ISSN 1829-3824

WISDOM

SPECIAL ISSUE 1(2), 2022

Published by the decision of the Scientific Council
of Khachatur Abovian
Armenian State Pedagogical University

Department of Philosophy and Logic
named after Academician Georg Brutian

W I S D O M

Special Issue 1(2), 2022
PHILOSOPHICAL ISSUES OF ECONOMICS

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YEREVAN – 2022

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EDITORS' FOREWORD

Nothing happened in various epochs of human existence without fundamental philosophical ideas within which people's political, economic, and social lives were built. Philosophy gives rise to the process of creating innovative technological breakthroughs, among which biotechnology, artificial intelligence and other smart technologies appear prominently distinguishable. These technologies keep gaining ground within all the possible contexts, tackling social, economic, and political issues. Therefore, it is necessary to focus on responsible decisions that consider the moral aspect and take seriously the opportunities provided by new technologies and the risks associated with their implementation for the sake of future generations.

The proposed issue of the philosophical journal WISDOM presents the individual concepts of leading scientists of Armenia, Russia, and Ukraine, which will help comprehend the problems of economics from philosophical perspectives. Some conceptual and methodological decisions in the special issue were presented in the International Forum "Transhumanism. Anthropological, ethical, legal and theological challenges" 29-30th of May 2019 in Madrid, Spain (Comillas Pontifical University (Spanish: Universidad Pontificia Comillas) ICAI-ICADE) and in the International Congress Razón Abierta "Transhumanismo: ¿Homo sapiens o cyborg?" in Madrid, Spain (Francisco de Vitoria University, 17-18th of June 2021).

The Armenian State Pedagogical University and Editorial Board of WISDOM are pleased to present the first special issue of the journal on "Philosophical Issues of Economics". The articles presented in the issue reflect issues of current relevance in the subject-matter area of study. The issue includes 20 articles.

The guest editors of the issue are Artur ARAKELYAN, Doctor of Economic Sciences, professor of the State University of Management, Moscow, Russian Federation, and Yulia VORONTSOVA, PhD of Economic Sciences, Associate professor of the State University of Management, Moscow, Russian Federation.

The Editorial Board extends their sincerest gratitude to all the authors, reviewers, professional critics and assessors of the papers involved.

The positive feedbacks, observations and achievements on the already published issues of the journal are evidence of the importance and value of the articles published so far.

Given the significance of the underlying principle of pluralism over scientific issues and freedom of speech, we should remind that the authors carry primary responsibility for the viewpoints introduced in their papers which may not always coincide with those of the Editorial Board.

DOI: 10.24234/wisdom.v2i1.783
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ON IDENTIFICATION, IDENTITY, AND SECURITY ISSUES IN MODERN ARMENIA

Abstract

In the current era of constant change, it is necessary not so much to rely on the past with its value system but to surmise the development tendencies of the civilization and clarify one's place and role. In the modern world, it is a shift of identification crisis followed by identity crisis as values change due to the global economy, creating a consumer character for whom identification and identity issues are secondary. A human strives to be in a security zone where a free-market economy and better living and working conditions are possible.

The authors of the article aim to propose and substantiate the idea that the above-mentioned makes the observation of security, identification, and identity issues in Armenia relevant.

The following methods have been used parallelly during the study: general-worldview, dialectical, general-scientific (of analysis, combination, comparison, and systematic, logical and historical), private-scientific, and descriptive.

The authors have concluded that the achievements that withstood the test of time should be preserved while upgrading the national identity in modern Armenia. The Armenian society should be transformed with the right measured steps priorly. Afterwards, the transformation of political institutions will proceed more naturally and properly.

Keywords: security, identity, identification, globalization, crisis, state-centeredness, culture, civic consciousness.

Introduction

The threats of the modern world are severe, the state of the world order is unstable, and various crises are taking place successively or at the same time. Globalization, information explosion, dangers of man-made and natural disasters, racial, political, religious, and the expected ongoing world reconstruction on economic and geopolitical grounds. Here is an incomplete list of external challenges to national identity in any country, often compounded by rather severe domestic political issues.

European countries, the United States, China, and Russia, are currently in a transition phase. Due to that fact, Armenia is no exception. The geopolitical and geo-economic place of the country in the world, the preservation of its own identity, sovereignty, and territories, i.e. the preservation of the state, depending on the solution of this situation and the formation of national-civil identity.

National identity is directly related to national security issues, and it is the condition of having a solid state. According to Francis Fukuyama (2018), the absence of development of national

identity can lead to the division or destruction of the state and civil war.

In addition, national identity within a state or nation increases the trust between its members, maintaining dialogue, harmony, and consensus and reducing the likelihood of a critical escalation of a constant struggle for resources and power among different groups.

The existence of a national identity can also be one of the conditions for the country's economic prosperity. It is a vital factor for the existence of a stable state, and in crises, it is a condition for maintaining statehood. The absence of national identity can lead to a crisis of state institutions, the aspiration of local elites for autonomy or independence, and an increase in irreversible emigration flows. At the same time, other forms of identity (racial, religious, regional clan, etc.) may become more pronounced, which ultimately leads to a decline in state governance or obstacles to development.

Living in politically and socio-cultural conditions that are significantly different from the past, the question of the national identity characteristics also becomes an issue for the development of strategies following the development trends of the civilization. In the current era of intercultural competition and geopolitical conflicts, superpowers and geopolitical centres present often impose their concepts of political, economic, and socio-cultural organization of life, where the emphasis on the use of national systemic factors changes, especially when it comes to political culture. In such a situation, when it is difficult to fully ensure the continuity of national identity and socio-cultural security through a system of traditions and customs, the problem of making political-cultural choices in alternative situations arises, as the organization of national life has become a political choice and orientation in modern civilization.

In addition to the mentioned external factors, we notice two "opposite" tendencies in Armenia, which are more pronounced, especially in recent years. Society is faced with the dilemma of national-patriotic romanticism (which expresses the homeland) and political realism (which expresses the state) (Harutyunyan, 2004). In the first case, we are dealing with the notions of the historical homeland, the Armenian Genocide, and the claims. In the second case, we are dealing with pragmatic notions. Moreover, this debate is accompanied by mutual labelling. The former considers the latter "anti-national", and the latter considers the former "adventurous". The following question arises: why the claimant cannot be pragmatic and why the pragmatic should be anti-national. From the well-chosen synthesis of these two "opposite" theses, one can derive a new vision of the political future and perhaps the modernization of national identity.

National identity is not a perpetually immutable phenomenon, although many believe that we have been formed for a long time as an ancient nation, and we have formed a final national identity. Here is the delusion that the formation of national identity is a continuous and constant process which occurs spontaneously and due to the conscious efforts of the leading members of society.

Factors of Preservation of National and Cultural Identity

The word "identity" has many meanings and can have different meanings in different philosophical contexts. A person's identity is formed due to the human features, the peculiarities of the culture, and the integrity of the individual characteristics of a specific person. National identity as a whole, like individual self-identification, is not a purely objective phenomenon, but "national identity presupposes an identity of national thinking" (Abrahamyan, 1995, p. 22). In traditional societies, individual identities are formed collectively under the influence of cultural identities. National identity presupposes devotion to the ideals of that identity. It can, of course, change, constantly being replenished by various conditions and factors. Due to modern social developments, particularly globalization processes, the state's former role and significance are also

being transformed (Atoyan, 2014). At the same time, the layer of culture typical to the nation also loses its "vertical borders".

Furthermore, as globalization is a process of increasingly transparent economic, social, political, and cultural boundaries, "anti-cultural" and "anti-national" identities can emerge. The individual identification of persons bearing these identities is shaped not by the influence of a cultural layer that has been strengthened over the centuries, tested over time, to ensure the fullness of a given ethnicity or nation, but by various symbols, heroes, traditions, and values imported from abroad. This is often done without even the individual's realization through the "mass mediators" of the information society, i.e. through the Mass Media (Petrosyan, 2012, pp. 11-12).

In the past, a unified system of symbols, rituals, heroes, and values was used to guide people who had not achieved the integrity of identity, enabling them to develop a sense of belonging to that community. That means forming a stable collective identity was possible without forming an individual identity. Meanwhile, in the modern era of globalization, people who have not yet reached the integrity of individual identity are stalked by a variety of thoughts, worldviews, and spiritual groups originating in different parts of the globe that seem to be more attractive in conditions of quasi freedom of choice removing a person from the collective identity historically given to him/her.

Peculiarities of Armenian Identity Crises

Transformational processes are taking place both in the world and in the Armenian society, as a result of which the old identities are being reinterpreted, becoming the basis for the formation of new identities. The transition from the old to the new is usually expressed in crises. At the same time, referring to identity crises, we should note that they have a wide demonstration area, expressed in the context of both individual and national identity. An identity/identification crisis often appears in breakthrough situations when an individual or nation goes through transformative and transitional stages. For example, social upheavals, revolutions, transitional societies, etc. Identity crises arise when the pillars of identity – *the language, the religion, the culture, and the national thinking and mentality* – are in danger of losing their independence.

Armenians have experienced various stages or shifts in national identity crises from the past to the present, which have arisen in critical times when foreign culture has taken precedence and the danger of assimilation appeared. Then the issue of self-identity definition raised questions that did not have clear answers (for instance, "Who is an Armenian? How does an Armenian national identity differ from the identities of other nations? What are the state, the nation, etc.?").

To highlight the manifestations of the identity crisis in Armenian, it is necessary to consider the apparent stages of the identity crisis, which can be presented by the example of the analysis of *the language crisis*.

From the past to the present, the Armenian identity has gone through several stages of an identity crisis. The observation of the identity crisis can be conditionally started from the invention of letters, which was the first manifestation of the language crisis. When the ideas of Christianity were even spread in Greek and Assyrian in the 4th century, there was a danger of assimilation and loss of identity, so it was necessary and urgent to create the Armenian script first to overcome the identity crisis and then to avoid assimilation. The first stage of the identity crisis was overcome when a considerable amount of translated literature was created, and writing and literature experienced an awakening. Subsequently, national life had a linguistic basis in terms of identity, and somehow *national self-consciousness* was formed, which became the cornerstone of the preservation of identity in later centuries.

The second stage of the language crisis in identity is manifested in the XVIII century when a nation deprived of statehood for many centuries was in danger of losing its national identity.

Classical Armenian (Grabar) was incomprehensible; the connection with the past was shattering, being Armenian was identified as a Christian, and the notions of *nation, homeland, and identity* were pushed out of this chain. There was a need to create a linguistic connection between the past and the present. This identity crisis was overcome thanks to *Mkhitar Sebastatsi*. By establishing the Mekhitarist Congregation and giving a boost to the creation of translated literature and studying the heritage of the past, he once again linked the Armenian to his/her historical memory, culture, and language of the time. The criterion of considering oneself an Armenian has changed: the principle of serving the nation was promoted regardless of religious denomination.

However, this crisis of identity was overcome only in linguistic terms. As already in the XIX century, the identity crisis had different manifestations, which were united around the following issues: *forming a national mindset and creating statehood*. In the XIX century, the basis for these two ideas was defining and forming the ideas of nation, homeland, national thinking, and mentality. Attempts were made to educate patriotic and compassionate individuals through education and upbringing and finally to become independent and restore statehood. These ideas, however, were not fulfilled. The transition ultimately overcame the linguistic stage of the identity crisis from Classical Armenian (Grabar) to Modern Armenian (Ashkharhabar), which, on the one hand, seems to have solved the linguistic crisis and, on the other hand, deepened it (this issue, however, is not included in this study). At this identity crisis stage, the need to develop a national self-consciousness emerged.

At all stages of the formation and preservation of the Armenian identity, the identity crisis seems to have been latent. At each stage, "surviving" the loss of identity, the Armenian, not overcoming the identity crisis, again and again, isolated himself/herself from the world, waiting for the turning point of his/her history when, through the efforts of prominent intellectuals, the Armenian will preserve his/her identity for a moment, isolating himself again and waiting for the next identity crisis.

The Post-War Stage of the Identity Crisis

The other turning point in Armenian history was expressed by the identity crisis that arose against the background of the existing acute conflicts of 2020. The independence of 1991 pushed the collective image of the Armenians into a "sleep mode", bringing them to a state of self-deception about illusional security. Living in a transitional and transforming society, the ideas of nation, homeland, and state were again subordinated to "Me" - individual, family chain. In a state of war, the ideas of *Homeland, Nation, and State* were to be pushed forward, but when the collective image of the Armenians was isolated from the world, that same world was rapidly transforming, quickly becoming technocentric. A new paradigm appeared, and reality's socio-cultural and economic picture changed. Subsequently, the identity crisis, which manifested itself within the Armenian society, turned into incapacity. It became apparent that the Armenian society's image of itself and its means of distinguishing the world were no longer relevant. The early XX century's call to awaken self-consciousness by the famous Armenian philosopher Hayk Asatryan (2020) was up-to-date. The awakening would bridge the Armenian to the reality of his/her time, aware of the crisis and the lack of a national vision. It is known that the Jews said goodbye to each other and wished each other "the next meeting in Israel" because they had a national vision. The Armenian needed such a national vision, which could be realized only by awakening the consciousness.

In the state of a post-war or ceasefire, Armenian society needs updated content of the "the national ideal", which is lacking. As a result, when there is no tool to recognize the world or express oneself in it when the pillars of identity are uncertain, identity modernization becomes urgent.

In general, one of the problems arising from the transformation of identities in Armenia is that if the political balance in Armenian society differs significantly from the balance of geopolitical forces competing in Armenia and the region, they pose significant threats to Armenia's national security and national interests.

However, there is not only a completely logical process of forming a new identity in Armenia but also a serious identity crisis. The crisis of identification is generally one of the most painful life experiences. An individual experiencing such a crisis doubts the value system he/she has previously practised, alienating himself/herself from his/her formerly loved ones, which in turn exacerbates the crisis. Thus, a process of "inventing the spirit" (Oshakan, 1982, p. 444), which must define and establish the Armenian identity, becomes primary and urgent. Moreover, national identity crises occur when a person, for one reason or another, becomes disillusioned with the values and behaviours relevant to his/her relatives, denies national identity through memory loss, and disbelief in a shared future or other forms. Such a crisis is experienced, e.g., by our compatriots who, living abroad, accept its existing value systems, and returning to Armenia and meeting with some realities contradicting their values and ways of behaving, begin to reject the basics of Armenian identity. However, these negative realities (social injustice, corruption, etc.) cannot be identified with the whole Armenian identity. Sometimes, such conclusions justify their aspirations to emigrate and live in more comfortable conditions. Another example of self-denial is the ignorance of national cultural heritage and the desire to identify immediately with certain favourable circumstances in foreign cultures. The crisis of modern Armenian identification is connected with the third reason - the non-acceptance of the defeat in the war and the desire to get away from it as much as possible. K. Zaryan's (1987) statement is correct: "Armenia is a country that has no direction. It has a height. At every step there is a wall, on the wall a piece of sky - stars, sun, and under it - a gorge, an abyss, a chasm" (p. 59).

Ways to Solve the Current Crisis of National Identity

Avoiding the approach of asking questions and leaving their answers pending, let us try to point out the ways that may be the way to overcome the identity crisis. Z. Freud (2020), explaining the question of the relationship between the unconscious and the conscious, puts forward the concepts of "resistance" and "expulsion", which mean the following: when the aspirations of the unconscious are resisted or not expelled, from that moment on, in colloquial language "dead spots" and neuroses in the language of psychoanalysis, arise (pp. 8-9). Carrying this theory of Freud into the field of national identity, it becomes clear that to overcome the local crisis in the Armenian identity, and one must first start from the path of turning the national unconscious into consciousness. That is, to bring the ideas of power, invincibility, being the best attributed to the Armenians to the field of consciousness, to evaluate and leave in the national memory, modernizing the formation of "living" ideas of the homeland, nation, and state, for instance, "What is the perception of the Armenian society about the Homeland? Is it material or spiritual? How should these two be embedded in the nation's ideas? How should they become the pillars of the state?".

If in the past the basis of Armenian identity was the following components: national religion, language, national culture, Genocide memory, and traditional Armenian family, now the new foundations of national identity can contribute to the implementation of our national challenges: the idea of Armenian statehood, Armenian culture, the question of the restoration of historical justice.

The idea of Armenian statehood. One of the most painful crises observed in modern Armenia is connected with the state mentality. Centuries-old absence of statehood was manifested in the absence of "state thinking skills" (Melik-Shahna-

zaryan, 1999, p. 32) at both the individual and national levels and in the presence of "political naivety" (Shant, 1925, p. 15). The function of making political choices is particularly emphasized because the culture of organizing the domestic life of the Armenian people does not have a clear political orientation. Due to historical circumstances, the Armenian people did not live in the conditions of statehood permanence, and its historical and political homelands did not coincide. "At the same time, the moral and aesthetic absolutism of the historical homeland has created an ideal that embodies the past, in comparison with which the political homeland loses its attractiveness and value for many people because of its troublesome daily life, endless problems, and new challenges" (Demirchyan, 2021, p. 28). The mentioned facts prove that the Armenian does not have a consistent state thinking and does not consider the state as a precondition and guarantee of his/her own socio-cultural identity and continuity. Armenians tend not to improve their living within their state but seek a more prosperous life outside the state (Demirchyan, 2013). At the same time, he is always accompanied by the indelible image of the historic homeland, which often deviates from the critically vital and urgent issues the state is facing and from the need to find ways to solve them. Hence the mentality that it is possible to remain Armenian in foreign countries by preserving the language, the culture, the historical memory, and the religion. Like-mindedness indicates a clear political orientation and a lack of political thinking, whereas, in today's competitive world, pre-political nations must become political, heading for the future, reviewing the path rather than rejecting some traditional notions.

It is noteworthy that the Armenian people treat the world with "We", with an identification, the peculiarities of which are the definitions of "sacred country" and "national originality". Nevertheless, in the modern processes of globalization, the "society of habits" is no longer viable. Misunderstandings of national and civic identities and unfounded and unnecessary contradictions do not contribute to the establishment of harmony between national and civic interests. In the case of national identification, human attitudes and responsibilities towards the state are based on patriotism, while in the case of civil identification, they are based on laws. In Armenian society, a gap has been formed between the "political elite" of the people and between the national and civic affiliations of the people.

To resolve the "dilemma" of the homeland and the state, the nation should become a bearer of civic self-consciousness. Therefore, in the XXI century*, the idea of national statehood* can become the basis of the national identity of the Armenian people. In a general sense, it leads to the idea of creating a solid Armenian state as a guarantee of existence and development of all Armenians, as independent statehood on one's soil is the main guarantee of physical and mental survival and prosperity, preservation of national identity (Hakobyan, 2002; Katchaznuni, 1979). The idea comes to the image of state-centeredness because, in this case, the interests of the state, its security, and development issues take precedence over the individual, group, party, and other interests. The primary concern of every Armenian or group of Armenians (whether in the Homeland or the Diaspora) should be strengthening Armenia as a national state of all Armenians. National identity indeed has many components and bases, but the idea of state-centeredness differs as it has no divisive nature and is free from sectionalism. On the contrary, it unites Armenians of different languages and religions, belonging to or sympathizing with different parties, living in different regions and countries around one common idea (Hovyan, 2019).

Samuel Huntington (2004, p. 29), one of the most prominent representatives of American political thought, distinguishes two national identities: civic and ethnic. Armenia is the case where the two mentioned types of identity do not oppose each other and are harmoniously combined. Due to the historically formed and strengthened national self-consciousness of the Armenian people at the level of individual and collective

perceptions of ethnic unity of Armenia and Artsakh, the civic-territorial ethnic-genealogical forms of identity unite to form a whole.

Armenian culture. At the core of the cultural layer are values. This means that they are the most ingrained in the identity of the people who bear the culture, hence the least endangered, because "national identity contains the feelings, ideas and institutional memory formed in the past" (Harutyunyan, 2019, p. 4). The current level of the historical development of national culture is manifested in a new form of the state, which, along with culture, is one of the factors for the preservation and development of national identity. The development of culture creates an opportunity to search for ways of defining and pursuing national interests. "In our world striving for cultural homogeneity, though the role of the nation's historical and cultural heritage may be crucial in organizing "spiritual self-defence" in the context of modern civilizational transformations, the role of historical and cultural heritage is not so much to build socio-cultural barricades as to be receptive to those transformations and the ability to modernize national life" (Harutyunyan, 2019, p. 6).

To adapt to the modern processes of globalization and the rapidly changing reality, it is necessary to subject the social way of life to rational analysis and re-assessment. The basis of a traditional society is a traditional culture, the core of which is the norms passed down from generation to generation through the same traditional upbringing. In a traditional society, the culture is the primary factor in people's socialization, which is difficult to undergo changes or modernize because every change in the norms of mentality and lifestyle, rooted in the centuries, is perceived as a threat to identity. The closed system, guided by habits, fears a free-thinking civic lifestyle, accessible relations, and the attenuation of traditional and moral viewpoints. In the prolonged absence of statehood, the Armenian society tended to operate in isolation from the outside world, which, in turn, led to the formation of a stable cultural system. Meanwhile, in the context of modern processes of globalization, national and cultural models must move from a stable state to a dynamic model to maintain their viability. The way to transform from a traditional nation to a political one presupposes a rational analysis of the traditional cultural system and identity modernisation.

On the whole, the discussion of national issues at the state level is credible only in the presence of free thought, in the absence of ideological control, so it is not accidental that "during the years of independence, it was possible to prioritize national interests, which is because only in the state system all the national creative potential is revealed" (Demirchyan, 2018, p. 31).

The question of the restoration of historical justice. Especially in the last century, the most influential factor uniting Armenians living in Armenia and outside the Homeland is the collective historical memory connected with historical justice, ensuring the vitality of the nation and its claims. All this can be presented as a national interest. This can be presented as a national interest. At present, along with the need for international recognition and condemnation of the Armenian Genocide, the question of historical justice may also relate to the demand for the realization of the right of the people of Artsakh to self-determination and security.

Moreover, these are the challenges for implementing both the Armenian state and the Diaspora can jointly fight. Though the existence of an independent state has created a qualitatively new situation for the Armenians, not all national problems can coincide with the problems set by the state. According to A. Voskanyan (1995), the Artsakh movement, which began in 1988, was a fundamentally new attempt to understand national identity, which sought to oppose the reasonable assessment of the current political events to the abstract vision of a united Armenian homeland, aiming at the practical problem of real statehood in the preserved territory. "Certainly, it did not intend to give up the historical memory, the issues of the Armenian question (the Artsakh issue itself refers to that sphere). However, the

Movement, at least in the first stage of its development, assumed that the traditional problems of the Armenian question could be temporarily "enclosed in brackets", unequivocally distinguishing between politically and legally recorded state interests and emotional experiences of national history" (p. 19).

Conclusion

Changes in the world are also reinterpreting the essential concepts, prioritizing the terms of security, identification, and only then the term of identity. The formation of national identity is a continuous and constant process that occurs both spontaneously and due to the conscious efforts of the leading members of society.

The crisis of identity and identification often manifests itself in breakthrough situations when an individual or nation goes through transformative and transitional stages. At all stages of the formation and preservation of the Armenian identity, the identity crisis seems to have been latent.

In the final turning point of Armenian history, during the 44-day war in 2020 and afterwards, when a new paradigm was established in the world, it became clear that the Armenian society's idea of itself and its means for distinguishing the world were clearly no longer relevant.

In the state of a post-war or ceasefire, Armenians need updated content of the homeland, nation, state, and national ideal, which is absent. As a result of not having the means to distinguish the world and express oneself in it, and when the pillars of identity are uncertain, the process of identity modernization becomes urgent. If in the past the basis of Armenian identity was the following components: national religion, language, culture, Genocide memory, and traditional Armenian family, now the new foundations of national identity can contribute to the realization of our national identity: the idea of a solid Armenian statehood, Armenian culture, the question of the restoration of historical justice.

