**Economics and education in Russia: Ambition vs expediency**

Modern Russian politics is characterised by global goals and initiatives that show ambitions for world leadership. For example, in accordance with the Decree of the President of the Russian Federation of May 7, 2012 no. 599 “On measures to implement state policy in the field of education and science”, the Project 5-100 (The Russian Academic Excellence Project) was launched, aimed at entering of at least five Russian universities in the top-100 of the world’s leading universities by 2020. The 5-100 Project was implemented during 2012–2020 and cost about 80 billion rubles, but by the beginning of 2021 none of the 21 project participants had entered the top-100 of any global university ranking.

Despite this, Presidential Decree of May 7, 2018 no. 204 “On national goals and strategic objectives for the development of the Russian Federation for the period up to 2024” again sets global and ambitious goals: the entry of the Russian Federation into the top five largest economies in the world; ensuring economic growth rates

---

1 How business can work effectively with universities - tips and cases. Russbase. February 5, 2018. https://rb.ru/opinion/biznes-vuz/ (in Russ.)

2 Decree of the President of the Russian Federation of May 7, 2012 no. 599 “On measures to implement state policy in the field of education and science” http://www.kremlin.ru/acts/bank/35263 (in Russ.)

3 Decree of the President of the Russian Federation of May 7, 2018 no. 204 “On national goals and strategic objectives for the development of the Russian Federation for the period up to 2024” http://kremlin.ru/events/president/news/57425 (in Russ.)
above the world while maintaining macroeconomic stability; ensuring the presence of the Russian Federation among the top five countries in the world carrying out research and development in areas determined by the priorities of scientific and technological development; the entry of the Russian Federation into the top ten countries of the world in terms of the quality of general education. This Decree was a ground for the Resolution of the Government of the Russian Federation of May 13, 2021 no. 729 “On measures for the implementation of the strategic academic leadership program “Priority-2030”; this program replaced the Project 5-100 and the program for the flagship universities development.

These examples show that Russia is constantly being involved into large-scale projects that require huge efforts and costs, but have mainly an image nature and do not give significant results. In the context of the transition to the post-industrial society, such an approach is fraught with depletion of the country’s resources with extremely low effectiveness of government activities. In this regard, the question to be brought is about a more appropriate doctrine that can be opposed to the existing policy.

All the aforementioned issues allow us to formulate several key theses of the new paradigm.

(i) The doctrine of ‘global dominance’ should be abandoned in favour of the doctrine of ‘reasonable sufficiency’. Experience has shown that Russia is not able to develop all industries and technological directions at the global level. In this regard, it is necessary to define a certain ‘technological core’, including industries and activities in which Russia can maintain a leading position in the world and thereby ensure the internal and external security of the country. At the moment, electronics and nanoindustry are falling out of this technological core what hinders ensuring technological and military security.

(ii) In parallel with maintaining industries of the technological core at the global level, it is necessary to expand the service sector and the leisure economy. These types of activities will serve as the main source of employment for personnel released from the industrial and agricultural sectors. Such a priority implies a transition to a proactive regional development strategy. This means that the state interests should be shifted from the first and second sectors in the Guex – Crevozier matrix to the third and fourth sectors (Table 2). Otherwise, the social problems caused by large-scale unemployment in the regions can completely nullify the positive technological achievements of the post-industrial society. This danger requires maximum autonomy of the Russian regions’ economy with its corresponding restructuring in favour of the service industry. In this sense, the policy of regionalisation of the Russian economy opposes its globalisation, but forms the basis for its future social well-being.

(iii) An important role in solving the impending social problems should be played by the higher education system, for which the system should be radically changed to fit the constructed model of the economy. This means that domestic universities
should strengthen their regional component and reduce their autonomy from the region. To do this, the federal regulator, regional authorities and universities should reconsider training programs towards services and creative activities of the leisure economy, focusing on the needs of the region where the training centers are located. Otherwise, the budgetary ‘pumping up’ of engineering personnel may result in their subsequent unemployment in the face of robotomics.

(iv) Universities should get rid of their autonomy from the labour market and stop passing the employment problems to graduates. In the post-industrial society, a university without an employment option risks to be ignored by the applicants. In fact, universities should abandon the policy of mass standardised education and ‘merge’ with the local enterprises: on the one hand, to train personnel in a specially targeted way, on the other hand, to involve enterprises to ensure a clearer link between training process and practical needs and peculiarities of the local economy. Thus, the universities are supposed to act mainly within the fourth organisation type in the Guex–Crevoisier matrix and shift to a strategy of exclusive (purely targeted) training, taking into account even small employers.