The idea of national statehood, in a general sense, comes from the idea of creating a robust Armenian state as a guarantee of the existence and development of all Armenians. The idea comes to the character of state-centeredness. It has no divisive nature and is free from sectionalism; on the contrary, it unites Armenians of different languages and religions, belonging to or sympathizing with different parties, living in different regions and countries around one common idea.

The development of culture creates an opportunity to search for ways of forming and pursuing national interests. In the context of modern civilizational transformations, the role of historical and cultural heritage is not so much to build socio-cultural barricades as to be receptive to those transformations and the ability to modernize national life.

Especially in the last century, the most influential factor uniting Armenians living in Armenia and outside Armenia is *the collective historical memory connected with historical justice, ensuring the vitality of the nation and its claims.* This can be presented as a national interest. In addition to the need for international recognition and condemnation of the Armenian Genocide, the issue of historical justice may also relate to the demand for the realization of the right of the people of Artsakh to self-determination and security.

In the conditions of the modern challenges of globalization, the national culture, the historical pillar of the Armenian national identity, and its core, the Armenian language, are seriously endangered. There are tendencies not to analyze the Armenian history and destroy the historical memory. Therefore, today we must add one phenomenon to all the rest that unite Armenians for a tremendous potential for unification: i.e. the principle of a shared future and vision. It ignores factors that separate society and individuals: territorial, religious, linguistic, and other factors within the nation.

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DOI: 10.24234/wisdom.v2i1.772
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BUSINESS PHILOSOPHY: MODERN TRENDS AND DIGITAL SOLUTIONS

Abstract

This article focuses on the modern vision of business philosophy. The authors of the article correctly substantiated the significance and extreme need to use philosophical knowledge and thinking both during the initiation and implementation of entrepreneurial ideas and during the practical implementation of entrepreneurial activity and direct business. Modern realities give the businessman the opportunity for independent choice, and a professional approach in business conduct is essential. The philosophical thinking of the entrepreneur, according to the authors, is the way to efficient business. Mastering the philosophy of business and the practical use of its provisions will ensure sustainable long-term success in the entrepreneurial environment. The realities of pervasive digitalization can fill with new semantic content modern processes in business with the parallel natural development of morality and culture. The new digital ecosystem is designed to combine the brilliant potential of the machine with an unsurpassed human mind to introduce technological innovations in business structures at the most favourable level.

Keywords: business, philosophy, digitalization, idea, person, technology, education, morality, digital ecosystem.

Introduction

In the social structure of Russian society, a relatively large segment of the population represents a serious component, choosing business and entrepreneurship as the way of its existence. Global virtualization and the development of private initiative, the dynamic development of competition and the promotion of entrepreneurship, and the modern challenges of the informatization of society actualize the need to rethink the philosophical vision of the direction of business activity, in particular, and business in general. Of course, the modern trend is a significant increase in interest in philosophical knowledge: the business itself and the individual involved in it are included in the concept of the world, in the system of his knowledge.

In foreign and domestic literature, scientific interest in research issues is actively manifested: these are the works of classics such as M. Weber, J. Schumpeter, and V. Zombart, and the work of the Soviet school of philosophy, performed at the intersection of philosophy and economics (V. Ya. Elmeev and others), as well as the latest works of Russian researchers: Enikeeva A. A., Skripko V. I. (2016), I. Ivchevski (2022), J. Uriah (2018), etc. Of great interest are the works of Yu. Vorontsova (Vorontsova, Gil Martínez, Arakelyan, & Yeremyan, 2021), A. Chernyshov (2018), I. Dzyaloshinsky (2020), A. Timchenko and A. Tymoshenko (2020) devoted to issues of philosophical knowledge in the conditions of digitalization.

The philosophical and conceptual understanding of the philosophy of business developed in parallel with the economic practice of economics; however, it is worth noting its fragmented

nature and emphasizing the need for further research.

Philosophy and Business: The Realities of Our Time

Humanity has taken a huge step forward with the development of new technologies and the introduction of Internet technologies in all spheres of life (Baurina, Khudyakov, & Uchirova, 2020). All this forces us to change preferences and the current view of the surrounding reality. For this reason, the appeal to a new philosophical thought is very relevant today. On the one hand, a business can be interpreted as extracting material wealth from ideas and activities. If you look from a different point of view, then this is fundamentally new thinking that can rationalize and improve.

All possible solutions in business are very banal and well-studied: it is difficult to surprise others. The philosophy here helps expand the range of familiar concepts and look at familiar things differently. In the course of learning philosophy, the human discovers new knowledge and expands the idea of the world and its structure. Establishing causal relations makes it much easier to "fountain" ideas, initiate new and sought-after solutions, and bring really new and necessary ones to the world.

Philosophy treats history as a cyclically developing mechanism, which simplifies understanding the modern picture of the world and its consistent development. Modern challenges of reality that directly affect human life are not stopped for a moment, and they are continuous and unpredictable (Geert, 2022). The digital economy's completely new reality is based on digital, electronic technologies (electronic business, the Internet of things, electronic commerce, etc.). On the other hand, the digital economy is all transactions (business, economic, cultural, social) on the Internet made thanks to digital communication technologies.

The philosophy of modernity is designed to help the individual navigate the surrounding information streams and quickly select and process the necessary information. Overstated personality requirements pose a severe problem for spiritual development. It is not easy to find a consensus on the artificial principles of a prosperous life (career, work, money, consumption, etc.). and the natural desire of a person to comfortably perform his natural functions (health care, family creation, rest, etc.) with

Modern realities bring a person under the independent choice of what he wants to achieve in life, which is more essential for him at this moment. It is essential to learn how to allocate time and find a balance between duties and hobbies.

Philosophical Thinking of the Entrepreneur - the Way to Efficient Business

In the modern entrepreneurial environment, many examples confirm the growing interest in philosophical education, at the same time, business benefits. For example, former IT specialist D. Horowitz, relying on the knowledge of philosophy obtained at Stanford during training, developed a new vision of the search engine, thanks to which he was able to advance on the career ladder successfully. Man, in his opinion, should perceive modern technologies not as things that facilitate life but as an integral part of the culture of the appropriate stage of development. The crushing, the main word will always remain with the person because it is he who thinks, and the role of technology is secondary since it only helps him. This approach helped create a new search engine based on the social interaction of man and technology.

The career of D. Horovitz demonstrates the value of philosophical education. The PhD is successfully applied in the business environment and allows you to make competent organizational change and innovation decisions. Many successful tech entrepreneurs and innovators (R. Hoffman and St. Butterfield, founders of LinkedIn and Flickr; E. Tenner, a journalist for Atlantic) have a philosophical education that al-

lows them to apply critical thinking skills in various projects that satisfy the needs of society.

Philosophy has proved its benefit in the world of business and technology. We have many examples that philosophy has become the cornerstone of great innovation and innovation. Surprisingly, philosophy and entrepreneurship are complementary and well suited to each other.

Moving away from a business worldview, which is based exclusively on ideals, is very popular. Its essence lies in the source of knowledge that comes from the surrounding reality. It is appropriate to consider crises and defaults in the economy as "educational situations" (Srivastava & Statler, 2012).

Authentic learning and reflection are based on practical experiments, incredibly unsuccessful ones. You can truly understand that you are successful only if you have ever endured a "fiasco". This insight is the banalest and familiar for many professions. Lawyers teach laws and their application to crimes, and doctors try to treat diseases based on experience. That is the essence of the philosophical approach: a person has a chance to understand: who he is and how he behaves. Total concentration on success takes the entrepreneur beyond his limits and limits his thoughts.

A much broader topic than "success" in philosophy is "failure". Business needs a philosophy of "failure," which can translate real problems into a meaningful experience and a source of knowledge. The existence of economic systems is primarily determined by failures (bankruptcy of enterprises, limitation of their liability, etc.) with the simultaneous search for social, legal and philosophical ways to circumvent restraints. Obviously, any new business philosophy should be based on the concept of experiencing an unsuccessful experience rather than on the cynical ideal of success.

Entrepreneurial flair skills are developed precisely by philosophy. Strict standards of argumentation, analysis and the search for new approaches make it possible to master critical thinking skills and make competent decisions in various areas of activity. Similarly, entrepreneurs need to look for and understand the unique capabilities of existing markets.

A deep understanding of philosophical questions (What is a person? What is life? What is culture? What is society?) gives more prospects when creating and supporting a business than purely economic business education. The humanistic point of view on social laws and processes of being, philosophical thinking and representation of the modern picture of the world make a potential candidate more prosperous and promising for a particular position. Critical thinking skills acquired and developed within the framework of a philosophical education are likely to be useful both for the profitable investment of startups and for solving global existential problems.

Digital Reality and the Future of Business Philosophy

Global virtualization of production, new challenges and challenges of informatization of society force modern businesses to radically change their production processes to maintain a competitive position in the market. The concept of smart manufacturing and smart factories is aimed at combining machines, people, information and value chains into a single network (Abdrasilova, Umnyakova, & Kakimzhanov, 2019). Giving new impetus to productivity determines new opportunities to increase efficiency.

Some companies expect the results of the use of smart technologies from the "leaders", others are limited in finance and do not dare to invest in modernization, and the shortsighted simply do not see the point in this. One can endlessly deny the need for a digital "upgrade", but the fact remains: behind the "smart production" is the prospect and the future. The failure of the business to make technological changes hampers the digitalization process and is a serious threat to the loss of competitiveness.

The pandemic certainly had an impact on the ongoing business changes. Increasingly, the business of the Russian Federation is moving

away from Soviet stereotypes: noisy production, a large team, and outdated equipment (Bauer, Eryomin, & Smirnov, 2021). Enterprises increasingly rely on innovation: innovations in optimizing costs and accelerating business processes, increasing productivity and production efficiency, improving product quality, etc.

Projects for digitalization of production are actively advancing in the Russian Federation: new plants are being built within the framework of the Industry 4.0 concept, and machine learning and artificial intelligence are being introduced (Winkelhaus & Grosse, 2020). Economically efficient projects are of interest.

The constant increase in the cost of production, the presence of a mature market, the retention of competitive positions in the long term, and the desire of enterprises to increase the margin of business encourage enterprises to introduce smart technologies (Vorontsova, Arakelyan, & Baranov, 2020). Enterprises interested in digital technologies prefer the following types of solutions: accurate digital modelling of all elements of the production process; analytics and BigData; orchestration of all production systems (production, non-production). In addition, the stability of systems under external influences and cybersecurity are very required. Also popular are additive technologies for "growing products", augmented and virtual reality, production process control systems (MES), machine vision systems operating "digital twins", forecasting analytics systems, etc.

For business digitalization, it is critical to move from multiple on-premises IT solutions to single platforms and standards and migrate infrastructure to clouds accordingly. The pandemic clearly proved the demand and importance of ensuring the operability of production systems in crisis conditions. For sure, many manufacturers will think about increasing the automation of production processes and ensuring the integrated safety of personnel. Contactless technologies, intelligent cloud video surveillance systems and AI-analytics of production processes (Lu, Liu, Wang, Huang, & Xu, 2020) will gain great popularity. Obviously, such solutions will establish a system for quick response to crises and help to correctly predict them, which, in the end, will reduce financial losses and, without a doubt, will increase the efficiency and competitiveness of the business.

It is popular opinion that in today's model of the world order, humanity, as a whole, dissolving into a global digital network, loses the meaning of its social existence. Digital technology, obviously, should fill modern processes in business with new semantic content. They will have to act as a continuation of morality and culture, their natural development.

Modern business system integration and analytics should combine modern advanced thought and experience of past generations (King, 2018). The new digital ecosystem will combine the knowledgeable capabilities of machines with the most potent intellectual stress of the human mind and allow you to build the necessary algorithms for working with the masses of information to obtain high-quality content. Such an approach can become the foundation for making verified strategic decisions in business and allow transformations to be carried out in the most positive way possible.

Russian thought, abandoning archaic technocratism and economism, can offer the world community a historically established own vision of the trajectory of a new socio-humanitarian picture. An undeniable advantage in assessing lessons can be given by an inevitable delay in Russia in matters of digitalization relative to developed countries. First of all, this will be relevant in preserving and increasing human capital.

Discussion

This article's scientific novelty consists of valid justification of the importance and need of using philosophical thinking when realising the enterprise ideas, adopting competent perspective business solutions within unique opportunities of the existing markets, and implementing business activity and direct business. Authors worked out

basic approaches to business digitalization which development and practical application will provide steady long-term success in the enterprise environment in the conditions of digital transformation. The new semantic content of digital technologies in business includes the natural development of morals and culture that will allow the creation of the necessary operation algorithms with arrays of information for receiving qualitative content.

Conclusion

Thus, philosophical knowledge in the modern business world is very demanded and vital. The philosophy expands a circle of habitual concepts and allows us to see familiar, apparently, things under other foreshortening. The person, thanks to philosophy, opens up to new knowledge and expands ideas of the world and its device. Establishing relationships of cause and effect, it is much simpler "to gush forth" the ideas, initiate fresh and demanded decisions, and introduce really new and necessary to the world. Skills of enterprise intuition, initiation of fresh creative ideas, competent argument and critical thinking are developed by philosophy. In addition, this science is designed to orient the individual in numerous information flows and select and process the necessary information carefully. The humanistic point of view on life processes, philosophical thinking, and a clear idea of a modern picture of the world build up certainty and contribute to the success of a businessman. Philosophical judgment of digitalization of business comes down to the definition of a role and the importance of the person in the natural and natural and socio-humanistic planes today. Understanding this strategic development paradigm requires interpreting modern business's fundamental philosophical and methodological bases with a "figure in the head".

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DOI: 10.24234/wisdom.v2i1.778
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GENDER AND CAREER: TRENDS IN DIGITAL SOCIETY

Abstract

Digitalization of society, including the labour market, noticeably changes women's and men's career expectations and career strategies. Gender philosophy, questions about gender identity, and gender inequality are questions, the answers to which are critical: "the changes in the social status of women and men in our time have fundamentally changed many familiar stereotypes" (Mikhailova, 2011). Kontakt InterSearch Russia conducted a series of studies for Forb's magazine (Kontakt InterSearch Russia, 2021a, b, c; Forbs, 2021) that evaluated the career expectations of respondents; the qualities of managers that female and male managers lack; the presence and causes of gender discrimination; and "stop-factors" of career for men and women. It was found that female executives twice as often as male executives face gender discrimination; women more often than men consider their personal qualities as the reason for career success (men more often than women cite external aspects such as "mentor" and "good timing" among the reasons for career success). At the same time, experts noted that "the boundaries of "female" and "male" qualities are blurring" (Forbs, 2021). In our opinion, this is also due to the influence of digitalization, which is changing the content of many areas of activity.

Keywords: gender, gender discrimination, women's career, men's career, digitalization, digital transformation.

Introduction

The labour market has been changing noticeably lately. There are many reasons for this: changes in technology, political factors, changes in value systems, and much more. These changes also affect the balance of power of the main actors in the labour sphere, including relations between genders.

Problems of gender relations, including gender inequality and gender discrimination in the labour sphere, have been discussed in the scientific literature for quite a long time (Roshchin, 2003; Kalabikhina, 2008; Efimova, 2013; Grissom, Timmer, Nelson, & Blissett, 2021; Agénor, Ozdemir, & Pinto Moreira, 2021; Castagnetti, Rosti, & Töpfer, 2020; Redmond & McGuinness, 2020; Lysenko & Wang, 2020; Islam, Muzi, & Amin, 2019; Castaño, Fontanil, & García-Izquierdo, 2019; Castellano & Rocca, 2018; Sterling & Fernandez, 2018; Pettinicchio & Maroto, 2017; Hedija, 2015).

Nevertheless, in the context of the global digital transformation of society, this problem takes on slightly different content, as the content of some profession's changes and new professions (or lines of work) become less sensitive to gender differences, which leads to a change in career expectations of individuals and, subsequently, the realization of these expectations. This study aims to understand what changes are taking place in the gender relations of labour market actors under the influence of the digital transformation of society.

Sources of Research

The methods of scientific analysis and synthesis of statistical data, analytical reports, and sociological research are used in work:

1. Kontakt InterSearch Russia executive survey "Women's and men's careers - executive survey" (Kontakt InterSearch Russia, 2021a).
2. Kontakt InterSearch Russia research "How women and men in Russia build careers - Kontakt InterSearch Russia" (Kontakt InterSearch Russia, 2021b).
3. Kontakt InterSearch Russia research for Forbs' magazine "What kind of employees are companies looking for?" (Kontakt InterSearch Russia, 2021c).
4. Forbs magazine research "Women's and Men's Careers" (Forbs, 2021).
5. A study of the gap between men and women in basic compensation in state and national data (Grissom et al., 2021).
6. Analyzing the use of a gendered model of overlapping generations with labour market rigour (Agénor, Ozdemir, & Pinto Moreira, 2021).
7. A study of competitive public recruitment impact on male and female earnings using Italian microdata over ten years (Castagnetti, Rosti, & Töpfer, 2020).
8. A study of women's job satisfaction using data from 28 EU countries (Redmond & McGuinness, 2020).
9. Research on salaries of STEM college graduates in the United States for 2000-2010 (Lysenko & Wang, 2020).
10. A study of the impact of laws (legal gender disparities) that discriminate against women on their participation in the economy using data from over 59,000 firms in 94 countries (Islam, Muzi, & Amin, 2019).
11. The impact of gender stereotypes on decision-making procedures is analysed in psychosocial theories (Castaño, Fontanil, &García-Izquierdo, 2019).
12. Analysis of female and male labour market conditions and the gender pay gap (Castellano & Rocca, 2018).
13. Exploring the impact of internships on employment and earnings with gender (Sterling & Fernandez, 2018).
14. An analysis of the evidence on the multiplicative effects of gender and disability status on employment and earnings (Pettinicchio, & Maroto, 2017).
15. A study of the impact of managers' gender characteristics on gender wage inequality (Hedija, 2015).

The Main Causes of Gender Discrimination in Modern Society

In our everyday life, we are increasingly faced with the levelling of gender differences and the mixing of socio-role expectations of society from the behaviour of men and women. This is manifested in trends in consumer behaviour, marriage and family relations, and, of course, the workplace. However, at the same time, with this trend, which should, in fact, eliminate gender discrimination, the problem of infringement of the rights of women workers remains acute.

In our opinion, we identify the following principal reasons for persisting inequality.

First, it is the inertia of public consciousness, in which the role of women as "keepers of the home" and men as "breadwinners" is still quite vital. According to V. Efimova (2013), "there is a vicious circle: the burden of household duties does not allow women to realize their professional activities, which results in low pay. Furthermore, this, in turn, serves as an argument for their ultimate entrenchment in traditional social roles. Employers (according to L. A. Shatrova, 2003), believe that "women are less focused on professional activities, more focused on family and children, so they are not capable of high-professional activities". According to studies conducted by foreign scholars (Castaño, Fontanil, & García-Izquierdo, 2019), women continue to lag behind in gaining access to managerial positions because of discrimination at work. One

of the primary roots of such discrimination is gender stereotypes. They influence decision-making procedures because women are perceived as less suitable for leadership positions.

Second, the traditional division of professions into "female" and "male" (justified, in our view, in the pre-industrial and early industrial era, when there was a direct correlation between physical characteristics (such as strength) and labour outcomes but losing its relevance in the late industrial era and especially now in the digital transformation of production).

The third is the phenomenon of ingroup favouritism, whereby members of the ingroup (the group to which one belongs) are favoured over members of the outgroup (the group to which one does not identify oneself). This thesis is confirmed by the results of the Kontakt InterSearch Russia research for Forbs (Kontakt InterSearch Russia, 2021a; Forbs, 2021): according to the female respondents, their predecessor in the current leadership position was a woman in 50% of cases and a man in only 32% (18% of respondents had no predecessors in this position), while for men the situation is reversed: their predecessor in the current leadership position was male 66% of the time and only 15% of the time female (19% of respondents had no predecessors in the position). As we can see, women are more likely to get a job if their predecessor was also a woman, and men are more likely to take the place of men.

Of course, these are not all the existing reasons, and a description of them is the subject of a separate study. Nevertheless, as it seems, even the reasons mentioned earlier allow us to assume that gender discrimination exists and has prospects for further existence.

Gender Peculiarities of Career-Building

We conducted a comprehensive analysis of several studies containing information on gender specifics of career building for women and men.

The survey of managers conducted by Kontakt InterSearch Russia (Kontakt InterSearch Russia, 2021a; Forbs, 2021) confirms this: 48% of female respondents admitted that they faced gender discrimination (42% - sometimes, 6% - regularly), while men mentioned such situation only in 25% of cases. However, 25% of discrimination cases against men is also a pretty prominent figure. We are used to the fact that gender discrimination is almost always discrimination against women rather than men, but as we can see, there is also male discrimination, which needs to be examined more closely.

One of the consequences of discrimination is the presence of so-called "stop-factors" of career (factors that prevent further career growth). Executives of different genders highlight different "stop-factors" (Kontakt InterSearch Russia, 2021a; Forbs, 2021):

- male executives are noticeably more likely than female executives (31% vs 21%) to note that "there were no career-impeding factors."
- the main "stop-factor" career for male executives is "lack of connections" (this alternative is chosen by 46% of men and only 24% of women);
- the main "stop-factor" of a career for female executives is "intrigue in the business environment." This alternative was chosen by most female respondents - 38%. For men, this factor is second in importance after "lack of connections," it was noted as significant by 35% of male respondents;
- men and women in different degrees assess the influence of the family on their careers. The family is considered a "stop factor" by 9% of female executives and only 2% of male executives.

Perhaps this tiny percentage of respondents indicated that family is a "stop factor" because 43% of male executives and 59% of female executives admitted that they had to sacrifice family for a career. At the same time, 51% of women and 46% of men feel guilty because they pay little attention to the family, 21% of women and

11% of men said that they faced this feeling before but were able to overcome it, 43% of men said they did not feel guilty, among women the figure is 28%. As noted by Galina Spasenova, "It is very alarming to see that half of the women surveyed feel guilty about the family because of the inability to devote much time to it. Men also have this problem but to a slightly lesser extent. In any case, feelings of guilt are not constructive: a career gives us inspiration, financial stability, and self-actualization - it is important to try to make calm decisions, with an understanding of the well-being you give to your family" (Kontakt InterSearch Russia, 2021a; Forbs, 2021).

Natalia Karpova, CEO of Russian National Reinsurance Company (Kontakt InterSearch Russia, 2021a; Forbs, 2021), comments: "There are very few women in executive positions who do not actually choose between work and family, but skillfully combine them. It is a great art to know how to skillfully combine everyone's interests without compromising yourself, family, or work. It is something you have to learn".

"Growth Points" in Career Building: Gender Differences

Women are used to counting only on themselves in their careers: 78% named their personal competencies the main reason for career success, and 62% named diligence.

Men also named these factors as key for themselves, but much more often than women talked about external aspects, including the role of mentors (51%) and a lucky set of circumstances (47%). Men also rated the importance of training (53% of men and 38% of women) and non-training (21% and 12%, respectively) higher. Galina Spasenova (Kontakt InterSearch Russia, 2021a; Forbs, 2021) commented on these results: "It is interesting that women consider their competence and diligence to be the key reasons for their success. For men, these are also important factors, but also more weight than for women is given to constant training, network, external circumstances, and mentors. Men are much stronger regarding self-presentation and PR, while women are less likely to be self-promotional. However, as practice shows, it is crucial to learn how to use this tool". Confirmation that the tactics chosen by men are successful is the data from a study conducted by Kontakt InterSearch Russia, "Employees sought today and will be sought tomorrow" (Kontakt InterSearch Russia, 2021c). Among the tips on how to stay in demand in the labour market during the crisis, the first place is taken by "constantly learn new things" (94%), the second place is taken by "organize networking, making connections" (60%) and the third by "do self-promotion" (24%). As we can see, these are the competencies that male executives named as key.

Naming the personal competencies that caused career success, both men and women choose similar alternatives. However, there is complete overlap in assessing only a few key competencies: both named "flexibility/adaptability" in the first place (65% of male respondents and 64% of female respondents). The respondents assessed the following competencies almost equally: "leadership/influence" (49% of men and 50% of women); "stress management" (47% of men and 44% of women); and "analyticity" (44% of men and 42% of women).

In assessing the other competencies, the opinions of men and women differ more significantly:

- 52% of women and 44% of men chose the competence "communicativeness". According to Galina Spasenova (Kontakt InterSearch Russia, 2021a), "women were much more likely to name communicability, which means not only openness but also the ability to smooth over corners, hear the other and willingness to agree";
- the competence of "strategic thinking" is more important for men than for women (35% of the male respondents vs 26% of the female respondents);
- also, the "innovativeness/creativeness" com-

petence is more important for men (30% of the male respondents vs 22% of the female respondents);
- the "toughness" competence is also chosen more often by men (10% of the respondents) than by women (6% of the respondents).

Here are the comments were given by experts-representatives of top management (Kontakt InterSearch Russia, 2021; Forbs, 2021):
- According to Galina Spasenova, partner of Kontakt InterSearch Russia (Kontakt InterSearch Russia, 2021a), "Men emphasize innovation and strategic thinking: they experiment more often, are not afraid to make mistakes, and choose entrepreneurial courage... Men are much more likely to associate the future with entrepreneurship...Women are more cautious on this issue, but sometimes excessive caution only gets in the way";
- According to Evgenia Tyurikova, Director of Sber Private Banking (Kontakt InterSearch Russia, 2021a), "Women often underestimate themselves and underestimate their abilities. Sometimes you need an outside view to add confidence in yourself, your strengths and talents";
- According to Elena Bondarchuk, founder of GC "Orientir" (Kontakt InterSearch Russia, 2021a), "The main advantage of women over men is that we have business in the first place. Men spend a lot of time and effort competing, which is their psychology. We, women, do not spend time on this struggle for ambition";
- According to Juliana Gordon, founder of iWENGO business school (Kontakt InterSearch Russia, 2021a), "The current generation of male executives has a solid masculine component due to the country's past".

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Women and men in leadership positions are evaluated differently by employers. According to a survey of representatives of 510 companies from different industries (Kontakt InterSearch Russia, 2021b), the skills that women executives and male executives lack are quite noticeably different. Interestingly, respondents evaluated female executives more loyally (a smaller number of respondents noted a lack of any qualities in women than in men). Thus, female executives, according to respondents, lack the following qualities:

- Strategic skills (20%);
- Emotional intelligence (16%);
- Leadership and analytical skills (14% each);
- Teamwork skills (12%);
- Negotiation skills and creative and innovative thinking (10% each);
- Confidence (8%);
- Emotional stability and stress tolerance (6%);
- Ability to make unpopular decisions, toughness (4%).

The respondents assessed male executives a little more strictly. In their opinion, men lack the following qualities: emotional intelligence (53%). As we can see, more than half of the respondents note that such a quality as emotional intelligence is not predominant in male executives (in contrast to female executives, who are denied this quality by 16% of respondents). Nevertheless, soon this quality will become very important. According to Yuliana Gordon, founder of the iWENGO Business School (Kontakt InterSearch Russia, 2021a): "You will need a very high level of emotional intelligence to cope with the digital generation:

- Ability to work in a team (34%);
- Creative and innovative thinking and strategic thinking (10% each);
- Leadership skills (6%);
- Analytical and negotiation skills (4% each).

As we can see, according to respondents, female and male executives have different "points of growth" in career building.

According to research, it is interesting to note that women are more satisfied with their jobs than men (Redmond & McGuinness, 2020), and this gap persists even when a wide range of personal, professional, and family characteristics persists are considered. However, this gap disappears when work preferences are examined, as women place greater importance on work-life balance.

Discussion

Gender differences, as seen above, can have a significant impact on the careers of executives. At the same time, the trends of modern digital society are such that these differences will increasingly level out (Kontakt InterSearch Russia, 2021a): "I would say that the boundaries of "female" and "male" qualities are erasing...The situation encourages men to adopt certain elements of the business approach from women and women from men... What matters now is the person himself, his personality, how he is integrated into society" (Alexandra Ventier, managing partner of Dableby Group). Juliana Gordon, the founder of iWENGO business school (Kontakt InterSearch Russia, 2021a), expresses a similar point of view: "I think that in time the borderline between 'male' and 'female' competencies will be erased. In this case, there may be a demand for a manager who harmoniously combines "female" qualities (such as emotional intelligence and communication skills) and "male" qualities (such as strategic thinking).

Conclusion

Let us summarize the main results of the analysis:

1. Gender discrimination is faced by a significant part of managers, both female and male. The question remains, to what extent this discrimination is subjective or objective in nature? The answer to this question will allow organizing the work to eliminate discriminatory differences more clearly, and, it seems to us, not in the sphere of legislation or other

formal procedures but in the sphere of communication technologies and practices. It is no secret that a message from the communicator's point of view and a message from the recipient's point of view is not always (if not rarely) identical messages. Therefore, what may be perceived as a discriminatory factor in the communication results of representatives of different sexes is not necessarily so. Consequently, one of the activities to reduce gender discrimination should be considered an improvement of communicative literacy of employees.

2. Gender differences in competencies, the choice of "growth points" for building a career, and the evaluation of career "stop-factors" are pretty noticeable. Furthermore, this is good because diversity is better than unification: the world is too complex, multifaceted, and contradictory to consider and evaluate it only from one side, seeking a single approach. Of course, diversity complicates interaction, often leading to conflict, but it also provides more significant development opportunities, discovery, and, ultimately, greater freedom (as Joseph Renan said: "Inequality lies in nature itself; it is the inevitable consequence of freedom"). Therefore, in our view, effective interaction between genders must be built on a complimentary basis, as mentioned above, "so that men adopt some aspects of the approach to business from women and women from men.

The topic covered in this article is extensive and touches upon a very dynamic area of interpersonal relations. We continue the work we started in cooperation with Kontakt InterSearch Russia to study gender stereotypes within the research "Gender Stereotypes: What Do Top Managers Think? This and subsequent studies will help to answer the questions of when gender differences lead to gender inequality and when they lead to the development and sustainable functioning of the system, and, consequently, what technologies of training and development of employees in the context of gender philosophy should be applied by modern business.

Acknowledgements

We express our gratitude to the company Kontakt InterSearch Russia for fruitful cooperation and research materials.

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DOI: 10.24234/wisdom.v2i1.770
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DEVELOPMENT OF THE NATIONAL QUALIFICATIONS SYSTEM: THE IMPACT OF TRANSHUMANISM

Abstract

The article discusses the problems of developing new educational programs for universities and issues that need to be addressed by coordinating with various system institutions under the influence of transhumanism. The methods of analysis, generalization of the regulatory and methodological framework, and external expertise in interaction with employers were used. The scheme of interaction of elements of the national qualifications system in developing an educational program is presented. The hypothesis of the need to include all elements for the development of educational programs has been tested. The correlation dependence and percentage approximation results proved the need to use all components to develop educational programs. Several issues related to universities' development of educational programs and requiring further clarification are highlighted, including issues of harmonization of professional and educational standards under the influence of transhumanism. The work results determine the following directions for the further development of educational programs: 1. normative and methodological development, 2. the use of external expertise and evaluation, and 3. expanding opportunities for further development of unique programs with active cooperation with employers.

Keywords: national qualifications system, educational programs, universities, professional qualifications councils, examination of educational programs, transhumanism.

Introduction

Over the past few years, we have observed the development of particular elements of the National System of Qualifications (NSQ) and the evolvement of their interaction (the period from 2014 up to the present).

"The National Qualifications System (NQS) is a set of legal, organizational and institutional mechanisms, ensuring the coordination of supply and demand for qualifications, the collaboration of vocational education and labour, the creation of conditions for professional growth and the improvement of labour resources quality that comply with national and international requirements" (Strategy for the development of the national qualifications system of the Russian Federation for the period up to 2030, 2021; Decree on the National Development Goals of the Russian Federation for the period up to 2030, 2020).

The development of the elements of the system of qualification and training of specialists aims at the formation of mechanisms for competitive specialists training by educational institutions, which will provide, in its turn, the labour market with the candidates of the required level, taking into consideration the Russian as well as international requirements.

The development of the national qualifications system sets the universities and their education programs the tasks of training specialists for strategically essential tasks for the labour market

and various branches of the economy. As the world practice and the successful experience of the Russian educational programs implementation demonstrates, it is possible due to the mechanisms of active interaction and mutual support of various elements of qualification and education system (Strategy for the development of the national qualifications system of the Russian Federation for the period up to 2030, 2021; Decree on the National Development Goals of the Russian Federation for the period up to 2030, 2020).

The purpose of the article is to compare the elements of the national qualifications system in developing educational programs and the influence of transhumanism. To achieve this goal, the authors propose developing educational programs of higher education in the context of the evolution of NQS. The experience of developing an educational program on the main "Innovations" allowed us to draw some conclusions and offer options for active interaction between elements of the national qualifications system and the educational community.

Literature Review

Many authors support this point of view, including the one that concerns the training of specialists in the transport industry (Degtyareva, Lyapina, & Tarasova, 2021). Many researchers take upon Industry 4.0 impact on the labour market in their works. For example, Grodek-Szostak, Z., Siguencia, L. O., Szelag-Sikora, A., and Marzano, G. (2020) highlight the potential opportunities and problems arising with employees as well as with employers in the context of Industry 4.0. This approach is being developed in work devoted to the training of IT specialists (Szafrański, Gütmen, S., Graczyk-Kucharska, & Weber, 2022). Researchers Chala, N., Poplavska, O., Danylevych, N., and Maksma, M. (2021) analyse the models of the employees' competencies under the condition of Industry 4.0. The process of the labour market transformation and the study of the main trends of intelligent technologies' impact on it is reflected in work by Mizintseva, M. F., Gerbina, T. V., Sardaryan, A. R., and Chugrina, M. A. (2021).

The pandemic produced a particular impact on the labour market that was previously influenced by the factors and products of the technological process due to the manifestation of crisis phenomena. The researchers Smolina, E. S., Greshnova, M. V., and Ryzhova, A. S. (2021) refer to this problem. The pandemic has impacted the geography of the labour market (Herod, Gialis, Psifis, Gourzis, & Mavroudeas, 2022).

An axiological or value-based approach to analysing various aspects due to the global digitalization and identifying the most relevant competencies for existing professions present one more subject for discussion. The paper by Mantulenko, V. V., Zotova, A. S., and Makhovikov, A. E. (2021) analyses the influence of digitalization on the creation of new professions and the destruction or transformation of the old ones, as well as the competencies required in future. There is a need for professional competencies related to the needs of enterprises in the era of the Fourth Industrial Revolution (Szafrański, Gütmen, Graczyk-Kucharska, & Weber, 2022). Higher education institutions also need to change, and there is a need to train people with digital skills (Teixeira, Gonçalves, & Taylor, 2021). Also, changes in higher education institutions have occurred due to the impact of the pandemic (Dereso, Meher, & Shobe, 2022). The challenges of the economy, digital transformation and their influence on the labour market are defined by the actual set of new competencies (Vladimirov, Kamchatova, & Burlakov, 2021) due to the realization of the main provisions of digital changes. This topic is highlighted by Guseva, M. S. (2021) on the example of a particular region.

The analysis of the impact of the digital transformation on the labour market and the justification of the necessity of training and retraining of the employees in the context of digital education are reflected in the research by Gromova, T. V. (2021). The emergence of new competencies

requires the improvement of the education system. Intellectual backlogs allow educational institutions to train updated personnel at the employer's request.

The current state of the human capital and the educational environment as an essential factor of its transformation may have a particular connection with profound social-economic changes which influence the labour market. In his work, Popov D. S. (2020) treats these issues. The change in consumption and the transition to a circular economy of a complete cycle give the prerequisites for the emergence of new competencies in existing professions.

The classification of challenges of digital transformation of global, national and regional economies, the structured causal relationship of the unstable state of the economy with structural shifts and cyclical recession, and the possibility of eliminating the causes of the unstable state of the labour market by using digital technologies are analysed by Golovetsky, N. Y., Grebenik, V. V., and Khamalinskaya, V. V. (2021) on the example of a particular region. It is necessary to consider the peculiarities of the sectoral development of a particular region to train specialists of the required level.

In the work of Degtyareva V. V. (2021), practical skills and tools that specialists who have received education should possess in order to apply them in practice are actively considered. The formation of additional skills among specialists as part of the implementation of Industry 4.0 technologies creates the preconditions for structural changes in the education system.

The following significant problem that influences the choice of the profession and the branch of labour is labour mobility. The primary trend of the labour mobility of the population is treated by Tikhonov, A., Novikov, S., Kalachanov, V., & Solimene, U. (2020). There was no system for distributing specialists, which did not work very well in the USSR. At present, measures have appeared in the Russian Federation to support young specialists, which allow specialists to stay in the regions.

A special place in forming the educational program should be given to transhumanism. Its active influence on transnational and intercultural differences (Gil Martínez & Vorontsova, 2020) should be taken into account when developing educational programs without much influence from political, ethical or religious differences, which is another most challenging challenge (Chetverikova, 2018). The impact of the transhumanistic approach on the educational environment must be considered when developing the required competencies.

Thus, the problem under study is currently relevant. The authors reveal various aspects of this problem. The paper will clarify some aspects stated in the literature review.

Methodological Approach

The study was conducted using analysis methods, generalization and study of the results of activities. The normative and methodological support, the possibilities of external expertise, evaluation and expansion of opportunities for further developing unique educational trajectories in active cooperation with customers are analysed and summarized. The scientific results of the authors are used in the development of their educational program.

Within the framework of regulatory and methodological support, decrees, strategies, federal laws, and labour legislation related to education and obtaining the necessary skills laid down in the primary documents of the country to achieve professional development are analysed.

The roles of the relevant elements (institutions) within the study framework are determined. The NQS concerning the goals of developing education and strengthening interaction with the labour market are as follows:

- National Agency for Qualifications Development (NAQD) – the central role is to form the coordinated position of all the system participants on the formation and development of

NQS.

- Professional qualifications councils in various fields (PQC) – the development of the professional standards (PS), independent assessment of qualifications, professional and public accreditation (PPA) of educational programs in the relevant fields, etc.
- Ministry of Science and Higher Education – the development of the educational standards in training (e.g. Federal State Educational Standard 3++, Federal State Educational Standard 4), etc.
- Enterprises, organizations, industry communities, etc. – the formation of the requirements for the profession, participation in the development and public discussion of the professional standards for the relevant professions and fields of activity, etc.
- Educational organizations – development of educational trajectories for relevant areas of education (e.g. for the universities' Self-imposed Educational Standard (SIES), Model Principal Educational Program (MPEP), Principal Educational Program (PEP), retraining, etc.)
- Expert and consulting organizations - conducting expertise of educational programs (for example, PPA), participating in the development and review of training programs, etc.

The approach mentioned above is entirely consistent with the well-known concept of the "Triple Helix" by Henry Etzkowitz (Etzkowitz & Leydesdorff, 2000; Etzkowitz, 2003), the essence of which is that the most successful and worldly-recognized form of participation of universities in the development of an innovative economy is a model of close interaction between business and universities with an integral role of the state, whose influence is noticeable in any sphere, especially in Russia. This point of view is supported by other foreign authors (Liu, Zhang, Chen, & Zhang, 2021; Ribeiro & Nagano, 2021).

To date, some experience in the interaction of elements of the education system and qualifications has already been accumulated, but developing a specific educational program demands a unique complex of solving interaction problems (Degtyareva et al., 2021; Lyapina, Tarasova, & Fedotova, 2020; Mantulenko et al., 2021; Jüttler, Schumann, Neuenschwander, & Hofmann, 2021).

Their analysis was carried out to test the hypothesis of the need to include all elements in creating modern educational programs. We worked with a sample of 14 training areas and more than 44 educational programs in 3 higher educational institutions. The results obtained using the dependence correlation and the percentage of approximation will help to understand the need to include all components and the degree of their influence on this model. This can affect student satisfaction and the comparable quality of educational service delivery (Abbas, 2020) and the development of professional skills that modern graduates should possess (Yu, 2017).

Further development of the NQS from the perspective of the tasks of developing successful educational programs is possible only if there are clear and understandable rules of interaction with the relevant institutions of the system, methodological tools, as well as the implementation of the conditions for close cooperation between educational organizations and employers and their motivation for partnership. All this determined the essence and results of the study.

Conducting Research and Results

The Main Elements of NQS in the Development of an Educational Program

Let us consider the main processes of developing an educational program on major "Innovations", taking into account the specifics of the transport industry through interaction with various elements of the national qualifications system (Figure).

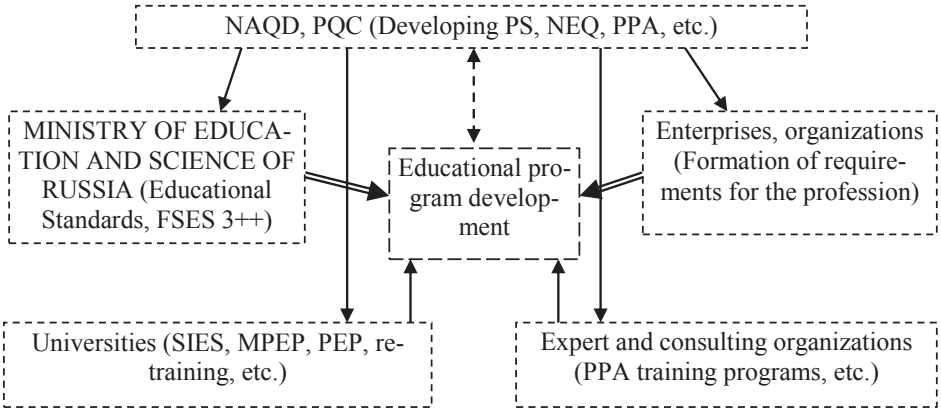

Figure. Interaction of elements of the national qualifications system in developing an educational program (developed by the authors).

1. Ministry of Science and Higher Education of the Russian Federation. When developing an educational program, an educational organization solves the following questions: based on what standard and on what major (for example, the Federal State Educational Standard) the program will be implemented, what level of training is required (for example, bachelor's degree/master's degree/speciality), areas of professional activity, etc. Solution options: based on the Federal State Educational Standard of higher education bachelor's or master's degree on major "Innovations", the field of professional activity-choose one of the proposed in the standard or specify another, provided that the level of education and the acquired competencies meet the requirements for the qualification of an employee (an example of the field of professional activity for the significant "Innovations" (bachelor's degree) - aircraft engineering, "Specialist in aviation program management").

2. Professional qualifications councils in various fields (PQC). Tasks: to determine on the basis of which professional standards the educational program will be developed, to check the compliance of the level of education, to consider the possibilities of coordinating professional competencies and indicators of their achievement with the appropriate working group within the corresponding PQC. Solution options: for programs in the transport industry, the choice of PQC for interaction can be determined by the type of transport and the field of professional activity (for example, PQC in railway transport, PQC in the elevator industry, in the field of lifting structures and vertical transport, PQC in the field of rocket technology and space activities, PQC in marine and inland water transport, etc.). Furtherly, professional competencies are developed based on one or more selected PS. Indicators for them are developed based on labour functions or are justified in another way (for example, the employer's opinion). In addition, it is worth evaluating the possibilities of passing the procedures of professional and public accreditation (it is advisable to do it on the basis of the main PS taken as the basis for the development of the program) and the procedures for independent assessment of students' qualifications (it is so far limited for higher education programs due to the requirements of obtaining education and experience).

3. Enterprises, organizations, industry communities, etc. Tasks: coordination/formation of requirements for the educational program, participation in the development and public discussion of educational programs, reviewing. Possible solutions: developing professional competencies and indicators of achievement with representatives of the leading employers, obtaining reviews of professional competencies for the program and/or the educational program as a whole, coor-

dination of practical training programs and internships for students, etc.

Employers interact with universities based on choice and study program. For example, for the transport industry, these may be the Ministry of Transport of the Russian Federation, JSC "Russian Railways", the Moscow Metro, the State Corporation "Roscosmos", PJSC "United Aircraft Corporation", specialized research institutes and structures of the transport industry (JSC "VNIIZHT", JSC "NIIAS", JSC "IERT", JSC "VNIKTI", JSC "Agat" Organization"), etc.

4. Educational organizations. Tasks: consideration of the feasibility of developing joint educational programs on the major specialisation, work experience analysis, receiving feedback, etc. Possible solutions: deciding on the feasibility of online educational programs; studying curricula, discipline programs and materials on similar programs (presented in open access, for example, on universities' websites); deciding on reviewing programs by representatives of the university community. Extracurricular activities with a partially professional orientation are also possible (conferences, master classes, exhibitions, etc.).

5. Expert and consulting organizations. Tasks: making decisions on attracting organisation representatives to examine and review individual tasks; examining the implemented educational programs as a whole. Possible solutions: obtaining an official examination for an educational program (for example, PPA); consulting and/or partial examination of blocks or modules of the program; finalization of educational programs, etc.

As for the experience of conducting professional and public accreditation of higher education programs, it is worth paying attention to two aspects - the expediency of obtaining a PPA certificate and an organisation's choice for this purpose. The loss of accreditation leads to a decrease in the level of perception of the organization (Castro, Pavez, & Contreras, 2021). In this regard, with the approval in 2020 of the Federal State Educational Standard for Higher Education (for the major "Innovations" as well), which includes direct requirements for taking into account professional standards when developing educational programs, obtaining a PPA certificate is an external confirmation of the program's compliance with the requirements of professional standards and employers (at least in terms of professional competencies). When choosing an organization for conducting a PPA, it is necessary to check the fulfilment of two conditions: the authorization from the relevant PQC to conduct a PPA according to the Council's work direction and representation in the list of the Ministry of Education and Science. In addition, following the PPA procedures can increase the rating of an educational program in competitive bids.

The hypothesis of the need to include all elements in the development of educational programs will be tested when determining the correlation between dependent indicators (Table 1).

Table 1.

Data on the Assessment of Correlation between Dependent Indicators in the Process of Creating an Educational Program (developed by the authors)

	Y - Effectiveness of the educational program	X1 - Ministry of Education and Science, regulatory and legal documentation	X2 - PQC	X3 -Expertise in enterprises, industry communities	X4 - Experience in educational organizations	X5 - Expertise in consulting organizations
Y - Effectiveness of the educational program	1	0,62	0,18	0,53	-0,02	0,31

X1 - Ministry of Education and Science, regulatory and legal documentation	0,62	1	0,14	0,81	-0,06	0,35
X2 - PQC	0,18	0,14	1	0,20	-0,09	0,03
X3 - Expertise of enterprises, industry communities	0,53	0,81	0,20	1	0,02	0,19
X4 - Experience of educational organizations	-0,02	-0,06	-0,09	0,02	1	0,18
X5 - Expertise of consulting organizations	0,31	0,35	0,03	0,19	0,18	1

When calculating, the following indicators showed the most significant dependence on the variable Y – the effectiveness of the educational program from the dependent ones in descending order:

X1 - Ministry of Education and Science, regulatory documentation;

X3 - Expertise in enterprises and industry communities;

X5 - Expertise in consulting organizations;

X2 - Tips on professional qualifications;

X4 - Experience with educational organizations;

The approximation of the model was 6.5%, which proves the need to include all components in the development of modern educational programs.