(v) In addition to the previous proposal, universities should strive to turn into multifunctional regional sites where the personnel supply will meet demand. Universities should have personnel departments in their structure to monitor the regional labour market. This new option will allow them not only to help local population to obtain jobs, but also to develop and implement additional education programs, which, apparently, will become the main function of universities in the post-industrial society.

Of course, these principles do not exhaust the new personnel paradigm of the post-industrial society, but even they are enough to understand the scale of the necessary organisational and institutional changes in the Russian economy.

Conclusion

The post-industrial society is already a reality, and it cannot be ignored. The history of humankind shows that the industrial revolution, which accompanied the capitalism, led to the emergence of a ‘superfluous’ people mass and to extremely cruel forms of releasing from them; there is every reason to believe that the current stage of post-industrial society, associated with the robotomics, will cause an equally large-scale release of human labour. However, it would be short-sighted to say that the ‘superfluous’ people will be always unnecessary. On the contrary, the mature stage of the post-industrial society implies a weakening of the economies of scale, a transition to an exclusive offer of goods and services, and the growth of interpersonal ties.

In other words, in the post-industrial society, each person will purchase shoes and clothes by individual order, have their own family doctor, go to fitness being supervised by a personal trainer, use the services of his favourite massage therapists and hairdressers, buy yogurt in a selected store from a selected manufacturer, etc. All this
will happen sooner or later, but it is better to be prepared in advance and go through the transition period with minimal social costs.

References

Balatsky E. V. (1999). Leisure as a factor of economic equilibrium. *Herald of the Russian Academy of Sciences*, vol. 69, no. 11, pp. 1018–1025.

Balatsky E. V. (2007). Teoriya zhiznennykh resursov: modeli i empiricheskie otsenki [The theory of vital resources: Models and empirical assessments]. *Monitoring obshchestvennogo mneniya = Monitoring of Public Opinion*, no. 2 (82), pp. 124–133. (in Russ.)

Balatsky E.V. (2008). Mental circuits, society stratification, and civilization waves. *Herald of the Russian Academy of Sciences*, vol. 78, no. 4, pp. 712–718.

Balatsky E. V., Ekimova N. A. (2021). Russian economy model: Post-industrial society without industrial sector. *Mir novoi ekonomiki = The World of New Economy*, vol. 15, no. 2, pp. 29–46. DOI: 10.26794/2220-6469-2021-15-2-29-46.

Grof S. (2002). *Nadlichnostnoe videnie: Tselitel'nye vozmozhnosti neobychnykh sostoyaniy soznaniya [Transpersonal vision: The healing potential of unusual states of consciousness]*. Moscow: AST Publ. 237 p. (in Russ.)

Dzolo D. (2010). *Demokratiya i slozhnost’: realisticheskii podkhod [Democracy and complexity: A realistic approach]*. Moscow: Higher School of Economics. 320 p. (in Russ.)

Zinovyev A. A. (2004). *Na puti k sverkhobshchestvu [Towards a super-society]*. Saint Petersburg: Neva Publ. 608 p. (in Russ.)

Leary T., Stewart M. (eds.) (2002). *Tekhnologii izmeneniya soznaniya v destruktivnykh kul’takh [Technologies change of consciousness in destructive cults]*. Saint Petersburg: Ekslibris Publ. 224 p. (in Russ.)

Wilson R. A. (2005a). *Psikhologiya evolyutsii [The psychology of evolution]*. Moscow: Sofiya Publ. 304 p. (in Russ.)

Wilson R. A. (2005b). *Kvantovaya psikhologiya [Quantum psychology]*. Moscow: Sofiya Publ. 208 p. (in Russ.)

Fedorov A. N. (2010). Real’naya opora sovetskoy vlasti: sotsial’no-demograficheskie kharakteristiki gorodskogo naseleniya Rossii v 1917–1920 godakh (na materialakh Tsentral’nego Promyshlennogo rayona) [The real support of Soviet power: Socio-demographic characteristics of the urban population of Russia in 1917–1920 (based on materials from the Central Industrial Region)]. *Zhurnal issledovaniy sotsial’noy politiki = Journal of Social Policy Research*, vol. 8, no. 1, pp. 69–86. (in Russ.)

Bauman Z. (2000). *Liquid modernity*. Cambridge: Polity Press. 228 p.

Bell D. (2003). Financial institutions and capital flows. In *The Handbook of International Economics*, vol. 4, pp. 1055–1056. Elsevier.

Bell D. (1973). *The coming of post-industrial society: A venture of social forecasting*. New York: Basic Books. 507 p.

Calhoun J. (1973). Death squared: The explosive growth and demise of a mouse population. *Proceedings of the Royal Society of Medicine*, vol. 66, no. 2, pp. 80–88.

Camagni R. (2005). *Economía urbana*. Barcelona: Antoni Bosch. 332 p. (in Spanish)

Camagni R., Capello R., Caragliu A. (2016). Static vs. dynamic agglomeration economies. Spatial context and structural evolution behind urban growth. *Papers in Regional Science*, vol. 95, no. 1, pp. 133–158. https://doi.org/10.1111/pirs.12182.
Deuren R., van, Kahsu T., Ali S. M., Woldie W. (2013). Capacity development in higher education: New public universities in Ethiopia (Working Paper no. 2013/24). 39 p.

Eichhorst W., Marx P. (eds.) (2015). Non-standard employment in post-industrial labour markets: An occupational perspective. Edward Elgar Publishing. 448 p.

Gershy J. (2005). What do we do in post-industrial society? The nature of work and leisure time in the 21st Century (ISER Working Paper Series no. 2005-7). 25 p.

Gladwell M. (2008). Outliers: The story of success. New York, Boston, London: Little, Brown and Company. 310 p.

Guex D., Crevoisier O. (2017). Post-industrial globalization and local milieus: A typology (CRED Research Paper no. 15). 23 p.

Heinberg R. (2011). The end of growth: Adapting to our new economic reality. Cabriola Island, B.C.: New Society Publishers. 321 p.

Idris F., Hassan Z., Ya’acob A., Gill S. K., Awal N. A. M. (2012). The role of education in shaping youth’s national identity. Procedia – Social and Behavioral Sciences, no. 59, pp. 443–450. DOI: 10.1016/j.sbspro.2012.09.299.

Lafer G. (2003). Land and labor in the post-industrial university town: remaking social geography. Political Geography, vol. 22, pp. 89–117. DOI: 10.1016/S0962-6298(02)00065-3.

Levett A. (1994). Work and unemployment in post-industrial times. In: Morrison Ph. S. (ed.) Labour, Employment and Work in New Zealand. Wellington: Victoria University of Wellington, pp. 378–384.

Maenner M. J., Shaw K. A., Baio J., Washington A., Patrick M., DiRienzo M., ... Dietz P. M. (2020). Prevalence of autism spectrum disorder among children aged 8 years – Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2016. MMWR Surveillance Summaries, vol. 69, no. 4, pp. 1–12. https://doi.org/10.15585/MMWR.SS6904A1.

Martin R., Sunley P., Tyler P., Gardiner B. (2016). Divergent cities in post-industrial Britain. London: Government Office for Science. 41 p.

Maslow A. H. (1954). Motivation and personality. New York: Harper. 411 p.

Murphy P. (2015). Universities and innovation economies: The creative wasteland of post-industrial society. Australia: James Cook University. 268 p.

Ramsden E. (2011). From rodent utopia to urban hell population, Pathology, and the crowded rats of NIMH. Isis, vol. 102, no. 4, pp. 659–688. https://doi.org/10.1086/663598.

Stevenson R. L. (2008). In the South Seas. Cambridge: Cambridge Scholars Publisher. 222 p.

Wilensky H. L. (2003). Postindustrialism and postmaterialism? A critical view of the “New Economy”, the “Information Age”, the “High Tech Society”, and all that (WZB Discussion Paper no. SP 2003-201). Berlin: Wissenschaftszentrum Berlin für Sozialforschung. 33 p.

Information about the author

Evgeny V. Balatsky, Dr. Sc. (Econ.), Prof., Chief Researcher of the Central Economics and Mathematics Institute of RAS, Director of the Center for Macroeconomic Research, Financial University under the Government of the Russian Federation, 4 4th Veshnyakovskoy Lane, Moscow, 109456, Russia
Phone: +7 (499) 277-39-65, e-mail: evbalatsky@inbox.ru

© Balatsky E.V., 2021