Examples of solutions for developing educational programs in interaction with various are presented in Table 2.

Table 2.

Examples of Solving the Problems of Developing Educational Programs in the Framework of Interaction with Various Elements of the NQS (developed by the authors)

№	Tasks to be solved when developing an educational program and interacting with various institutions	Educational program "Innovations in transport" (Bachelor's degree level)	Educational program "Research and analytics in the transport industry" (Master's degree level)
1	The task of substantiating the FSES to develop the program	The choice of the FSES for bachelor's degree programs is almost immediately connected with the program's orientation.	Development based on the FSES for Innovations. Master's degree programs with contents in innovation can also be developed based on other FSESs, such as "Economics", which may be associated with developing competencies at the intersection of several areas.
2	Areas and spheres of professional activity	Initially, the choice is based on the FSES specified list, which can then be from other areas. An important issue here is understanding the activity's multi-sectoral (or not).	
3	Selection and justification of the professional standard(s) for professional competence development	At first, the choice is based on the FSES specified list but, as a rule, concerning the field of professional activity.	
4	Choosing the tasks of professional activi-	It can be recommended in consultation with representatives of	

	ty	the leading employers and leading companies in the industry. Focus on the goals of the type of professional activity specified in the professional standard and the group of occupations (All-Russian Classifier of Occupations) and types of economic activity (All-Russian Classifier of Economic Activities) specified in the selected professional standard. Use Russian classifiers in general: All-Russian Classifier of Occupations, All-Russian Classifier of Economic Activities, etc.	
5	Tasks of interaction with employers, industry/professional communities, etc.	Work with representatives of employers during the development and implementation of programs (questioning employers to understand the needs for training specialists, developing programs on request, a practical training base, etc.).	Interaction is complemented by work with research structures, research institutes, etc. For example, analytical associations, the industry analytical centre of the Russian Open Academy of Transport, JSC "Russian Railways" (research and analytical divisions), State Corporation "Roscosmos", Specialized Research Institutes and structures of the transport industry (JSC "VNIIZhT", JSC "NIIAS", JSC "Agat" Organization", etc.).
6	Tasks of interaction with the Professional Qualifications Councils	Coordination of professional competencies and indicators of their achievement with recommendations from the PQC (for the 6th level of qualifications), participation in round tables and public discussions, etc.	Coordination of professional competencies and indicators of their achievement with recommendations from the PQC (for the 7th level qualifications), participation in round tables and public discussions, etc.

In general, in developing the NQF, it is possible to note tendencies toward strengthening the interaction between various system components. At this stage of development, we observe the coordination of the PS and the Federal State Educational Standard requirements, which is directly reflected in the approved Federal State Educational Standard and the primary "Innovations".

Directions for Further Development of Educational Programs

In the course of considering interaction tasks in the development of educational programs with various institutes of the NQS, some directions were identified for further development and clarification of options and forms of work:

1. Taking into account the Federal State Educational Standard requirements and employers' requests in the development of the program. Current situation: higher education programs in the field of "Innovations" are designed following the current Federal State Educational Standard requirements and, as a rule, taking into account the experience of implementing programs. The needs of employers are taken into account in terms of professional programs (the development of professional competencies, indicators, and disciplines). Idea: when interacting with employers, discuss the ratio of professional competencies that are in demand now, and consider the forecast of the profession's development in the future.

2. The base of professional standards used in

the development of educational programs. Current situation: according to higher education programs, universities independently implement a scheme for choosing professional standards and form professional competencies on the basis of them (as a rule, on the basis of those recommended by the Federal State Educational Standard). Idea: at the moment, the mechanism for justifying the choice of PS and the development of professional competencies are given to the university itself, and there appear various program development schemes. One of the solution methods is the development of recommendations for the formation of professional competencies of the corresponding PQC (by levels of education) due to this additional strengthening of the elements of the NQF. When it is necessary to develop an industry-specific program, there should be an additional justification of professional competencies with links to relevant research and peer review of programs by professionals.

3. Development of teaching materials and assessment tools. This task is essential in developing the content of the program (disciplines, teaching materials, assessment tools, etc.). Current situation: universities and developers of programs, as a rule, develop training materials using the capabilities of employers, other educational programs of universities, etc. Idea: to expand the possibilities of assessment tools for independent assessment qualifications developed by the PQC for the current PS. Another debatable issue related to the use of assessment tools developed by the Councils for the relevant PS is the expediency of a joint assessment of qualifications with the final state certification procedure. Such tasks are implemented in the SVE system but not solved in the higher education system. Idea: considering the possibilities of using assessment tools to check the completeness of professional competencies at various stages of forming competencies.

4. Taking into account the development of the industry in the formation of educational programs. Current situation: the designation of the industry's circumstances begins with choosing the field of professional activity in the formation of the program. According to experience, it was confirmed by comments/reviews of the educational program and its components. Idea: taking into account circumstances and requests for the industry assumes building a system of interaction with leading companies and research and analytical organizations in the industry (as noted earlier, for transport, for example, Russian Railways, State Corporation Roscosmos, etc.), which is especially important for the formation of specific master's programs. Such work begins with designing an educational program (including practice) and can also include the organization of laboratories according to the company's tasks.

A significant debatable issue in forming an educational program is accounting for specific objects of the industry, region, etc., in its contents. So, for example, taking into account the internal characteristics and technologies of the industry and how global trends affect its development is relevant, for instance, for educational programs in the field of "innovations in the transport industry". The contents of such programs should reflect the following aspects of training: taking into account global trends that are changing the world economy as a whole, the tasks of digital transformation (associated with management issues and new relationships when working with a client), a new approach to innovation, associated not just with technological innovation, but with the development of the "product and business process" approach, etc. Since modern transport companies understand the importance of forming an integrated view of innovation and changing competition in the market from rivalry to cooperation and partnership of transport companies (technological innovations can be implemented only when building strategic decisions among companies, taking into account external industry factors of activity), such issues can only be resolved in close cooperation and discussion with representatives of several employing companies of future graduates of the

program.

5. Information and communication opportunities used by universities in the learning process. Current situation: universities actively use information resources to post educational materials, conduct online classes, and test the development of educational materials; for this, they actively use various public platforms (for example, Skype, Zoom, etc.). Idea: still debatable are the issues related to the decisions to transfer the central part of the education process to remote formats, how much this affects the quality of the results, what methods of presenting educational material and assessing knowledge to choose from depending on the goals and forms of education, etc.

The described elements show the influence of transhumanism, allowing students to study precisely the subjects they are interested in and will be helpful in their professional activities (Chetverikova, 2018).

Discussion

The authors' scientific novelty consists in offering new approaches to the development of educational programs under the influence of transhumanism. The authors tested and confirmed the hypothesis using correlation dependence and percentage approximation of the need to include the following elements in the development of educational programs:

- Ministry of Education and Science, regulatory documentation;
- Expertise in enterprises, industry communities;
- Expertise in consulting organizations;
- Tips on professional qualifications;
- Experience in educational organizations.

Examples of solving the problems of developing educational programs in the framework of interaction with various elements of the national qualifications system are analysed on the example of specific bachelor's and master's degree programs.

Conclusion

During the considered period of development of the NQS, there is an increase in interaction between the participants in the system's formation. Today, this can be found in the legislative sphere. For example, we see requirements for consistent educational and professional standards in higher education.

Consistency requirements can also be found in the structure of the designed educational programs. For example, if the educational program has a specific specialization profile or industry affiliation, the professional part should be developed considering the industry affiliation of the field of activity and the corresponding professional standards (individual labour functions).

Further development of higher education programs within the framework of the NQS development fields poses questions for universities related to understanding the ratio of the formation of universal and particular/professional competencies, since in a rapidly changing world with modern digitalization opportunities, it is necessary to understand and forecast the need for the formation of "soft" and "infrastructural" management skills related to the restructuring and flexible management of various systems, which is very relevant for the transport industry, considered in the example of the article. Engineering specialities require a particular approach to forming competencies (Chan & Luk, 2022). This will allow universities to choose a learning-oriented approach (Combey & López, 2022).

The importance of interaction between universities and employers continues to grow. The practice of corporate structures shows that the search for "talents" is moving to the beginning of the educational chain (preschool and school education), and it is necessary to build educational programs in universities taking into account such features. Another peculiarity is when universities understand that it is impossible to study individual modules and topics without inviting a practising teacher from a specific company.

Another direction in developing university programs is the formation of unique private programs. Moreover, the uniqueness, on the one hand, manifests itself in the implementation of single educational programs at the request of the employer-customer, the possibility of quickly making changes to the current program, and, on the other hand, in need to take into account the individual characteristics of the audience (personal perception, the need to combine the possibilities of on- and offline learning listeners in one group, etc.). Such issues are still poorly regulated by the current standards.

All of the above allows us to outline further tasks for the development of higher education programs by searching for new options for the interaction of various institutions of the NQS, which make it possible to develop educational programs that meet the needs of the labour market, ensuring the continuity of educational trajectories with the formation of a specialist's qualifications. This approach is entirely appropriate for training specialists in the field of innovation.

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ARTIFICIAL INTELLIGENCE METHODS IN PREDICTING THE PRODUCTIVITY OF PROJECT TEAMS: TRANSHUMANISM AND EXPERIENCE IN PRACTICAL RESEARCH

Abstract

The article considers issues related to the use of artificial intelligence methods in the technoscience concept while moving from personnel management to human resource management using artificial intelligence elements. Authors consider the development of human resources at the expense of cognitive-communicative resources of personnel in specific (transformed) conditions of consciousness when a synergy of neurocognitively enhanced human capabilities and artificial intelligence occurs. Such situations are considered in predicting the productivity of project teamwork, characterized by various aspects: organizational, cognitive-communicative, socio-psychological, etc. It is analyzed a specific example of predictive analytics related to the assessment of future results of newly created teams (shift teams) and results that are corrected based on already existing teams (V. K. Finn's DSM-method of automatic hypotheses generation, as a way to organize knowledge using the non-Aristotelian structure of concepts, 2009). Some difficulties of using the shift form of labour organization are considered. The methodology for predicting the teams' assessment is based on the results of express diagnostics of their work on specific test cases and the general database of characteristics and results already existing successful and unsuccessful teams.

Keywords: human resource management, teams, shift teams, team characteristics, predictive analytics, artificial intelligence technologies, DSM-method of plausible reasoning, operationalization and quantification of parameters.

Introduction

Management and improvement of the use of human capabilities, based on the methodology of self-development and complexity, becomes a pivotal incentive to activate the transhumanism concept (N. Bostrom, R. Kurzweil, V. Winge, H. Arend, etc.), where the transformation of science is determined by re-direction from cognitive activity to the projective-constructive activity of technoscience. In technoscience, the truth is replaced by the 'technological efficiency' concept, and knowledge can be considered a project activity. Designing becomes a model of cognition. However, the goal remains the same - cognition of reality by thinking.

Currently, two sciences are most actively engaged in improving the thinking efficiency as a cognitive practice: cognitive science and neuroscience, divided into two components: neuroscience and neurotechnology. Neuroscience studies the brain and nervous system. Neurotechnology solves practical things. Such technologies are focused on understanding the human brain's neural structure and activity that read and control neurons.

In turn, the study of cognitive technologies (artificial intelligence, machine learning, Big Data and Big Live Data, etc.), as technologies focused on managing the cognition processes, lear-

ning and communication, makes it possible to optimize meanings formation using various phenomena of perception (peculiarities of feelings, configurations, constancy, reference systems/ subjective scales, objectivity and attitude) and logical-heuristic methods (brainstorming, synectics, lateral thinking, TRIZ, etc.) (Kholodnaya, 2004). The synthesis of cognitive and neurotechnologies will allow (creates conditions) to increase the efficiency of thinking and, therefore, the efficiency of the modern economy that entered the era of new forms of human resource management. The simplest way to reach this goal will be using parameters in cognitive technologies based on the results of applying neurotechnologies, for example, medical research, electroencephalograms, cardiograms, tomography, etc. Based on this, it is necessary to rethink the theory and practice of work with personnel, including the organization of project teamwork. Besides that, these goals should be solved in conditions of modern reality. Western and Russian studies say about the final transition to the VUCA world, conditions of which were considered by the authors as a characteristic of the environment (Kraev & Tikhonov, 2019; Runsten & Werr, 2020; Fedotova, 2018; International trends in personnel management, 2020).

The Issues of Teams' Formation

A number of HR specialists believe that one of the most priority areas will be the management of changes in teamwork (International trends in personnel management, 2020; Runsten, 2017) and, first, the change of human resources itself, both external (the use of exocortex, neural network HTTP 2.0 protocols and biological feedback, active cooperation/symbiosis with artificial intelligence, etc.) and internal (development of engagement and meta-competencies, first of all cognitive-communicative, the use of more complex multi-focus logical models of the reality description, visual thinking technologies and system analytics, that take into account dynamic complexity and network hierarchy of problem situations in the mode of initiality and self-building) (Belbin, 2003). Among the most actual goals of personnel management with the use of artificial intelligence for the issues of team management, these should be highlighted: considering new requirements related to dynamics of career and educational trajectories of teams; the need for mobile cognitive selection that considers psych emotional contacts and neurophysiological features; active learning, first of all, meta-competencies in real time and on a regular basis; creating a systematic "positive" employee experience for an employer brand; developing HR platforms that have analytics functions, including predictive one; new leadership – 'digital leader' and transform-teams in symbiosis with artificial intelligence resources (Fedotova, 2019); the development of cultural diversity and equal opportunities; open talent economy; robots, cognitive computing and artificial intelligence (International trends in personnel management, 2020).

Such work with personnel is considered in the conditions of transition from target management to attributive design, and cognitive-neuro-communicative resources of a team in specific (transformed) conditions of consciousness are considered a specific resource condition. There is a simultaneous parallel equivalent development of both the person itself, the person's capabilities (first, cognitive and communicative), and the development of the artificial intelligence use, including in collective teamwork, as an additional cognitive element. The critical element of this transition is the generation of the team's unified creative field and the management of parameters that characterize the deep models of team behaviour.

Considering the issues of transhumanism in the context of team formation, it is necessary to pay attention to some aspects. The authors are adherent to the moderate transhumanism, believing that a person has a desire to improve and develop his abilities and capabilities, but boundaries and goals of development should correspond to ethical principles (Sandberg, 2014; Diéguez, 2020; Hofkirchner & Kreowski, 2021; Tikhonov

& Novikov, 2020; Vorontsova, Arakelyan, & Baranov, 2020).

The development and improvement of human abilities in the formation of teams occur due to various factors: selecting employees according to professional competence and psychocompatibility, evaluating medical indicators, considering mode peculiarities of working a team and individuals, training, forming culture and values, the use of psychotechnics, etc.

In fact, in forming a team, network structures are created. They use each participant's strengths and neutralize weaknesses by training for the goals of a project and an organization; interchangeability and complementarity in professional goals and others are formed. It makes the team a more stable structure than an individual and increases reliability in working with people. However, on the other hand, there is a serious impact on a person. Group effects should be remembered, which have both positive and negative consequences. Among others, conformism (from necessary acceptance of group rules to extreme forms of personal viewpoint loss and following to the group opinion), social laziness (from saving energy to shifting their tasks to other team members), and others may occur. Some issues should be considered as well. Is it ethically to work with medical research of employees (encephalograms, tomography, etc.) and to use particular medicine and simulators, for example, to increase productivity (from VR simulators to the use of psychotechnics and medications)?

This article is based on research conducted in 2020 at one of the largest non-metallic mining companies in the Moscow region with more than 500 employees. This research aimed to develop and verify a methodology for predicting the productivity of newly created or modifying shift teams based on an existing database of facts, including assessing efficiency and socio-psychological, organizational, neurophysiological, technical and technological parameters that characterize the work of shift teams. Some problems of organizing shift teams are well known. These are: long isolation from home and family, not well-organized delivery to the workplace, overcoming long distances, changing time zones and climatic zones, etc. (Davydova, 2008). Besides that, studies show additional requirements for forming shift teams: psychological compatibility of workers, stress resistance, coherence and stability of relationships, etc. (Lobova, Loginov, & Koveshnikov, 2014).

As a rule, various mathematical methods are used to model teams' management processes, first, regression and cognitive modelling methods [website: IPU RAS - Sector 51 'Cognitive analysis and situations modelling']. Methods of mathematical statistics are not well suited for such tasks (Finn, 2015). To overcome these limitations, it is proposed to use artificial intelligence methods because these methods allow extracting knowledge from disordered and unformalized data in explicit form, using various formal procedures. However, before applying the methods, the mentioned knowledge was hidden among massive facts in the database.

For practical use in tasks of forecasting the efficiency of shift teams, it is proposed to use DSM-method of automatic hypotheses generation - a logical-combinatorial (non-statistical) method based on the use of mathematical logic and intended to analyze dependencies between the combination of features and desired effect, which is the productivity of shift teams in our case (Anshakov & Fabrikantova, 2009). Shift teams are presented as a structured set of organizational, socio-psychological, and other characteristics. At the same time, characteristics can be represented by both nominal and interval scales. This only requires adequately representing such data and determining the similarity operation for decisive predicates of the DSM method.

Predictive analytics is the most actual goal. It is the assessment of future efficiency of the newly created team based on express diagnostics of work with micro-projects (from 2 to 5 days) in the format of an organizational and activity game, in which successful and unsuccessful team's results are compared to the previously created database of factors. The result of such a

task is probable since the newly created team (collected shift team) is evaluated. The task is solved by the DSM method of automatic hypotheses generation of V. K. Finn, using induction, analogy and abduction. DSM-method is a means to organize knowledge based on the non-Aristotelian structure of concepts (extensions of G. Frege's triangle to the corresponding quadrangle that implements procedures for generating a specific extensional employing an intentional) (Finn, 2015). The mathematical formulation of the DSM method is given in (Anshakov & Fabrikantova, 2009).

A similar method was already used in practical studies of teamwork management conducted by authors (Prus, Fedotova, & Bin, 2018; Fedotova, 2019). Using the formulation of hypotheses, the task was to determine the initial matrix of objects (teams representing structural divisions of a regional administration and university students in 2011, etc.) and their characteristics. The presence of property-characteristic was evaluated by experts on a five-point scale (various types of scales are possible). Experts accepted the following conditions: 1. from 0 to 2, and the team does not have the property, 2. more than 3 - it has, 3. from 2 to 3 - the evaluation of the property is ambivalent. Various technologies were used: from exact scalar estimates, for instance, statistical concordance coefficient, to complex vector estimates (probability density, using, for example, "soft" calculations) (Saati, 2008).

Possible reasons for the presence/absence of a productive feature (for example, a team's success) may be various combinatorial subsets of properties. Subsets of properties are all possible permutations of properties of successfully working objects/teams. At the same time, two points are fundamental:

1. Accurate socio-psychological operationalization of used teamwork parameters (operands formation) based on the chosen language for describing the problem situation and the theoretical concept that links operands with the goals of research (in our case, it was the concept of socionavigation) (Fedotova, 2018).
2. The correct presentation of qualitative estimates in the form of quantitative values (quantification process) is necessary. In this case, the quantitative estimates/interval of estimate correspond to the presence, absence or inconsistency of properties of objects matrix and their characteristics.

The Experience of Practical Research in the Formation of Teams

In the research conducted by the authors, the methodology of rapid assessment of newly created teams (shift teams) was developed and tested based on their comparison with the fact base, which includes the results of actual successful and unsuccessful shift teams. In our case, the fact base included 18 object-shift teams. The list of the teams' properties included 12 parameters/ characteristics (X) reflecting various aspects of shift work.

The initial values of expert evaluations of teams' parameters are shown in Table 1. Teams No. 19, 20 and 21 were considered additionally (the calculation of their efficiency was skipped). It was necessary to make decisions on their correction and predict their future efficiency.

Table 1.

The Initial Values of Expert Evaluations of Teams' Parameters

Team number	Team efficiency	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
1	1	4	4	4	4	4	4	4	4	3	4	4	4
2	-1	4	2	2	2	2	2	2	2	3	2	2	2
3	1	4	4	4	4	4	4	4	4	3	4	4	4
4	1	4	4	4	4	4	4	4	4	3	3	4	4

Team number	Team efficiency	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
5	-1	4	3	4	4	4	2	2	3	3	4	4	2
6	1	4	4	4	4	4	4	4	4	3	4	4	4
7	1	4	3	4	3	4	3	3	3	3	4	4	3
8	-1	4	4	4	4	4	3	4	4	3	3	4	3
9	1	4	4	4	4	4	4	4	3	3	4	4	3
10	-1	4	4	4	3	4	3	4	4	3	3	4	4
11	1	4	3	4	4	4	4	3	3	3	4	4	3
12	-1	4	3	4	3	4	3	4	4	3	3	4	4
13	1	4	4	4	4	4	4	4	4	3	4	4	4
14	-1	4	3	4	3	4	3	4	4	3	3	4	4
15	-1	4	4	4	4	4	4	3	3	3	3	4	4
16	1	4	3	4	4	4	4	3	3	3	4	4	3
17	1	4	4	4	4	4	4	4	4	3	4	4	4
18	-1	4	4	4	4	4	4	2	2	3	3	4	2
19	?	4	4	4	4	4	4	4	4	3	4	4	4
20	?	2	2	2	2	2	2	2	2	3	2	2	2
21	?	4	4	4	3	4	3	3	3	3	4	4	2

The assessment of the shift team's work included test results: mandatory tests, such as MBTI, MSI (I. Adizes), temperament type, 'Self-perception' - a test to evaluate the variance of the initial intra-team vision of roles (Belbin, 2003). The following was used to evaluate the psycho-functional condition and efficiency of shift workers: to study depressive conditions – 'Zung Self-Ranking Depression Scale'; to identify the level of anxiety – personal and situational anxiety scale, also 'Reader Stress Scale' and medical parameters; to study well-being, activity, mood - the 'Test of differentiated self-assessment of functional condition', etc. (Lobova et al., 2014; Inyushkin, Filatov, Grigorieva, & Bulatov, 2018).

The assessment was done according to twelve parameters characterizing the shift team:

1. The team motivation (X1).
2. The team competence level (X2).
3. The technical equipment level (X3).
4. Staff turnover (X4).
5. The conditions of physical working in the team (X5).
6. Socio-psychological climate in the team (X6).
7. Psychocompatibility (X7) - the result of MBTI testing was compared with parameters that show the presence of conflicts in the team, compliance with the rules of teamwork, communication barriers, etc. Compatibility is a socio-psychological characteristic of a group, expressed in the ability of its members to coordinate their actions and optimize relationships in joint work conditions.
8. The level of team self-organization/self-management (X8).
9. Emotionality/affectivity in the discussion of emerging problems: included the following indicators - simple/complex emotions, positive/negative, inward/outward, and the structure of emotion types (X9).
10. Initiative (X10) - the number of new proposals from team members in the design process.
11. The functional condition of the team (X11) was evaluated as the sum of indicators: well-being, activity, mood, sleep.
12. Psychoemotional condition (X12) - was evaluated as the sum of indicators: depression, situational anxiety, personal anxiety, and psycho-emotional tension (including based

on the results of a medical report).

The parameters X8, X9 and X10 were determined considering the methodology for evaluating the team's organization of thinking and behaviour (Zaretsky, 2011). Calculations were done using the 'DSM method' module of the "TTRP-EUREKA" software complex (Certificate of Official Registration of the Federal Service of the Russian Federation for Intellectual Property, Patents and Trademarks No. 20066-10693).

Based on the assessment results, efficiency was predicted for three teams (the calculation of efficiency was skipped earlier), and recommendations for its correction were given. Recommendations for the development of employees in teams and the replacement of participants should be developed by specialists that, as an option, can include personnel management specialists, psychologists, medical specialists and direct managers of employees (foremen, project managers, etc.).

Discussion

The study contains attempts to combine cognitive science and neuroscience elements, using a set of various parameters-characteristics of teams' assessment. On the other hand, this study is the experience of artificial intelligence using in personnel management. In turn, it can be considered a practical opportunity to compare and evaluate the work success of teams with a certain set of parameters on a stage of these teams' formation with the efficiency of teams that have similar parameters and somewhat experience.

As a result of the work, some questions require further discussion and search for solutions:

1. The complexity of operationalization of proposed initial parameters, first of all, functional (X11) and psycho-emotional (X12) condition of shift teams.
2. The complexity of processing the results of DSM-method of automatic hypotheses generation:
   2.1. a large amount of information (it was proposed to use and analyze video of the teams' work);
   2.2. the complexity of representation and quantification of expert assessments.
3. The complexity of socio-psychological interpretation and secondary operationalization of possible 'causes' for obtained results.

Conclusion

Summarizing the work results, we can draw several conclusions concerning both philosophical and technological components of the formation and the evaluation of team productivity using artificial intelligence elements. Of course, analytical tools, including Big Data and Big Live Data, provide new opportunities for assessing future productivity. Identifying the reasoning for the use and method of calculating the characteristics of teamwork is an important base for using these tools. In fact, we can talk about the need for operationalization and quantification of the new characteristics of teamwork.

Among actual goals of system management of teamwork, it is necessary to specify the following: development of a team management strategy; development of training programs, considering teams characteristics; project work management; team creativity and communication management in the project; competitive certification work for the whole team and building career-educational trajectories of whole teams, teams outsourcing, 'teams exchange'.

The indicators used to characterize teamwork should reflect the most important in the studied processes and, among other things, consider, for example, the reaction to the autokinetic effect, field dependence/field independence, the type of cognitive control, tolerance to unrealistic experience, etc. (Kholodnaya, 2004) and other processes related to the cognitive and communicative activity.

The authors are adherent to moderate transhumanism and propose combining various employee evaluation parameters (combining cognitive and neuro practices) to increase teams'

productivity at the stage of their formation. In this case, it is necessary to consider issues of transhumanism in the network structure of the relationship of people in a group/team and risks and effects that emerged in group forms of work. When making decisions on human resource management and transforming teams, decision-makers in the organization are responsible for human development and ethical issues. All this should be considered in the development of group forms of labour organization since artificial intelligence often offers solutions that finally are taken by people.

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STUDIES IN THE EXPERIENCE OF PHILOSOPHICAL AND ANTHROPOLOGICAL ANALYSIS OF DIGITAL EDUCATION IN THE REALM OF DIGITAL TECHNOLOGIES

Abstract

The article deals with the problem of the influence of the digitalization of education on human consciousness and the development trends of modern society. The main approaches of modern philosophy to the formation processes of the world educational space are under research. The authors set themselves the goal of identifying the most important consequences of these processes for human consciousness and the evolution of society. The article discusses the impact of digital education on the structure and functions of traditional educational institutions and the modern human consciousness; attention is paid to the consequences of the digitalization of education for such a historically established social group as the professional intelligentsia (clerisy). The analysis of the problem concludes that a fundamentally new model of the transmission of social experience and scientific knowledge is emerging in the modern world educational space. Traditional educational institutions like schools and universities are giving way to a whole system of network structures. This process is accompanied by the deinstitutionalization of education, the departure of education from some of its historical functions, such as the reproduction of the traditional worldview, the decline in the social status of a university diploma, and the transformation of the clerisy.

Keywords: philosophical anthropology, digital education, digitalization, post-industrial society.

Introduction

Over the past four decades, due to the ubiquity of computer networks and the formation of a shared global information space, there has emerged a phenomenon of digital education - a qualitatively new form of the educational process in which the lecture hall and laboratory of a classical university are first supplemented, and then gradually replaced by network educational resources. Having begun within the framework of traditional educational institutions, education digitalization has gone far beyond it, becoming an integral part of the life of modern society. The rapid development of digital education, the formation of a global education space and the inclusion of historically established educational institutions in the process have generated several new phenomena and created new risks that have become a severe challenge to both the philosophy of education and philosophical anthropology.

All this has led to the need for a large-scale philosophical understanding of digitalization processes, including their anthropological aspects. Unfortunately, most of the research in this area does not concern these latter or is inadequate. So, there are still questions unanswered: how does digital education change the historically established models of the educational process? How does the concept of personality formation in the course of education change given it? What are the consequences of the education digitalization in the worldview of a modern individual? What are the possible consequences of this process for

the individual? Furthermore, finally, what are the anthropological prospects for the education digitalization process?

This article displays the results of studying fundamental approaches of modern philosophy to find answers to these questions and identify the most important consequences of these processes for human consciousness and the evolution of society. In the course of the study, the trends in the development of digital education in the context of the activities of traditional educational institutions were analyzed, and significant features of the evolution of modern education were identified, like its deinstitutionalization and changes in the functions of the educational process, some conclusions were drawn about the prospects for the university and professional clerisy in the digitalizing world. From the results of the analysis, it follows that in the process of education digitalization, the world educational space has already been formed, which even now has a significant impact on the functioning of traditional educational institutions, and through them - on public consciousness and the structure of society as a whole:

- The institutional basis of education is changing: the global education space makes it possible to acquire the competencies associated with a university diploma outside the framework of traditional educational institutions;
- Unlike school and university education of previous eras, digital education is not focused on reproducing the traditional worldview or its translation into the minds of new generations. Thus, the growing influence of the global education space leads to a weakening of the positions of traditional cultural discourses;
- The expansion of opportunities for non-institutional education leads to the loss of the university's traditional monopoly on the provision of high-quality educational services and an inevitable depreciation of the university diploma. In the future, this may lead to the transformation of the university from a universal educational centre into a content provider for the educational space and certification and licensing services for experts;
- The spread of digital education leads to the blurring of the boundaries of the clerisy as a group of people whose professional activities used to be primarily associated with the application of their intellectual abilities. As a result, a new type of clerisy is being formed, their essential characteristic being an active role in shaping the information space.

Thus, the significance of digital education for the modern world is not limited to the narrow confines of educational institutions proper. The development of the global education space with a number of university functions transferred to it results in significant changes in society's structure and modern man's worldview.

Methodology

The article uses a set of philosophical methods to identify the main approaches of modern philosophy to the problem of the digitalization of education. In the research process, both general scientific (analysis, synthesis, induction, deduction) and specific philosophical methods (the unity of the historical and the logical) were applied. While analyzing modern philosophical literature because of the research problem, the abstract analysis method was used, concluding that there is currently a global education space gradually taking over the functions of traditional educational institutions. The method of unity of the historical and the logical allowed us to come to conclusions about the prospects for the impact of education digitalization on the worldview of a human being and trends in the development of society.

Research Results

The formation and development of the digital society are accompanied by radical changes in all spheres of human life. Since the eighties of the last century, information networks have entan-

gled an increasing number of different social institutions penetrating into such areas of professional activity and everyday life previously considered not covered by the world of technology, such as interpersonal communication. The global digital revolution has transformed the world throughout one generation and determined the development trends of humankind for many decades to come. Education has become one of the most striking examples of these transformations. Over the past decades, in economically developed countries, digital technologies have become an integral part of the educational process. Thus, Melissa Bond notes that in the second half of the 2010s in Germany, 99% of students had constant access to the Internet, 99.4% of schoolchildren used digital learning technologies on average 114 minutes a week when working from home, and 14 minutes a day at school (Bond, Marín, Dolch, Bedenlier, & Zawacki-Richter, 2018). According to Paola Ascencio Ojeda, the digital literacy of first-year students is becoming a necessary factor for entering university life. Accordingly, the digitalization of education is becoming one of the most important subjects of modern social and humanitarian research (Ojeda, Morales, & Albalat, 2019).

Here and below, by digital education, we mean a new form of the educational process, with a characteristic feature being the formation of the student's competencies mainly through interaction with network educational resources, including open online courses posted on international Internet sites. Accordingly, the digitalization of education includes the spread of digital education and its penetration into traditional educational structures and is manifested in the expansion of the audience of online courses. However, it should be noted that modern philosophy has not yet developed a generally accepted terminology in this area and therefore uses in close meanings such concepts as artificial intelligence in education, e-learning, educational technologies and several others.

By the end of the twentieth century, educational institutions were one of the most stable structures, ensuring the stability of society and continuity between the various stages of its development. In their historical form, they assumed the transfer of moral values, social experience and a comprehensive set of knowledge, scientific knowledge occupying the central place within the framework of direct interpersonal interaction between the two traditional sides of the educational process - those who teach and those who are taught. Such an educational model is rooted in the mists of time, implementing in its entirety the most ancient mechanism for transferring knowledge - the teacher-student mechanism. Educational institutions cover a large part of human life, from preschool institutions to numerous structured systems of additional professional education, retraining and advanced training (Moiseev, Pastukh, Nitsevich, & Stroev, 2021). In almost all countries of the world, the activities of these institutions were strictly regulated, including the transmission of the principal social values forming the basis of an individual's worldview. Due to this, the education system guaranteed the preservation of historically established forms of social consciousness, mutual understanding (at least relative) between generations, the stability of scientific and philosophical schools and continuity in the activities of political and economic institutions (Sharafutdinov, Gerasimov, Akhmetshin, Okagbue, & Tagibova, 2020).

The digital revolution in education was born within the framework of this system, and so far, a large part of the multimedia educational space is being formed and operated by its structures. However, it quickly went beyond the initial institutional framework, which, in turn, led to qualitative changes not only in the concepts of education but also in the consciousness and worldview of the modern man involved in this process.

Paradoxically enough, this aspect of education digitalization is still relatively poorly covered in philosophical studies. The digitalisation processes of education are studied mainly in terms of their value in achieving educational goals (Alekseev, Katasev, Khassianov, Tutubalina, & Zuev, 2018) and their role in the educa-

tional process management. Thus, in particular, the results of a review of more than two thousand publications on the use of artificial intelligence in higher education by Olaf Zawacki-Richter, Victoria I. Marín, Melissa Bond and Franziska Gouverneur (2019) show that these studies are concentrated in four broad areas: "profiling and prediction, intelligent tutoring systems, assessment and evaluation, and adaptive systems and personalization" (p. 1), that is, in areas related to the creation, use and efficiency of these technologies. According to Melissa Bond, research in digital education is mainly aimed at evaluating its effectiveness and identifying its advantages over traditional forms of educational activity. Melissa Bond does not come to a definite conclusion about the effectiveness of digital technologies in higher education but, at the same time, notes the presence of institutional transformations in German higher education – not yet fully covered by the research – as a part of a similar global process (Bond et al., 2018). At the same time, researchers note the presence of individual voices in the scientific and pedagogical community, calling for the preservation of the human dimension in education in the era of digitalization. Thus, Linda Castañeda and Neil Selwyn (2018) point out that digital education's cultural, emotional, spiritual and environmental aspects are suppressed in the scientific discussion around educational technologies. The authors of the 2019 UNESCO report pay attention to the human dimension of digital education (Pedró, Subosa, Rivas, & Valverde, 2019). Cagatay Catal and Bedir Tekinerdogan (2019) pay attention to the issue of the role of digital education in the modernization of educational institutions, noting, in particular, the inclusion of universities in global scientific and educational communities. Some authors pay attention to some socio-anthropological aspects of digital education in connection with its risks. Thus, Luci Pangrazio, based on the material of the network activity of 276 adolescents in Australia and Uruguay, concludes that the development of digital literacy at the age of 7 to12 years is a necessary condition for the formation of cybersecurity (Pangrazio & Gaibisso, 2020).

However, in such publications, as a rule, priority attention is paid to such subjects as, for example, the elimination of direct interpersonal communication due to the spread of digital educational technologies and their consequences. So, Shane J. Ralston (2020) notes that the possibilities of digital education, particularly educational blockchain technologies, are limited since they cannot provide such depth of comprehension as implied when working with a teacher. Ling Li notes the relationship between smartphone addiction and student learning efficiency (Li, Gao, & Xu, 2020). The issues of changes in the worldview of a modern man, the mechanisms of its translation and reproduction, and new trends in the public consciousness due to the digital revolution in education remain primarily out of the field of view of researchers. As shown in the review of publications on the role of transmedia in education carried out by Juan González-Martínez, the vast majority of authors working in this direction either focus on the educational capabilities of the subject of digital education or on the essence of transmedia resources used in education, or on the process of using transmedia in education, while leaving practically out the impact of digital education on the essential characteristics of a person and society (González-Martínez, Esteban-Guitart, Rostan-Sanchez, Serrat-Sellabona, & Estebanell-Minguell, 2019).

Terry Anderson and Pablo Rivera-Vargas (2019) note that there are currently four distance education contexts: distance education without virtual environments; distance education with complimentary virtual environments; teaching in dual or bimodal environments; teaching in virtual environments (e-Learning). The authors see the main difference between them in the degree of personal (not mediated by computer networks) interaction between the teacher and the student. The roles of these traditionally distinguished sides of the educational process in the existing literature are interpreted in the traditional sense. The teacher acts as the initiator of the learning

process and its leader, and he conveys to the learner the content of the learning process, which he more or less actively perceives and assimilates (Kamaeva, Zemsh, Gilmanshina, & Galich, 2021). Little attention is paid to the change in the content of these roles under the influence of digital technologies in the literature studied by the authors. Terry Anderson and Pablo Rivera-Vargas themselves identify five main elements of the transition to a modern model of digital education, motivating a critical perception of this process: "…higher attrition rates and especially in those distance education systems that provide low levels of student support"; difficulties in the field of student interaction with educational content; unfulfilled promises in the field of reducing the social pressure of the classroom due to the comprehensive introduction of interactivity in education; "Copyright confusion"; and finally, overly optimistic and even, according to the authors, utopian views of the educational community on the possibilities of digital education (Anderson & Rivera-Vargas, 2019). The spread of digital education leads to several risks associated with the unauthorized use of students' data, threats to their health, etc. Actually, anthropological aspects of digital education remain out of consideration. Florence Martin notes that from 2009 to 2018, the most significant number of studies in the field of digital education was devoted to particular pedagogical problems, such as the characteristics of a teacher or interaction in education, while socio-anthropological issues, in particular the issue of the impact of digital education on culture, occupied one of the last places in terms of the number of publications.

With this approach, the main object of research is educational resources that owe their existence to the digitalization of education. The audience of these resources is studied mainly from the efficiency or inefficiency of solving the problems for which these resources were created (Tikhonov & Novikov, 2020; Mikhailov, Tikhonov, & Margarov, 2022). Thus, in characterising educational technologies, Amy T. Nusbaum and co-authors focuse on their role in reducing the cost of education and managing student learning activities: "A college education is becoming increasingly expensive, and the burden of this cost is often felt disproportionately by marginalized students. …Open educational resources (OER; free, openly-licensed course materials) are often proposed as a solution to this problem" (Nusbaum, Cuttler, & Swindell, 2020, p. 1). The authors emphasize the increase in the availability of education for representatives of low-income segments of the population as a result of the use of open educational resources: "We found no significant differences between textbook groups on course performance or perceptions of the book, but marginalized students (first-generation students and/or ethnic minority students) reported engaging in negative behaviours (i.e., dropping a class) more often than their peers as a result of textbook costs. These findings suggest that textbook costs disproportionately affect our most vulnerable students, and the use of OER may be one solution to this problem, particularly given the equivalent performance across textbook groups" (Nusbaum et al., 2020, p. 1). Similar approaches to the problems of e-education are presented in other recent publications devoted to this problem. For example, Yao-Ting Sung focuses on the use of mobile devices in education and their impact on their effectiveness. He notes the need to develop pedagogically oriented software to successfully solve educational problems at all stages of the educational process. However, at the same time, mobile education itself (as one of the aspects of digital education) is being explored to solve educational problems (Sung, Chang, & Liu, 2016). The researchers' attention is drawn to the use of massive open online courses (Wang & Zhu, 2019). Many authors consider in their publications the effectiveness of digital educational technologies concerning specific areas of training (Atamanova, Bogomaz, Kozlova, & Kashirin, 2015) and the impact on student achievement (Reinhold, Hoch, Werner, Richter-Gebert, & Reiss, 2020), etc.

David Buckingham (2020) considers a number of socio-anthropological aspects of digital

education. Like Terry Anderson, he points to the fantastical nature of many visions of the future of digital education, with particular emphasis on using these visions for political purposes. On the one hand, he notes that digital education serves more for testing than for learning in most cases. Often its use is formal; in other words, the possibilities and promises of digital technologies are not fully realized; on the other hand, the use of digital technologies leads to a decline in the interaction between the teacher and the student, which gives the author a reason to talk about the end of education. In his opinion, the dreams associated with digital education are turning into a nightmare. Pointing to the dominance of a small number of large companies in the media market, David Buckingham expresses concern that education may eventually become a conduit for their influence on all aspects of public life. He points to the high risks associated with the spread of media literacy among children and the inability of the educational system to counter them. In his opinion, the wide use of digital education leads to a decline in critical thinking among students to a high degree of influence of "fake news", which, in turn, is a symptom of large-scale political, social and economic changes in the modern world. For education, this means reframing the question of choosing between truth and untruth in forming educational content (Buckingham, 2020). The author concludes that there is a need for new forms and mechanisms of regulation in education, which would make it possible to respond more effectively to the challenges of educational tasks (Sung et al., 2016). The researchers' attention is drawn to the use of massive open online courses (Wang & Zhu, 2019). Many authors consider in their publications the effectiveness of digital educational technologies concerning specific areas of training (Atamanova et al., 2015) and the impact on student achievement.

This state of the problem of philosophical and anthropological aspects of digital education is primarily due to objective factors and the comparative novelty of the problem. Digital education has only entered the life of humankind in the latest twenty years, and the first generations with worldview formed under its influence are only now declaring themselves as an active part of the global society. As Olaf Zawacki-Richter notes in his review, "…The full consequences of AI development cannot yet be foreseen today, but it seems likely that AI applications will be a top educational technology issue for the next 20 years" (Zawacki-Richter et al., 2019, p. 20). Many other leading experts share this view in various fields of education. Nevertheless, even today, we can mention many facts characterizing not only new trends in the development of the modern worldview but also the massive impact of digital educational technologies on the minds of people and significant changes that are already outlined in connection with this in the structure and functioning of education as a social institution. We will take a look at some of these trends below.

Deinstitutionalization of Education and Digital Educational Technologies

First of all, it should be noted that the institutional basis of digital education has changed qualitatively over the past decades. Now it is already possible to speak with confidence about the leading role in developing open educational communities, not limited by the traditional school or university. In particular, one of the largest such communities, "The Open Education Consortium", positions itself as "... a non-profit, global, members-based network of open education institutions and organizations" (About the Open Education Consortium, n.d.). According to The Open Education Consortium, the purpose of this community and its ideal is a world in which everyone, anywhere, has access to high-quality education and training, where education is seen as a necessary and universal social good, while noting that "… educational institutions' capacity limits the current provision of education, consequently, this resource is available to the few, not the many. The digital revolution offers a potential solution to these limitations, giving a global

audience unprecedented access to free, open and high-quality educational resources" (About the Open Education Consortium, n.d.). The annotation of another educational community also notes several advantages of digital education over traditional: "The student-centred nature of asynchronous online learning requires students to be actively involved with and take more responsibility for their own learning" (OER Commons & Open Education, n.d.). The moderators of the educational platform indicate that "…In addition to their regular duties as learners, students are required to:

- Become proficient with the technology required for the course;
- Use new methods of communication with both peers and instructors;
- Strengthen their interdependency through collaboration with their peers;
- Students use background knowledge and then interpret, implement, analyze, and evaluate it to create a new product" (OER Commons & Open Education, n.d.).

Thus, despite the stated desire to synthesize the heritage of traditional educational institutions and the latest technologies of the twenty-first century, the non-institutional nature of digital education is seen as an advantage. Of course, as noted by many researchers (Mercer, Hennessy, & Warwick, 2019), new technologies in education actively penetrate traditional educational institutions' activities. However, in fact, this leads to the transformation of these latter, to the erosion of their historically established model. According to the authors directly involved in promoting digital educational resources, "Digital classrooms are considered the vital element in promoting and improving traditional teaching and learning methods. …digital class transforms the education process, and cause universal interactivity between teacher and learners and among learners themselves, all around the world" (Mashhadi & Kargozari, 2011, p. 1178). The practice of more and more comprehensive spread introduction of digital education in the university results in a much larger number of various courses becoming available to the student than even the largest and most prestigious educational institution can offer. Indicative in this regard is the statistics provided by the moderators of the educational portal "OER commons" in the subject areas of electronic educational resources published on this portal (OER Commons & Open Education, n.d.) (Fig. 1).

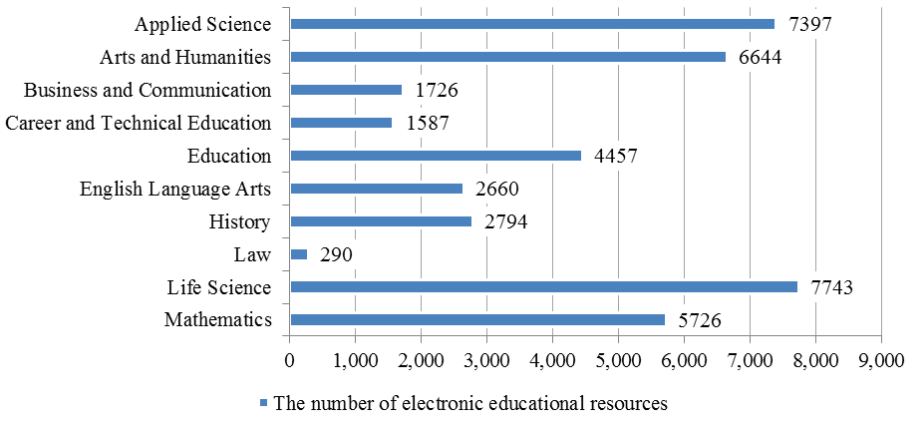

Figure 1. Statistics of the OER commons for subject areas of electronic educational resources. Source: OER Commons & Open Education (https://www.oercommons.org/about).

Obviously, such a comprehensive and all-inclusive educational space goes far beyond the university's capabilities, and turning to it for competencies, the further the student will go, the more he will get out of the influence of the university tradition. Several researchers, in particular, by Linda Castañeda and Neil Selwyn (2018), note a higher than ever degree of individualization of education due to the exit of students from the formal educational group into the global education space.

Digital Education and Reproduction of the Traditional Worldview

One of the results of this process is the elimination of the worldview component from education, while its reproduction used to be one of the functions of the traditional educational system. Digital education focuses on the distance formation of competencies, which are necessary, first of all, for professional activities. Thus, most traditional education functions remain on edge or even outside the mainstream, one of the principles. Education in the digital world is becoming a part of the postmodern world, being included in the process of deconstructing global discourses by refusing to support them (Vorontsova, Arakelyan, & Baranov, 2020). This is facilitated by the fact that both developers and consumers of digital educational resources are primarily representatives of the generations of the nineties of the twentieth - the first decade of the twenty-first century, that is, the generations least of all influenced by traditionalism. Thus, the transmission of the traditional worldview utilizing institutional education remains limited to the walls of the university lecture room. In contrast, the wall-free global audience of the digital education space reflects and retransmits all variants of the view of the world and the place of a man in it, shared among the so-called "Generation Z".

At the same time, the possibilities of digital education in the field of deconstruction of traditional discourses, as recent studies show, should not be overestimated. Several authors directly point to the persistence of the influence that the cultural characteristics of students have on the functioning of educational institutions in the era of digital education. The fact that the cultural characteristics of students continue to influence learning outcomes in a digitalizing world is indicated, in particular, by Ivo J.M. Arnold (Arnold & Versluis, 2019). The importance of the cultural characteristics of students in the use of modern educational tools is also indicated by Alexander Whitelock-Wainwright (Whitelock-Wainwright et al., 2020).

Digital Education and the Status of a University Diploma

Another equally important consequence of the digitalization of education is the change in its value status and, consequently, its role as an indicator of the status of an individual. The universal accessibility of open digital education radically changed the historical situation when the opportunity to get higher education was a lot of the few. The non-institutional nature of open educational resources makes it possible to receive high-quality education with all relevant competencies, flexibly using one's own time and not giving up one's usual professional and social activities. Labour costs for education have been significantly reduced and continue to decline with the spread of mobile technologies and the development of specialized software allowing the access to open educational resources anytime from anywhere in the world in any way most convenient for the subscriber - textual, audiovisual, in the form of an electronic book, business game, chat or quest. Accordingly, before the beginning of the digital era in education, possessing a university diploma automatically meant at least potentially belonging to a higher social stratum than those who do not have it.

In contrast, today, the value of institutional higher education has noticeably decreased. This situation makes several researchers wonder about the future of institutional education in a modernizing world. The contradictions between the need

for formal higher education and the declining role of traditional educational institutions are noted, in particular, by Mark Murphy and Cristina Costa (2019), according to whom the spread of digital education "…has the potential to change the shape and substance of public intellectualism" (p. 205). Moreover, the mass consciousness gradually develops and strengthens the understanding that a person who has not received institutional higher education in its traditional form in many areas of social life but who has mastered the necessary competencies due to open digital resources may be more successful than a university graduate.

First of all, of course, this applies to areas of activity related to managing and using the global information space. In contrast, many significant social areas, including those ensuring civilization sustainability - scientific creativity, medicine and health care, engineering, and the like - still require and will require sophisticated theoretical and practical training, which so far only traditional educational institutions can provide. Nevertheless, it is precisely the activity in the informational sphere that has the most significant influence on the consciousness of modern society, and it is precisely its results that are most obvious to the modern mass carrier of this consciousness. In addition, educational technologies keep improving, including an increasing variety of ways to provide a superficial mastery of theory and the formation of all kinds of practical skills, including those not directly related to the use of the global information space. For example, David Conde-Caballero, Carlos A. Castillo, Inmaculada Ballesteros-Yáñez and Lorenzo Mariano-Juárez (2019) point to the successful use of educational blogs in nursing education at the University of Castilla-La Mancha, one of the areas where University education has been indispensable for some time. It can be expected that, over time, this process will cover all areas of educational activity, and the quality of digital distance education will be equal to that of classical university education. If this happens, the former prestige of the university diploma will be lost, and the university, having lost the monopoly of a single educational centre, may retain its importance as a provider of high-quality educational resources and an attestation centre that provides an assessment of knowledge gained through digital educational technologies and licensing of professional activities in areas where it is provided by law.

Transformation of the Clerisy

As noted above, the global education space is taking over the functions that previously belonged undividedly to traditional educational institutions. The advantages of distance digital education are becoming more and more tangible; its shortcomings compared to the classical university are receding into the background and are gradually being eliminated. An increasing part of society is covered by the influence of digital educational technologies, replenishing the audience with relevant resources, portals and web communities. The role of higher education in social positioning is declining, while the importance of networking skills, including educational ones, is growing.

A direct consequence of this is blurring the boundaries of such a social group as clerisy. Until the end of the twentieth century, it was necessary and, at the same time, a relatively small part of society. By uniting people whose professional activities were primarily associated with the use of their intellectual abilities, they formed a kind of intellectual framework of society, playing a decisive role in shaping public consciousness. The representatives of the intelligentsia formulated ideas that later became the basis of the worldview of their contemporaries, preserved traditional and offered new social values, relayed them to the next generations in educational institutions, and popularized them through works of literature and art and the media. The comparative smallness of this social group was ensured by the difficulties of obtaining a higher education, which served as one of its distinguishing features. Being the custodian and distributor of knowledge, primarily scientific knowledge, cleri-

sy in many countries considered themselves a chosen community, performing a particular social mission on which the stability of civilization and continuity in its development depended.

The widespread of open-domain and non-institutional digital education technologies undermine the very basis for the existence of such a community. An information monopoly becomes impossible in a world where any amount of knowledge is available to anyone in any place and at any time, requiring incomparably less labour to master than it used to in the pre-digital era. The production and distribution of knowledge are reaching a qualitatively new level, and the professional intermediary between the cognitive sphere of civilization and an ordinary member of society is losing its significance. The role that used to belong to clerisy is moving to the global information space and digital education systems. The "capital of dormant knowledge" previously scattered among the representatives of the community of intellectuals worldwide (Bandyopadhyay et al., 2016) is awakening and becoming the property of many people who previously did not have access to it. A new bank of social knowledge is being formed - impersonal, non-institutional, comprehensive and publicly available, possessing incomparably greater authority than the former clerisy and an infinitely more diverse arsenal of means to shape the consciousness of each individual and the society as a whole.

However, this process does not mean the disappearance of clerisy as such. Instead, we can talk, as in the case of the university – its source and home, about changes in their nature and functions as a social group. The former professional intelligentsia is being replaced by a new type of only partially professional clerisy, their essential characteristic being an active role in shaping the information space, which unites representatives of most diverse communities, from researchers to bloggers, so one and the same individual can simultaneously enter into many of the communities. In the educational field, this new clerisy acts as a developer and expert of educational resources, providing the necessary quality of digital education and promoting it in traditional educational institutions.

Discussion

An analysis of the scientific literature on the topic of the study has shown the following coincidences with the conclusions of the authors of this article. For example, scientists point to traditional educational institutions' complex transformation and subjects. A modern teacher must have general and pedagogical digital competence and new professional digital competence to actively use the possibilities of the digital world in his work (Starkey, 2020).

The message of the authors of this article about the special role of digital space as a new independent subject in the educational process is also confirmed in scientific publications. For example, scientists point to an essential skill in the work of a modern teacher - the ability to manage the digital learning environment by improving digital content and developing ways of digital communication with students. Teachers should now consider the quality and content of the digital environment, which largely determines the educational process (Villarreal-Villa, Garcia-Guliany, Hernandez-Palma, & Steffens-Sanabria, 2019).

Other scientists write about the change in the traditional educational teacher-student model, with the transfer of knowledge and experience occurring exclusively based on traditional educational institutions. An open, shared, inclusive digital space expands the boundaries of the traditional educational process and allows the student to build unique, individual educational trajectories (Catalano, 2019). This is also consistent with the conclusions of the authors of this article.

As scientists note, the deinstitutionalization of classical educational institutions takes place via digital technologies. All areas of the economic activity of an educational organization are subject to automation and digitalization (Sharipov, Tumbinskaya, & Safiullina, 2021). This corre-

sponds to the conclusions of the authors of this article about the penetration of digital technologies into all areas of educational activity and the acquisition of a new quality of the teacher-student model. The traditional model now takes the form of teacher-digital environment-student. Accordingly, the digital environment requires particular ways of communicating and protecting information (Ismagilov et al., 2019). Such technologies are developing and modifying the requirements and rules of work of educational institutions. To access the information environment, you must follow all established procedures and meet certain criteria (Panischev et al., 2020). This confirms the thesis statement of the authors about the emergence of a new independent subject in the communicative connection between a teacher and a student - a digital educational space. Like capital under capitalism, which "owns" an employee by appropriating his labour force, the digital education space sets its own rules of the game by appropriating the knowledge and skills of the whole society.

Moreover, it is safe to note that the functions of institutional educational structures are changing and focusing on the processes of control, coordination and certification of students only in certain areas of activity where it is essential to ensure the verification of physical skills and abilities. Even the most critical function of universities and schools - the transmission and formation of a traditional worldview - depends on the digital educational environment. Other scientists also note it. The formation of legal value systems among students depends on modern digital technologies broadcasting desirable models of behaviour in a person's social and economic activities (Saraev, Pratsko, Korolenko, & Marchenko, 2021).

The following authors' idea about the impact of the digital educational environment on students' professional future is also confirmed in the scientific literature. Scientists note the unique nature of the digital generation and the difference in professional training processes in the modern world. Digital education implies a broader range of competencies and dynamically changing professional guidelines (Zeer, Tserkovnikova, & Tretyakova, 2021).

Also, scientific publications indicate the relevance of anthropological aspects of digital education. It is proposed to use three aspects of professional training: cognitive, moral, ethical, and value-based. This will increase the motivation of students when using digital education. This confirms the authors' statement about the erosion of the functionality of traditional educational organizations and the increasing role of the digital educational space, not only in the field of shaping the professional future but also in the formation of the individual, acquiring the ideological foundations of one's life activity (Gabdulhakov, Novik, & Yashina, 2020). The status of higher education is also gradually changing.

Along with digital technologies and the expansion of the digital education space, the requirements for the workforce and specialists are increasing. Just a higher education diploma is no more extended enough to find attractive positions in the labour market. This indicates a decline in the status of higher education. Like the authors of this article, scientists note in their publications that the digitalization of education has not only led to a change in the ways of teaching at universities but has also forced teachers to think in a new way, change the philosophical foundations of their pedagogical activities (Jayadi & Abduh, 2020).

However, it is worth agreeing with several scientists who note that the rules for forming the ideological and ethical foundations of people's behavior in the digital environment have not yet been determined. There are many adverse effects in the process of socialization in a digital society. There are cases of aggressive and deviant behaviour of young people in the digital environment (Tolstikova, Ignatjeva, Kondratenko, & Pletnev, 2021). This again proves the correctness of the authors' conclusions in this article. They state the crisis of traditional educational institutions and the instability of modern digital education, its underdevelopment, lack of system and, in some

cases, the danger to a person and society.

There are also changes regarding the translation of standards of behavioural norms. In the era of traditional education, such standards of behavioural norms were broadcast by people with higher education. In contrast, in the era of digital education, with the lowering of the status of a higher education diploma, it is difficult to say which factor will be dominant in determining the standards of behavioural norms. Therefore, the authors of this article also agree with scientists' ideas about the high priority of social responsibility of digital education (Vásquez Ibáñez, 2019). This is since digital education is a relatively new but dynamically developing phenomenon. Digital education has gained momentum during the coronavirus pandemic and the need for remote learning and work (Kaputa, Loucanova, & Tejerina-Gaite, 2022). At the same time, scientists note that digital education, along with cost reduction, also leads to a decrease in the ability for personal communication. This confirms the authors of this article that shortly, new social structures may arise, setting the rules of the game in society and associated with the digital transformation of education (Zelentsova & Tikhonov, 2020).

Thus, most of the scientific results and conclusions of the authors of this article are confirmed in the publications of other scientists. At the same time, debatable points remain in studying digital education's anthropological and philosophical foundations.

Conclusion

In the course of the study, the authors have identified the main trends in the development of education related to the processes of its digitalization. These include: firstly, the deinstitutionalization of education associated with the formation of a shared global education space, the capabilities of which already now in many areas significantly exceed those of traditional educational institutions and continue to expand; secondly, the decrease in the role of education in maintaining and reproducing the traditional worldview; thirdly, a significant change in the status and role of the university in education; fourthly, the transformation of the intelligentsia and the formation of a new type of clerisy. We would also like to note that many aspects of the digitalization of education still require more detailed research. Thus, for example, the changes in public consciousness brought to life by digital educational technologies, the prospects for the evolution of social structures in the light of the spread of digital education, etc., are still insufficiently studied.

Acknowledgements

RFBR, project number 19-29-07037 funded the reported study.

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DOI: 10.24234/wisdom.v2i1.766
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THE PARADIGM OF INNOVATIVE ECONOMIC DEVELOPMENT: A NEW PHILOSOPHY OR THE BASIS OF EVOLUTION IN THE CONDITIONS OF DIGITALISATION

Abstract

This article discusses the processes of implementing innovative prospects for developing the Russian economy in the context of digitalisation. Currently, in countries with a high level of innovation component in all spheres of economic activity, innovation is fundamental for the development of the economies of these countries. Innovative development is an integral part of economic development philosophy in countries such as Germany, Sweden, Japan, South Korea, China, the USA, and other developed countries. Unlike the countries mentioned above, the economy of the Russian Federation, despite the existing high innovation potential, is an economy in need of significant refinement. Innovations must be the basis of modern philosophy and the development and transformation of the Russian economy. The authors consider the model of innovative development and the processes associated with the improvement of innovation as a philosophy of development and transformation, which will provide the basis for the economy's evolution in the current situation and increase the competitiveness of enterprises of the Russian Federation. In the article, the latency of innovation is proposed as an aspect of innovative development – to transform existing developments and generate new ideas.

Keywords: paradigm of innovative development, philosophy of innovative development, economic evolution, digitalisation, innovation latency.

Introduction

The rapid development of information technologies, nanotechnology, artificial intelligence, and the Internet of Things catalyses the introduction of digital technologies into various economic and socio-political aspects of society worldwide. In the context of global digitalisation, the successful development of the economy of the Russian Federation is significant, and the competitiveness of Russian manufacturers in the world market is also significant. Russia can become the leader of the international innovation market based on the paradigm of continuous innovative development, which is based on the active use of knowledge, that is, on their constant generation, transformation, accumulation and development. With this approach to the innovation process, knowledge becomes primary, and production, financial and infrastructure resources become secondary (Stepchenko, Davydova, Aldoshin, & Novikov, 2019). The knowledge economy is the highest stage in developing an innovative economy, in which a person, his knowledge, intellectual capital and creative component take the leading roles (Shumikhin, 2017). It has to be stated that the basis of the Russian economy is still a raw material growth model, which ensures development under certain conditions due to high demand and high prices for hydro-

carbons and other raw materials. As an example, we can cite high gas prices in Europe on the spot market, which allows Russia to receive additional revenues to the budget from the activities of PJSC GAZPROM. We have to admit that the winter period will pass, European countries will not abandon alternative energy and high demand, and with its high prices for raw materials, they will not be able to support the economy of the Russian Federation for a long time. The rise in prices will be followed by their fall, immediately affecting the decrease in revenues coming to the budget. Therefore, to reduce dependence on market conditions and prices for hydrocarbons and other raw materials, it is vital to transfer the economy of the Russian Federation to a new development philosophy based on the widespread creation and implementation of innovations. The paradigm of innovative development should become the basis for the economy's evolution in modern, rapidly changing conditions. "The transition of the economy to a new qualitative level of development occupies one of the main places in the development of a non-raw material growth model, which underlines the relevance of the study of the prerequisites and stability of the formation of the digital economy and the development of innovative orientation of all business entities" (Zakharov, 2020).

Unfortunately, it is not the philosophy based on the paradigm of innovative development in our country, but even the very concept of innovation is not sufficiently clear to most citizens. Someone believes that innovation is any innovation, that innovation is the introduction of modern technologies, and that innovation is an investment in promising projects. Speaking in general, the concept of innovation and an innovative approach is quite complex and incomprehensible for the majority of the population and enterprises, which cannot but affect the transition to a new philosophy of developing the entire economy. It is impossible not to agree with the statement that "to activate innovation activity in Russia, it is necessary to understand the philosophy of creating and implementing innovations" (Zavadovskiy, 2011).

Analysis of Competitiveness and Innovative Development of the Domestic Economy in the World Market

According to recent studies, in 2020, Russia ranked 11th in terms of GDP globally. The data are shown below in Fig. 1.

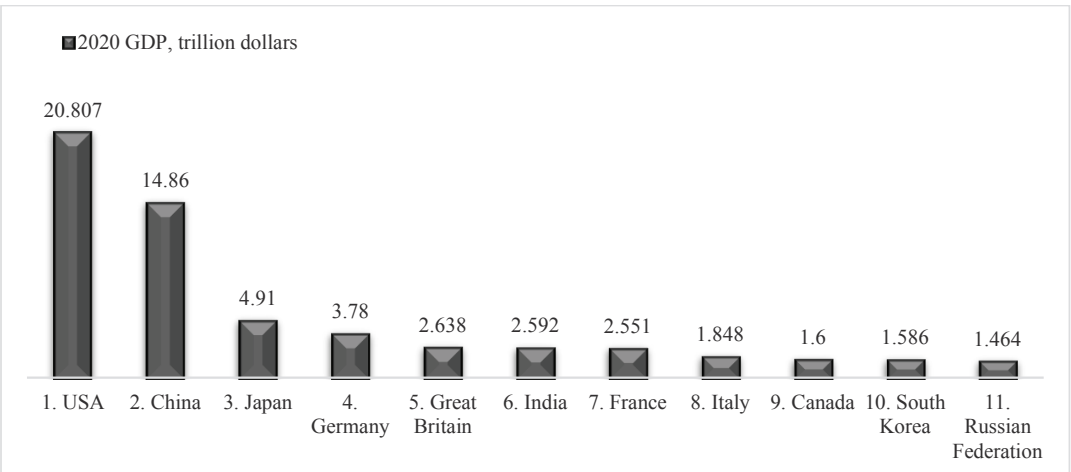

Figure 1. The level of GDP in the world's leading countries (compiled based on Simonov, 2021).

As before, the basis of the Russian economy is the raw material model of development and growth. Despite the loud statements of individual politicians and leaders, the Russian economy has not undergone significant changes in its development strategy. As a result of this development approach, a completely different situation develops if we look at Russia's location in the world ranking by the level of innovative development. Countries such as the USA, Great Britain, Germany, and South Korea are also among the top 10 countries in terms of innovative development. Not far from them (in the second ten) are China, France, Japan, and Canada. All countries that are among the top 10 economies globally in terms of GDP occupy leading positions in terms of innovative development. Russia, with low production volumes of high-tech products (Mandych & Bykova, 2021), is far from the leaders and ranks 47th (Global Innovation Index, 2020). We would like to draw attention to the fact that Russian small innovative enterprises (Korsakova, Dubanevich, Drozdov, Mikhailova, & Kamchatova, 2021) make an active contribution to the level of GDP and digitalization of the Russian economy, but this is not enough and requires the inclusion of a more significant number of large enterprises in the process, the quality of whose employees has begun to grow significantly recently.

The situation in the world competitiveness ranking is not the best for Russia either. Thus, in the overall world competitiveness ranking for 2021, Russia ranked 45th (World Competitiveness Ranking, 2021). Russia is ranked 42nd in the World Digital Competitiveness Ranking for 2021 (World Digital Competitiveness Ranking, 2021). It has to be stated that in the global economy, the countries that create and provide the most favourable conditions for innovative development are more competitive. "The presence of these circumstances determines the formation of a macro-competitive paradigm of innovative development of the national economy, including the creation of effective mechanisms for generating innovations" (Popova, Korostelkina, & Dedkova, 2018, p. 44). The economy of the Russian Federation has good opportunities to adapt to the digital economy. The presence of high educational potential and good material and technical base can positively impact adaptation to new conditions of economic activity (Batrakova & Kolpakova, 2012).

According to the authors of the article, the modern paradigm of innovative development aimed at increasing the productivity of intellectual resources (Akopova & Panasenkova, 2012) should ensure not only the effective organization of interaction processes between economic entities but also the improvement of the interaction of various links aimed at continuous training, professional development and creative activity (Smirnov & Kadyshev, 2012). To do this, it is necessary to understand and accept the philosophy of economic development based on the paradigm of innovative development. The sooner this is implemented, the sooner the Russian economy will be able to embark on an intensive development path through innovations.

Innovation Latency as one of the Aspects of the Philosophy of Innovative Development

According to such authors as Duysekova Z. and Lebedeva S., the philosophy of innovation activity is to transform a successful idea into a mass-use product. At the same time, the idea, investment and innovation are integral parts of this philosophy (Duysekova & Lebedeva, 2016). We agree with these authors that the main stages of the innovation process, idea - investment - innovation, are integral parts of this philosophy. However, I would like to note that the result of the commercialization of an idea is a product that can be sold profitably, not a product as a category. The demand distinguishes innovation from a product as a category.

Moreover, this product does not necessarily have to be of mass use. Innovation as a product can also be aimed at a narrow market segment. In addition, a distinctive feature of innovations from traditional goods is the presence of innova-

tion latency, which means a reserve of further improvement and development hidden in the innovation, which can manifest itself after a certain period under the influence of scientific, technical and economic factors (Sekerin, Burlakov, Bank, & Gorokhova, 2017). We believe that this category should be added to the main aspects of the philosophy of innovative development (Fig. 2).

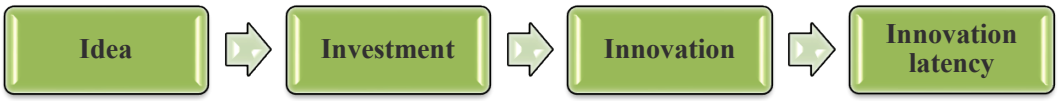

Figure 2. The Main Aspects of the Philosophy of Innovative Development.

It is believed that the latency of innovation is unintentional, and its manifestation is not always realized immediately, and sometimes it remains completely unconscious until the end (Burlakov, Sekerin, Gorokhova, & Dzyurdza, 2017).

In fact, there are three types of innovation latency: conscious, progressive, and sudden. Sudden latency is characterized by a high degree of uncertainty since this latency is probabilistic, while progressive and conscious latencies are more deterministic. Planning the latency expected from innovation is of great practical importance. Emerging individual situational factors can influence the identification and implementation of innovation latency. While maintaining consistency in working with existing innovations to identify their latency, it is possible to neutralize emerging risks and bring them to calculated expectations.

In order to identify the latency of innovations, it is possible to use methods of formalized presentation of innovation as a system and methods of activating the intuition and experience of specialists, supplementing them with particular methods of formalization of tasks. Based on the results of the conducted research and calculations, the latent properties of the innovation under study are identified, highlighted and systematized, and recommendations for their manifestation in the external environment are written. The authors would like to note that the identified latency is implemented according to the plan established by the innovative enterprise, in the preparation of which customer orientation and market expectations, including formed demand, are of great importance. The category studied by the authors, innovation latency, currently contains non-existent opportunities for both innovative enterprises and potential customers.

In conditions of the highest market competition and chaotic fluctuations of market conditions, there is a rapid renewal of the assortment and novelties and working with the latency of innovations is a very resource-intensive and renewable process. In some cases, the identified latency of innovations can be a source of scientific, technical, economic, and social development within the enterprise and the state.

The realization of innovation latency can result from a combination of well-known innovations, their transformation, or the sudden discovery of a new innovative value of a product. As noted earlier, latency innovation is of three types: conscious, progressive and sudden. Conscious manifestation of innovation involves the manifestation of new or additional properties of the product, in response to the consumer's request, now or after some time, creating a sense of control over the process of product transformation in the consumer, working with the expectations of the consumer will essentially be able to involve the consumer in contact with innovation. The progressive manifestation of innovations will allow the researcher to be involved in working with innovation due to the high detectability of such innovations in the short and medium-term and will significantly reduce the cost of developing innovative products. With the correct formation of a culture of working with innovations in society based on the philosophy of innovation,

Sudden innovations will allow more often to identify unpredictable and hidden ideas, creating prerequisites for the emergence of breakthrough technologies. The most attractive from the authors' point of view in the proposed philosophy of innovation is the absence of boundaries for the development of innovation in general and each innovative idea in particular. The latency of innovations as part of the philosophy of innovative development can ensure stable, controlled growth of the innovation potential of any product being developed, the enterprise and society as a whole, thereby ensuring the efficiency and competitiveness of the enterprise participating in the ongoing developments.

Discussion

The authors' scientific novelty consists of the proposal to include the category of innovation latency in aspects of the philosophy of innovative development. The authors describe and propose a mechanism for working with innovations and innovative products, which allows multiplying the possibilities of implementing an idea at any implementation stage. A characteristic of the described category is given. The practical application of the approach to working with innovations through the prism of innovation latency will change not only the depth of understanding and the possibilities of applying the philosophy of innovation as a separate category but also ensure a reduction in project implementation time and growth of economic indicators, thereby ensuring the competitiveness of the products being developed, and as a consequence of the economy of enterprises and the country as a whole, both in the short and long term.

Conclusion

The paradigm of innovative development is designed to ensure the creation of conditions in the Russian Federation that will increase production volume and improve the quality of innovative products. The Russian economy has good potential and sufficient human resources to change its trajectory towards an economy based on knowledge and scientific developments. The assistance and efforts of foreign partners are increasingly creating prerequisites for the accelerated implementation of these processes. In order to realize the innovative potential available in the Russian Federation, it is necessary to adopt an innovation philosophy based on the paradigm of innovative development in the economy of both enterprises and the Russian Federation as a whole. In the philosophy of innovation development of enterprises and projects, along with such aspects as an idea, investment and innovation, it is necessary to consider the latency of innovation. The proposed philosophy of development and implementation of innovations, taking into account the latency of innovations, will essentially ensure the quality of work with innovative products, will reduce the cycles of development of innovative products, will ensure the formation of a new culture of work with innovations, and thereby ensure the innovative development of the Russian Federation both in the short and long and medium-term, thus ensuring an increase in the country's defence capability and significant economic growth.

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DOI: 10.24234/wisdom.v2i1.775
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ADVANCED VOCATIONAL TRAINING OF SCHOOLCHILDREN: PHILOSOPHICAL ASPECTS OF UNDERSTANDING

Abstract

The study aims to determine the philosophical and methodological aspects of advanced vocational training for students at school. The article uses philosophical methods to identify the main approaches of modern philosophy to the problem of advanced vocational training. A set of empirical methods was applied: literature study, survey (oral and written). To achieve the goal, the following tasks were solved: considering approaches to the concept of advanced vocational training of schoolchildren; highlighting the main aspects of advanced vocational training of schoolchildren; studying the current condition of the arrangement of advanced vocational training of schoolchildren. The problem of this research lies in the issue of disclosing the structure of advanced vocational training. Four units were identified, by the development of which one can judge on the degree of orientation of the educational process in a school towards the vocational training of students. The results of a survey of schoolchildren revealed that the most developed unit of advanced vocational training is the formation of meta-subject competencies, taking into account the professional orientation of the student. Similarly, with meta-subject competencies, average indicators are observed in the assimilation of labour skills.

Keywords: philosophical aspect, advanced training, technological education, vocational education, technology, school education.

Introduction

In modern times, it is already difficult to imagine what technologies will be like in ten or twenty years (Vorontsova, Arakelyan, & Baranov, 2020). The twenty-first century is characterized by significant changes in the professional and educational fields (Jüttler, Schumann, Neuenschwander, & Hofmann, 2021; Mikhailov, Tikhonov, & Margarov, 2022).

The fourth industrial revolution or Industry 4.0 and rapid changes in professions lead to a rapid change in the world so that the content of education does not have time to update, what with the coronavirus pandemic, having a significant impact on all areas of human life, technological discoveries, increased life expectancy - all this undermining the traditional established practices of education and training of specialists (Moiseev, Pastukh, Nitsevich, & Stroev, 2021; Tikhonov & Novikov, 2020).

The twenty-first-century workplace is more dynamic than ever, and people need to be prepared to make many career decisions (Husain & Mahfoodh, 2021; Tsakissiris & Grant-Smith, 2021; Kabakus & Senturk, 2020; Craps, Pinxten, Knipprath, & Langie, 2020). Accordingly, schools are now facing the challenge of preparing students for career transitions and lifelong learning to enable individuals to acquire new skills and navigate an uncertain future with confidence (Moon & Hong, 2022; Fung, Taal, & Sim, 2021; Knipprath, 2013). A successful person in the 21st century should acquire a good profession and be ready for self-improvement, including vocational retraining, which often outpaces the actual pace of change in the professional sphere.

The problem of this study lies in the issue of disclosing the structure of advanced vocational training.

This article aims to determine the philosophical and methodological aspects of advanced vocational training for students at school.

To achieve the goal, the following tasks were solved:

- Considering approaches to the concept of advanced vocational training of schoolchildren.
- Highlighting the main aspects of advanced vocational training for schoolchildren.
- Studying the current state of the organization of advanced vocational training for schoolchildren.

Literature Review

It is necessary to determine the essence of advanced training. The term "to advance" is defined in the dictionary of the Russian language by Ozhegov S. I. (2010) as "moving in the same direction with someone or something, to be ahead, overtake" (p. 1664). In the explanatory dictionary by V. Dahl (1998), "to be ahead" means "to get somewhere on time, or succeed in something earlier, before another one" (p. 704).

For further discussion, it is necessary to dwell on several definitions. By *vocational training*, we mean "the process of acquiring knowledge, skills and abilities enabling one to perform work in a particular field of activity." This definition can be found in S. M. Vishnyakova's research (1999) on vocational education and in the new dictionary of methodological terms and concepts by E. G. Azimov and A. N. Shchukin (2009). We were unable to detect any ambiguity or fundamentally different interpretations.

We will understand the concept of *advance* in the following context: we do something not to catch up on something but to foresee (prevent) it. Such an understanding of the term *to advance* does not contradict the definitions of being ahead of something in works in pedagogy (Sedov & Kashfrazyeva, 2022).

Before introducing this term, Karl Marx also thought about those issues. When considering the anticipation of the results of a person's activity, he said: "The worst architect initially differs from the best bee in that before building a cell of wax, he has already built it in his head. At the end of the labour process, the result is obtained, which has already been presented in the person's mind at the beginning of the process, i.e., ideally. Not only does a man change the form of what is given by nature; in what is given by nature, he also fulfils his conscious goal, which, as a law, determines the way and nature of his actions and to which he must subordinate his will" (Marx & Engels, 1960).

Among the terms *advanced education*, *advanced training*, *and advanced upbringing, the mutual conditionality is exactly the same as education, training, and upbringing*. All subordination is preserved. The term *technical training* is equal in its meaning to *advanced training*. Further, we will say "*advanced training in the profession*" or "*advanced vocational training"*.

The concept of *advanced training* is revealed in the works of various scientists in the field of education, philosophy, sociology, physiology, psychology, the system of general education, and the system of vocational education. In each case, the definition of *advanced vocational training* receives a specific context for a specific science (Novikov, 2002; Bim-Bad, 1988; Vygotsky, 1982).

With a number of formulations of different scientists, each treating advanced training in its spectrum and giving a slightly modified, but semantically not very different formulation, and with the fact, the formulations considered above do not contradict each other, we do not see the point of formulating our fundamental vision of the term. We will imply that *advanced professional training* is understood as the wording suggested by A. M. Novikov (2000), speaking about it in a broad sense: "keeping ahead", which manifests itself "in the interaction of the content and the process of transferring knowledge structured

in a certain way and is aimed at developing a human predisposition to master it, with the result showing in the ability to increase knowledge" (p. 42) actively.

The advanced professional training of schoolchildren has a specific philosophical meaning and relevance. The current social order for education sets new tasks for the school due to changes in society, the economy in general, and the world of professions in professions particular. The new educational standard, the exemplary basic educational program of primary general education (EPEP 2015 as amended in 2020), the concept of teaching technology (2018), and several government documents dictate the need to find and implement new solutions in the technological preparation of schoolchildren. Technological training of schoolchildren, like no other subject area, is responsible for further professional self-determination, choosing a profession and - awareness of the possibility of further diversity in these professions (Bochkareva et al., 2020; Kamaeva, Zemsh, Gilmanshina, & Galich, 2021).

On May 7, 2018, a decree of the President of the Russian Federation "On the national goals and strategic objectives of the development of the Russian Federation for the period until 2024" was issued, stating the need to update the content and improve methods of teaching the subject area "Technology" and on December 29, 2018, the *Concept of teaching the subject area "Technology"* (The concept of teaching the subject area "Technology" in educational institutions of the Russian Federation, implementing the main general education programs, 2018) was prepared in educational institutions of the Russian Federation that implement the main general educational programs (from now on referred to as the *Concept*). The main goal of the *Concept* is to create conditions for the training of specialists capable of mastering and developing priority areas of scientific and technological progress in the development of the Russian Federation.

The concept involves implementing three main areas we summarize below in the form of a table (Table 1).

Table 1.

The Main Content Fields of the Subject Area "Technology"

Content fields	Description
First content field	introduction to the context of the creation and use of modern and traditional techniques, the technological evolution of humankind, its patterns, modern trends, and the essence of innovation;
Second content field	gaining experience in personalized action and labour education in the process of developing technological solutions and their application, studying and analyzing the changing needs of an individual and society;
Third content field	introduction to the world of professions, including those of the future, professional identity (professional tests based on types of work, labour market structure, innovative entrepreneurship and their organization in the region of residence, WorldSkills standards).

These vectors of development aim to prepare students for professional activities in the new realities. Furthermore, taking into account the dynamics of the labour market and the unprecedented pace of modernization in this area, the main task of technological education is not just to acquaint students with the modern world of professions but to prepare them for the professions of the future and prepare them for the changing market conditions.

Of particular relevance is the issue of organizing advanced vocational training for students in a secondary school.

Methodology

The article uses philosophical methods to identify the main approaches of modern philosophy to the problem of advanced professional training. The methodological basis of the study is general scientific methods of cognition, including analysis and synthesis (as a general methodological approach), comparison, generalization, and methods of systemic, complex, logical, structural, comparative and statistical analysis. These methods have been used in different combinations and at different stages of the study, depending on the goals and tasks to be solved. This, of course, has helped to ensure the reliability of the analysis and the validity of the conclusions made by the author.

The article uses theoretical methods: the method of systemic analysis of knowledge, abstraction and concretization, and analogy.

A set of empirical methods has been applied: literature study, questioning (oral and written) of documents, performance results, and observation. Empirical methods were also used, reflecting the methods and forms of organization of research activities: questioning, monitoring, studying and generalization of experience.

As part of the study of the structure of advanced professional training of schoolchildren, a survey was conducted among students in grades 8 and 9. 153 students took part in the survey. The average age of the respondents is 15 years. The survey was conducted using anonymous questionnaires and testing. The survey was made possible thanks to the school's director, class teachers, teachers and parents of students.

The questionnaire included 15 points, where students had to put down scores from 0 to 5 following the degree of agreement with the statements (Table 2).

Table 2.

List of Statements for Conducting a Survey of Students in Grades 8 and 9

Statement	Scores (0-5)
1) When doing homework, the teacher allows me to consider my professional plans for the future.	
2) During my answer at the lesson, the teacher always asks to clarify what value the new knowledge or mastered action has for me personally.	
3) The teacher often asks us to independently come up with and complete a task on the topic covered.	
4) Each of the students periodically prepares and delivers a report on the prospects for the development of the profession studied and the position within the profession he can personally practice.	
5) During classes, we often team up with other students and fantasize about what professions will be like in the future.	
6) Theoretically and practically, by getting acquainted with various technologies, we determine which professions are associated with them and whether we can find our profession in this area.	
7) If any profession attracts me, then I try to get detailed information about it and understand what I personally lack in order to take the appropriate position.	
8) When doing a practical task, I always try to understand whether I can do it professionally in the future and why.	
9) Performing practical actions, I always fantasize about how it could be in the future.	
10) We conduct educational research, identifying the need of the labour market for those professions that we like most of all.	
11) I explore the professions that interest me and highlight the qualities I need to develop.	
12) At the lessons, we learn how to write a resume, have interviews and present ourselves to the employer.	

13) The teacher gives everyone the same tasks, each having the correct answer.	
14) We never talk about what this or that profession will look like in the future.	
15) I rarely think about my future profession, imagining it only in general terms.	

The thirteenth, fourteenth, and fifteenth statements were the test for the students on the veracity of the answers. The thirteenth point tested the first point, the fourteenth – the fourth one, and the fifteenth – the seventh point, respectively.

Research Results and Discussions

We have determined students' competencies through their ability to perform certain actions. The concept of advanced vocational training for schoolchildren will differ from that of an adult, particularly in its vagueness and lack of a final result - it cannot be reached at school because there is too much time before schoolchildren enter adult professional activity. They themselves will change, and the world will change, so students cannot make a final decision at school. Children can learn how to learn. Advanced professional training consists of the following units and determines the individualization of technological education, the professionalization of meta-subject competencies, basic professional actions, orientation in the world of professions and employment.

Each of these four units is given the corresponding competencies of students, characterized by the following components:

1st unit - Individualization of technological education. Relevant competence in this unit is:

- The student can independently correct (clarify, concretize) the content of the educational task, coordinating it as much as possible with his own characteristics and interests, justify the decision, perform the action and present its results.

2nd unit - Professionalization of meta-subject competencies. Relevant competencies in this unit are:

- The student is able to characterize professions, including taking into account the main trends in their development, using subject and interdisciplinary concepts, and correlating professions and universal educational activities necessary for their successful development.
- The student can independently plan his professional future and build an individual trajectory of their achievement within the framework of educational activities and cooperation with teachers and peers.
- The student is able to work with information about the content of professions and requirements for employees.

3rd unit - Basic professional actions. Relevant competencies in this unit are:

- The student can implement basic professional activities, assuming the prospects for their technological development and determining the possibility of linking their professional future with these activities.

4th unit - Orientation in the world of professions and employment.

Relevant competence in this unit is:

- The student is able to determine a profession that is attractive for him from the standpoint of his own interests and opportunities, evaluate labour market offers and build an individual trajectory for entering the attractive profession.

For each competence, the primary descriptors or criteria for the formation of this competence are identified to detail the content of the competence; they are as follows:

Table 3.

Competences, Criteria, Indicators of the First Unit –
"Individualization of Technological Education"

Competence	Descriptors (criteria)	Indicators (markers, from the student's point of view)
The student is able to independently correct (clarify, concretize) the content of the educational task, coordinating it as much as possible with his own characteristics and interests, justify the decision taken, perform the action and present its results.	1) Formulation of training tasks, suggesting the possibility of their adjustment by students	1) When doing homework, the teacher allows me to consider my own professional plans for the future.
	2) Justification by students of the expediency of their actions	2) During my answer at the lesson, the teacher always asks to clarify what value the new knowledge or mastered action has for me personally.
	3) Fulfillment of one's own (not unified) training tasks	3) The teacher often asks us to independently come up with and complete a task on the topic covered.
	4) Presentation of the results of the completed training activities with the rationale for their individual focus	4) Each of the students periodically prepares and delivers a report on the prospects for the development of the studied profession and the position within the profession he can personally practice.

Descriptors of the First unit, No. 1 competencies (Table 3):

1. Formulation of training tasks, suggesting the possibility of their adjustment by students.
2. Justification by students of the expediency of their actions.
3. Fulfilment of one's own (not unified) educational tasks.
4. Presentation of the results of the completed training activities with the rationale for their individual focus.

Table 4.

Competences, Criteria, Indicators of the Second Unit
"Professionalization of Meta-Subject Competencies"

Competence	Descriptors (criteria)	Indicators (markers, from the student's point of view)
1. The student is able to characterize professions, including taking into account the main trends in their development, using subject and interdisciplinary concepts, and correlating professions and universal educational activities necessary for their successful development.	1) Implementation of educational projects (individual/group) to correlate labour activities and professions involving them, taking into account the main trends in the development of the professional sphere (as part of the development of the module).	5) During classes, we often team up with other students and fantasize about what professions will be like in the future.
2. The student can independently plan his professional future and build an individual trajectory for their achievement within the framework of educational activities and cooperation with teachers and peers.	2) Acquaintance with the world of professions, performing professional tests, assessing the correspondence of professions to desires and individual psychological, physiological and other characteristics, and assessing the ability to work in a profession throughout life.	6) Theoretically and practically, getting acquainted with various technologies, we determine which professions are associated with them and whether we can find our profession in this

		area.
3. The student is able to work with information about the content of professions and requirements for employees.	3) Concretization of ideas about one's professional future based on versatile information about the world of work, the ability to determine one's own competence deficits and surpluses, taking into account information about the profession, to find information on ways to eliminate deficits.	7) If any profession attracts me, then I try to get detailed information about it and understand what I personally lack in order to take the appropriate position.

The 2nd unit, competence No. 1 (Table 4):

1) Implementation of educational projects (individual/group) to correlate labour activities and professions involving them, taking into account the main trends in the development of the professional sphere (as part of the development of the module).

2nd unit, competence No. 2:

2) Acquaintance with the world of professions, performing professional tests, assessing the correspondence of professions to desires and individual psychological, physiological and other characteristics, and assessing the ability to work in a profession throughout life.

2nd unit, competence No. 3:

3) Concretization of ideas about one's professional future based on versatile information about the world of work, the ability to determine one's own competence deficits and surpluses, taking into account information about the profession, to find information on ways to eliminate deficits.

Table 5.

Competences, Criteria, Indicators of the Third Unit "Basic Professional Actions"

Competence	Descriptors (criteria)	Indicators (markers, from the student's point of view)
The student can implement basic professional actions, assuming the prospects for their technological development and determining the possibility of linking their professional future with these actions.	1) The student performs basic professional actions (in accordance with the curriculum), explaining their meaning.	8) When doing a practical task, I always try to understand whether I can do it professionally in the future and why.
	2) The student assumes the prospects for the technological development of basic professional activities.	9) Performing practical actions, I always fantasize about how it could be in the future.

Descriptors of the 3rd unit, competencies No. 1 (Table 5).

1) The student performs basic professional actions (in accordance with the curriculum), explaining their meaning.

2) The student assumes the prospects for the technological development of basic professional activities.

Table 6.

Competences, Criteria, Indicators of the Fourth Unit "Orientation in the World of Professions and Employment"

Competence	Descriptors (criteria)	Indicators (markers, from the student's point of view)
The student is able to determine a profession that is attractive to him from the standpoint	1) The learner uses existing information resources and personal relationships to evaluate labour market offers.	10) We conduct educational research, identifying the need of the labour market in the professions that we most like.

of his own interests and capabilities, evaluate labour market offers and build an individual trajectory for entering an attractive profession.	2) The student correlates the labour market offers with his ideas about the professional future, building an individual trajectory to achieve the desired goal.	11) I explore the professions that interest me and highlight the qualities I need to develop.
	3) The student demonstrates the ability to present himself to the employer (CV, interviews, etc.).	12) At the lessons, we learn how to write a resume, have interviews and present ourselves to the employer.

Descriptors of the 4th unit, competencies No. 1 (Table 6).

1. The learner uses existing information resources and personal relationships to evaluate labour market offers.
2. The student correlates the labour market offers with his ideas about the professional future, building an individual trajectory to achieve the desired goal.
3. The student demonstrates the ability to present himself to the employer (CV, interviews, etc.).

Markers indicate how these descriptors work from the student's point of view and, accordingly, these indicators are the basis for the grading system. By and large, these indicators are some questions. Questions allow us by the students' answers to evaluate some of the data obtained on the condition of various parts of the process. This brings forth the technology of managing the process of advancing professional training based on the data. We can see that for each of these units, there are various numbers for us to judge which unit is acceptable and has "sags".

Based on the survey data, the following results were obtained (Table 7)

Table 7.

The Results of the Study

Statements	Percentage of respondents choosing a certain score				
	(1)	(2)	(3)	(4)	(5)
When doing homework, the teacher allows me to consider my own professional plans for the future.	47%	42%	10%	0%	0%
During my answer in the lesson, the teacher always asks me to clarify what value the new knowledge or mastered action has for me personally.	29%	20%	50%	0%	0%
The teacher often asks us to independently come up with and complete a task on the topic covered.	88%	10%	2%	0%	0%
Each of the students periodically prepares and delivers a report on the prospects for the development of the studied profession and the position within the profession he can personally practice.	95%	2%	3%	0%	0%
We often team up with other students during classes and fantasize about what professions will be like in the future.	0%	2%	63%	35%	0%
Theoretically and practically, getting acquainted with various technologies, we determine which professions are associated with them and whether we can find our profession in this area.	0%	8%	29%	63%	0%
If any profession attracts me, then I try to get detailed information about it and understand what I personally lack in order to take the appropriate position.	5%	30%	58%	7%	0%
When doing a practical task, I always try to understand whether I can do it professionally in the future and why.	5%	32%	34%	24%	6%

When doing practical actions, I always fantasize about how it could be in the future.	11%	5%	62%	18%	4%
We conduct educational research, identifying labour market needs in the most like professions.	81%	13%	3%	3%	0%
I explore the professions that interest me and highlight the qualities I need to develop.	50%	3%	20%	16%	11%
We learn how to write a resume, have interviews, and present ourselves to the employer in the lessons.	98%	0%	2%	0%	0%
The teacher gives everyone the same tasks, each having the correct answer.	6%	28%	9%	12%	45%
We never talk about what this or that profession will look like in the future.	0%	0%	22%	28%	50%
I rarely think about my future profession, imagining it only in general terms.	0%	5%	22%	54%	20%

From the results obtained, we see that most schoolchildren have answered the questions from the "Individualization of technological education" unit that this unit is not clearly visible in technological education. It is worth noting that the questions were focused on the individualization of education based on the professional orientation of the educational process, and these results show that there is no clearly defined orientation to the individual professional interests of students in the learning tasks.

Regarding the unit "Professionalization of meta-subject competencies", we see that children note an average tendency to professionalise these competencies, just like with the unit of *basic professional actions*. This shows that in the formation of meta-subject competencies, schoolchildren often emphasize students' professional prospects.

The unit of *orientation in the world of professions and employment* has a negative assessment, too.

Discussion

Scientists from around the world research to prepare students for professional activities. The following trends have been identified, and the opinions of most authors agree on this: advanced professional training should be started from school; priority is given to self-education and the development of a mentoring system.

As a result of the research by Turkish scientists İ. Dökme., A. Açıksöz & Z. Koyunlu Ünlü it was found that the motivation of students to pursue STEM did not differ depending on the level of education, the type of secondary school they graduated from, or family income. However, motivation for STEM fields differed based on the variables "receiving STEM training", "participating in STEM activities", and "having (or not having) a role model working in the STEM field". It can be concluded that advanced vocational training should start from school. It does not matter what school you study in. The family's social status is not important, nor is the family's income. It is necessary to pay attention to what kind of training you are undergoing in advanced professional training, to participate and complete the necessary developmental tasks actively and have a mentor (Dökme, Açıksöz, & Ünlü, 2022).

Interest in the development of such skills as teamwork, oral communication, and written communication can also be traced to the works by American scientists N. Chinoy, H. Stoub, Y. Ogrodzinski. Thus, American scientists have studied the formation of these competencies among students of biomedical sciences at the University of Michigan. From this, we can conclude that these competencies need to be developed beginning with school years for successful professional training (Chinoy et al., 2022).

Russian scientists D. P. Danilaev and N. N. Malivanov (2020) write in their study that technological education presented as a factor and

means of socialization of students, as well as "the process and result of the active assimilation by schoolchildren of general and professional technological culture, general and special methods of technological transformation" has undergone significant changes over the past decade: today, in a high-tech competitive world, priority is given to the ability to self-learning and the ability to advanced professional training (p. 55).

As history has shown, the economy and industry development have made people turn to school each time. Understanding that if we have suffered significant losses, for example, during the war, then the next young generation is presented by schoolchildren. Pre-professional training has been already carried out there so that most school graduates have gone to factories or mastered a profession in the evening. To date, there is a trend of rapid preparation of graduates. On September 1, 2022, the Ministry of Education of Russia's "Professionality" (QR-code) program will start, within the framework of which about 150 thousand students of secondary vocational educational institutions will start studying. Instead of four years, children will master the curriculum in two years. Since the educational process, for the most part, will be practice-oriented and better linked with the employer, it is planned to maintain the quality of education corresponding to four years of study in secondary vocational education.

It looks like the history with the bachelor's degree is going to repeat. When they introduced the bachelor's degree, they said that the quality would not suffer, we would simply concentrate, and we would do everything so that the quality of education in the speciality would not fall. The same knowledge that used to be given in five years would be given in four years. We have all seen that a specialist degree is valued higher than a bachelor's degree in practice. To go to graduate school, a bachelor must complete a master's degree.

Moreover, those who have graduated from the speciality can immediately go to graduate school. The same will happen with professionalism. The diploma of graduates will not be equal to what they receive in the SVE. It will be a level down, and employers will keep that in mind.

Obviously, the economy needs a new workforce; to increase its number and wants to employ young people as soon as possible. Therefore, it is necessary to acquaint schoolchildren with the world of the profession quickly, somehow set them up to the fact that they do not need to study at all in the 10^{th} or 11^{th} grades in order to take place in this adult world, that in two years after the 9^{th}-grade one can acquire a profession, which will help to gain success somewhere. Furthermore, advanced professional training becomes an interesting issue, not fashionable, but quite relevant.

The Ministry of Education proposes to halve the list of professions and specialities in colleges. According to the First Deputy Minister of Education of Russia Dmitry Glushko, not a single skill and not a single competence will be lost. In our opinion, the reduction in the number of professions is intended not to bind a graduate to a particular profession. They want to make sure that a college graduate with a diploma has the opportunity to get a job in many places. "The Ministry of Education plans to change the state educational standard (FSES) and make it more framework and "broad", reducing the list of professions and specialities in colleges by half and enlarging the groups of professions. According to Dmitry Glushko, they plan to leave one document for a whole group of professions, which as a result will make it possible to quickly respond to the requirements of the economy and promptly adjust educational programs" (RIA News, 2021).

There is a need to organize the content of technological education so that the minimum content gives the maximum effect and allows one to obtain the necessary competencies to master a large number of professions of the present and future.

Conclusion

According to the regulatory documents and

the strategy for the development of technological education, we can say that there is a significant reformation of education and technological education at present. Particular attention is paid to the need to restructure the content and means of education, taking into account the dynamically changing situation in society's technological, economic, and professional spheres.

We have singled out four units so that by their maturity, one can judge the degree of orientation of the educational process at school towards the professional training of students.

The results of a survey of schoolchildren have revealed that the most developed unit of advanced professional training is the formation of meta-subject competencies, taking into account the professional orientation of the student. This is explained by the fact that meta-subject competencies are the basis for further professional training of schoolchildren at the level of higher and secondary specialized education. That is why the formation of meta-subject competencies at school focuses on the professional activities of students.

Similarly, with meta-subject competencies, average indicators are observed in the assimilation of labour skills. This trend is due to the fact that when mastering new material, emphasis is placed on the actual application of the acquired knowledge in professional activities, which is designed to increase the motivation of students but is not the goal of preparing children for professional activities or part of career guidance.

It should be noted that the individualization of education is not so focused on taking into account the professional preferences of students. This is due to the fact that most schoolchildren do not yet have a clear-cut judgment on professional preferences. The second reason for the weak orientation of the individualization of education towards a professional orientation is that in most cases, individualization is understood as taking into account individual characteristics associated with current interests and not with interests aimed at the professional sphere, which students will face only in a few years and which are not such a strong motivation today.

Another weakly expressed unit in the modern school among students is orientation in the professional sphere. This is due to the fact that most students do not yet think about their future professional activities. Also, these indicators could be affected by the fact that the peculiarities of the professional sphere are most often introduced in institutions that provide vocational training and not general education institutions.

Acknowledgements

RFBR funded the reported study according to the research project 20-313-90042, "Formation of readiness of future technology teachers for advanced professional students' training".

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DOI: 10.24234/wisdom.v2i1.763
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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON HUMAN RESOURCES MANAGEMENT STRATEGY: OPPORTUNITIES FOR THE HUMANISATION AND RISKS

Abstract

The article discusses the growing role of artificial intelligence in human resources management strategy. The results of research and practical experience confirm the possibility of using artificial intelligence to humanise human resource management (reducing bias in the selection of personnel, mastering employees' experience, personalising training, analysing the emotional state of employees, and managing their wellbeing) are generalised. Highlighted are the risks of dehumanisation of personnel management when introducing artificial intelligence, which can be caused by both new threats and the strengthening of existing problems in this area.

Keywords: artificial intelligence, digital humanism, experience management, engagement, wellbeing, discrimination, HR management strategy.

Introduction

There is no doubt that the development of intelligent automation (robotics, artificial intelligence) will revolutionise all areas of activity. According to data presented in a global Deloitte study, 59% of organisations believe that redesigning workplaces to integrate artificial intelligence (AI) technologies is essential or very important to their success in the coming years (Deloitte, 2020). Digital platforms and tools have already significantly changed working models with human resources.

Large companies and even midsize organisations with employees spread across geographic regions are investing in cloud, mobile and AI to offer integrated human resource management services in real-time and seamlessly. At the same time, there is still a lack of a comprehensive understanding of the consequences of using these technologies in human resource management at the organisational (firm) and individual (employees) levels.

The perspectives and problems of implementing digital technologies and AI in the management of companies and human resources strategy are, in most cases, considered in the context of increasing operational efficiency, income and productivity, obsolescence of jobs and replacement of employees, and the need to master new skills in connection with changing professional requirements (Arslan, Ruman, Naughton, & Tarba, 2021; Coupe, 2019; Ivanov & Webster, 2019; Malik, Budhwar, & Srikanth, 2020).

Meanwhile, no less significant are the possibilities of using AI in the context of transhumanism to complement and expand human capabilities in areas such as value and talent management, human resource development, mastering of employees' experience, motivation and expansion of work opportunities, creation of a more positive work environment (Diéguez, 2017;

Wagner, 2020; Wagner, 2021).

The AI revolution makes HR processes less mechanical and more human-centred. However, AI technologies develop according to their laws while giving rise to new problems, hidden risks, and threats, both of a technical and socio-ethical nature (Cortina y Serra, 2016; Martin, 2019). In various professional fields, ethical dilemmas can arise in an AI application, as moral values and principles join the game, and even human rights may be violated (Coeckelbergh, 2021; Fernández-Fernández, 2021; Mittelstadt, Allo, Taddeo, Wachter, & Floridi, 2016).

Artificial Intelligence as a Factor in Human-Centered Management

Human resource management is getting on a new level: from information technology-based management (eHRM) to management driven by intelligent automation.

In a few organisations, the first generation of AI is a common occurrence (using AI only for specific tasks). It is predicted that shortly, the AI of the first generation will turn into the so-called artificial general intelligence, which will be able to independently reason, plan and solve problems for tasks for which they were not even designed (Yampolskiy, 2015).

In human resource management, AI has a wide range of applications. Gartner identifies three common use cases for AI in human resource management: attracting and retaining talent; analysis of surveys (analytics of the "voice of the employee"); HR virtual assistants (Gartner, 2019). According to a global study by Mercer company (Mercer, 2019), the main areas of application of AI in human resource management include identification of the best candidates based on publicly available data; provision of training recommendations and training for employees; checking and evaluation of candidates for employment, including using chatbots.

Companies planning to invest in AI are targeting the following areas: use of chatbots for employee self-service (for example, to change privileges or provide vacations), identification of employees planning to leave, planning of job offers or career advancements for employees, assistance in the performance management process, benchmarking to create or improve a system of benefits and compensation, etc. (Nica, Miklencicova, & Kicova, 2019; Rodney, Valaskova, & Durana, 2019).

Summarisation of the research results allows us to conclude that the expansion of the use of AI can contribute to the humanisation of both HR strategy and technologies (by introducing electronic recruitment, e-learning, or e-competency management), as well as to the activities of HR specialists. Among other things, the multidimensionality process of humanisation of modern management occurs significantly when it impacts various aspects of the organisation's activities. The main thing, in this case, will remain the creation of more comfortable conditions for a person and deduction of his needs and requirements to the first plan.

In the economy of talents, an organisation's future depends on attracting and retaining outstanding people. Continuously improving through new data and machine learning, AI can identify talents with characteristics similar to existing successful employees, actively invite them to apply, collect and summarise demographic data and work history from candidate interviews and, on this basis, predict how well they will be able to do their job in the company.

AI technology is expected to help identify potential partialities in their hiring patterns and avoid discrimination based on gender, age, race, and ethnicity, reducing human bias and providing data-driven objective representation.

AI can also be used to improve staff adaptation and experience management. An increase in the popularity of HR mentoring through the Organization Guidance System (OGS) is predicted. Such systems will determine the desired investment outcomes, the roadmap for achieving those outcomes, and the requirements for sustainable development. It is worth mentioning that AI technology allows new hires to receive support

anytime and anywhere via chatbots and remote support apps and empowers employees to adapt at their own pace.

AI helps optimise motivation, engagement, and participation strategies by creating a transparent culture of collaboration and provides personalised on-the-job training to employees throughout their tenure with the minimum staff effort. AI can be used to update e-learning with specialised game programs and workplace simulated learning tailored to specific needs, contributing to employee retention.

Implementing AI for competency mapping, succession planning, and career development enables data-driven solutions that lead to long-term employee engagement. Some AI programs can measure employee KPIs to determine who should be promoted, thereby stimulating internal staff mobility.

AI-integrated systems can also help train employees in an environment of continuous change and generate individual programs and learning strategies based on activities and competency analysis.

Today, rather than relying on outdated employee engagement methods, companies can use an employee-generated database that reflects their emotional state (for example, internal chat platforms such as Jabber, Yammer, and Chatter). While it is impossible to distinguish all the reasons why someone might leave work, it is pretty realistic to monitor indicators such as productivity and job satisfaction. Based on their combination with new analytical approaches such as sentiment analysis, it is possible to obtain a detailed matrix of employee mind states and predict layoffs. AI integration also allows for exploring the common traits of laid-off employees, highlighting talents at risk company can proactively solve potential issues.

In addition, research shows that AI tools are better at analysing employee surveys than people. With tools such as Oracle Fusion HCM, HR managers can access the personalised information of their employees' concerns and use it to prevent negative moods or challenging situations before they escalate.

AI can help maintain a consistent tone of content by personalising messages sent to each individual recipient, which means it can effectively communicate a message to a range of demographic groups, both inside and outside the company. Real-time answers to frequently asked questions via chatbots, available to all employees, who can enter questions and receive automatic responses quickly, provide additional convenience for employees. Smart objects and the Internet of Things (IoT) can facilitate more effective coordination and collaboration.

At the core of any AI system, there is massive amounts of data that can be applied to any number of practical human resource management benefits, from employee satisfaction to decreasing workloads and increasing revenue (currently, only 29% of employees consider that HR helps them perform better) (Mercer, 2019). By freeing employees from labour-intensive and intellectually unattractive tasks, AI can give them time to learn new skills or develop the existing ones, resulting in more experienced and valuable employees.

AI can be used to analyse time off requests and build smarter, personalised work schedules so that employees can better control their work-life balance.

In a crowded job market, AI can be used to relieve pressure on hiring managers by helping to select candidates before a person is even involved. Expanding the practice of communicating with customers using automated systems will allow the staff to focus on more complex issues.

According to a study by LinkedIn, 67% of hiring managers and recruiting agencies said AI saves them time when looking for candidates for jobs. AI can make the hiring process more convenient for the hiring organisation and its job seekers (Konovalova & Mitrofanova, 2021). For example, artificial intelligence technology can streamline application processes by creating more user-friendly forms that a candidate for a job is more likely to fill, effectively reducing the

number of abandoned applications.

At the same time, the employees' assessments of the impact of the spread of intelligent automation on the sphere of human resource management are controversial Demir, McNeese, & Cooke, 2020; Diéguez, 2021; Gillath et al., 2021). For example, according to a study presented by KPMG, most business leaders believe that AI will create more jobs than it eliminates (KPMG, 2019). However, the downsizing and restructuring in many companies due to these changes means that the traditional psychological and social contract offered job security in exchange for organisational loyalty has changed (Petriglieri, Ashford, & Wrzesniewski, 2019).

The ethics of AI will be fundamentally different from the ethical aspects of the application of non-cognitive technologies since the specific behaviour of the AI system cannot be predicted and checking the security of the AI system requires checking what the system is trying to do (instead of testing security based on a particular behaviour in specific work contexts) (Baker-Brunnbauer, 2021; Bostrom & Yudkowsky, 2014; Kaplan & Haenlein, 2020). A difficult question arises: how to develop and formalise ethical principles for AI. Some researchers have dealt with the issue of their formalisation (for example, Muehlhauser & Helm, 2012; Yudkowsky, 2011).

In these studies, the critical question was what ways could be found to overcome the contradictions between the clarity of AI computational algorithms and the ambiguous, inconsistent, subjective diversity of human values. For example, sometimes, some researchers propose to base AI systems on morality, but they do not accurately explain how an AI agent should choose actions that are consistently based on it (Haidt & Kesebir, 2010).

The risk is increasing due to the lack of transparency in AI algorithms used in making life-critical decisions, such as recruiting employees in a company (Diéguez, 2021). Some of the threats are related to the fact that intelligent automation expands the possibilities of using Big Data for making decisions in the field of human resource management, which, in its turn, is fraught with the risk of building false relationships, distorting causal relationships and the emergence of new forms of discrimination on this basis (for example, when making hiring decisions, assessing the potential of employees, etc.) (Andersen, 2017; Bhave, Teo, & Dalal, 2020; Levenson & Fink, 2017; Wenzel & Van Quaquebeke, 2017).

Discussion

There are two interrelated problems with using AI from an ethical point of view. The first is the coordination of AI work with the existing value attitudes in society. The second is the formalisation of these value attitudes. Most AI programs focus on neutral data analysis. However, this is often impossible for several tasks related to assessing human activities, as it is contrary to legislation or unethical. The management sphere is characterised by the problem of the formalisation of human decisions. People are not entirely rational agents, and sometimes emotional reactions prevent us from acting rationally. Not all human decisions are flawless when ethically judged.

A significant number of ethical issues are caused by the risks of discriminatory practices of algorithms that reproduce or even intensify hostile moods in society, and existing prejudices can be transferred to AI systems. The primary attention should be paid to the problem of discrimination, both individual and collective, to lay the foundation for measuring discriminatory bias, tools for its identification and possible correction. For example, the European Parliament Regulation 2016/679 of April 27, 2016 (Regulation (EU), 2016) strictly regulates the collection of personal data (religious, political, sexual, ethnic, etc.) and prohibits those who are responsible for algorithmic decisions to take them into account in automated processing.

Special attention should also be paid to vulnerable groups such as persons with disabilities and others who have historically been disadvantaged, at isolation risk, in asymmetric power or

information situations (particularly between employers and employees).

There is also a whole class of ethical problems associated with the ethics of predictability. Many AI programs are written to solve predictive problems. Based on already known information about a person, AI can model the values and behaviour of people observed over a sufficiently long period of time and predict the results of choosing different options better than a person. Nevertheless, the consequences of this interaction between AI and human beings present an ethical challenge.

Notably, various aptitude testing or professional and career portfolio planning programs face the problem of the readiness of the program users to familiarise themselves with the result. Subsequently, various types of subjective discomfort associated with the "programming" of choice, the effects of reducing motivation, etc., may arise. When using AI in hiring models, experts ask themselves whether AI will be able to identify candidates with "unusual talent" who do not fit the standard model but can bring new skills and experience (Konovalova & Mitrofanova, 2021; Tikhonov, 2020).

The proactive approach (assessing a person based on a forecast of what he will do) is common to the entire spectrum of Big Data applications. A candidate or employee is evaluated using much information about people and their behaviour, which does not have any common tasks with a natural work environment.

Before the full range of their actual and potential uses, the data collected from various sources is determined, and algorithms and analytics are mobilised to understand the past sequence of events and predict and intervene before actions, events, and processes. Indirect appraisal leads to erroneous rejections (the employer rejects potentially good candidates) and erroneous approvals (the unsuitable people are hired for improper reasons). Some of the data used to make decisions about employees are not objective but result from a certain operationalisation. Meanwhile, social networks and other large-scale digital platforms are critical tools for disseminating false information.

AI-powered data management can enhance micromanagement and expand the capabilities of behavioural nudge based on big data processing.

Another threat to the dehumanisation of human resource management stems from the fact that technological developments have far outstripped the existing legal and ethical frameworks that govern the privacy and inviolability of private life. With the increase and detailing of the database, it becomes increasingly easier to identify an individual with their help.

Intelligent automation allows for to enhancement of tracking practices. More and more companies use employee performance monitoring systems to control working hours, evaluate and control work efficiency, identify disloyal employees and fraudulent schemes within the company, search for possible information leaks and protection against insiders, investigate information security incidents, and identify risk groups.

Employees (already working in the company and the potential ones) are often not even aware that some aspects of their life have been converted into data, do not fully realise the multiplicity of algorithms that collect and store data, the possibility of their further use, conclusions, and forecasts that data may allow, and procedures for ensuring informed consent for the use of data are not always achievable.

The security and protection of employee personal data are also a considerable concern, as the misuse of personal information and posting information on websites can potentially harm employees' welfare.

There is a risk of a growing lack of direct contact between different stakeholders. On the one hand, employees will be able to be much less dependent on the subjective attitude of the management and its unfavourable behaviour. On the other hand, there is a potential risk of the leaders receiving minor criticism and attitude towards their decisions and actions.

Teamwork of employees and AI increases the risk of "technological anxiety" (the degree to

which an individual feels frustrated and anxious when using a particular technology). Given the complexity of AI-based processes compared to relatively old technologies (personal computers or organisational IT systems), it is logical to expect that the level of "technological anxiety" may be higher, which in turn will affect trust towards AI as a team member and acceptance of a new reality in the working life. Lack of trust amid fear of job loss is one of the most significant barriers to taking full advantage of AI.

Conclusion

The development of artificial intelligence can change the fundamental nature of work and pose a severe threat to employment. However, it can also create significant opportunities for cooperation and human-machine integration.

As digitalisation expands, AI is trusted with more complex and sophisticated tasks such as managing employee wellbeing and mental health (BCG, 2020). The younger generation is increasingly embracing open discussion of mental health and is willing to make some changes in the workplace. As AI is increasingly becoming the starting point for these kinds of conversations, AI's discretion about personal matters gives employees more comfort when initiating conversations that the employee finds awkward.

AI can also mobilise additional help from the needed people if required. A recent global survey of HR leaders by Oracle and Future Workplace found that 64% of employees trust AI chatbots more than their managers.

Thus, AI can bring new opportunities to humanise HR and the workforce by helping HR professionals identify and retain high-potential employees, improve the talent acquisition process, reduce hiring bias, and increase productivity.

The risks of dehumanisation in the implementation of AI can be caused by both new threats and the intensification of problems that currently exist in human resource management, in particular, a decrease in the level of employee engagement and professional burnout. At the same time, AI is unlikely to pose a fundamental threat to the uniquely human aspects of modern management, such as social interaction and the emotional intelligence of managers and employees.

However, according to KPMG, only 36% of HR leaders have started adopting AI and are sure they have the necessary skills and resources to use it. According to Deloitte (2020), only 12% of respondents said their organisations primarily use AI to replace staff, while 60% say their organisation uses AI to help their employees (primarily to address alignment issues and improve productivity, not the new ideas). In addition, 17% of respondents reported that they are willing to manage human resources by working side by side with people, robots, and AI.

At the same time, using AI in the field of human resource management, there is a threat of the possibility of multiple cases of abuse, and even new cybercrimes, loss of privacy, unfair use of algorithms while making decisions, or less obviously contribute to concealing, giving legitimacy, or perpetuating unfair prejudices and unacceptable discrimination processes. Nevertheless, while AI can have blind spots and unintended flaws, each glitch brings a new lesson that can be applied in the future. It is necessary to rethink the strategy for introducing artificial intelligence: from the parallel control of AI and people to integrating people and AI into "super teams".

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DOI: 10.24234/wisdom.v2i1.767
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SOCIAL DISCRIMINATION IN THE EPOCH OF ARTIFICIAL INTELLIGENCE

Abstract

The article aims to study the genesis of understanding the causes of social discrimination from its traditional manifestations to the era of digitalization and artificial intelligence.

The methodological basis of this scientific article was formed by the approaches, methods and principles of scientific research. The authors independently check existing theories and previous results of practical research in the field of social discrimination, as well as discover new modern forms of its manifestation generated by the action of artificial intelligence and subject them to open discussion, offering their vision of solving the problem of neutralizing the risks spread by the use of artificial intelligence technologies concerning certain social groups of people. In this article, the authors continue their case studies in exploring the ethics of artificial intelligence and the benefits and risks of its ubiquity and use.

Keywords: artificial intelligence, social discrimination, digitalization, digital literacy, artificial intelligence bias.

Introduction

Recently, employers or scientists and each person are increasingly feeling the effect of artificial intelligence technologies in various areas of life.

The primary purpose of this article is to continue studying the issue of how much the use of artificial intelligence and algorithmic solutions aggravates the problem of social discrimination, which is inevitably associated with the operation of artificial intelligence. By artificial intelligence (AI), we mean the ability of a computer to learn, make decisions and perform actions inherent in human intelligence (Leonov, Kashtanova, & Lobacheva, 2021). Algorithmic decisions are programmes according to which AI operates.

AI is penetrating deeper and deeper into business and the world as a whole, influencing vital decisions, such as employment, obtaining loans or affordable healthcare. This increases the risk of social discrimination from AI. Managing and mitigating this risk begins with understanding how such discrimination can occur and why it can be difficult to detect.

In the short term, the goal of preserving the beneficial effects of AI on society motivates research in many areas, from economics and law to technical topics, such as verification, validity, safety and control (Suen, Hung, & Lin, 2020). Insignificant fraud or implicit injustice in cyberspace is still a completely insignificant (to some extent even a side) effect in comparison with the global advantage that the AI system gives today - it learns to do what a human wants from it, adopting human's traditional, more often routine, functions.

In the long term, the main question is what will happen if the new powerful AI becomes much better and more efficient than people in solving all their problems? However, many experts are already expressing concern about this development of events and declare that if you do not learn how to coordinate the actions of AI,

then human power on earth will end. We believe that the existing research, including ours, will help form an understanding of the importance of this issue and draw the close attention of all interested parties to it.

Theoretical Basis

The issue of discrimination by AI is closely intertwined with the ongoing debate in the academic community about AI's ethics. For example, there is an opinion that AI algorithms undermine the social safety system, criminalize the poor, enhance discrimination and threaten our national values (Vinichenko, Narrainen, Melnichuk, & Chalid, 2020). According to other authors, if our entire society does not comply with ethics and requires fairness in information exchange and data transfer, discrimination caused by AI will continue to grow (Symitsi, Stamolampros, Daskalakis, & Korfiatis, 2020). In his scientific review (Mittelstadt, Allo, Taddeo, Wachter, & Floridi, 2016), the author agrees that most of the relevant literature is devoted to explaining how discrimination is the result of today's discrimination biased evidence and decision making. We can agree with the view that the current causes of AI-driven discrimination come from the same conceptual problems that have characterized discrimination since its very formal interpretation in law and ethics (Sinhaa, Singhb, Guptaa, & Singha, 2020).

The concept of discrimination is widely used in everyday speech and many national laws and supranational codes. It is difficult enough to interpret the essence of discrimination in such a way as to consider all, or at least most of the meanings of this concept. In order to express n the best way the meaning of discrimination that can arise (and is already arising) with the advent and spread of AI, let us turn to its manifestations that existed in the epoch before the arrival of AI.

One of the brightest examples of social discrimination is the division of the population into castes in India. Furthermore, one of the reasons why the caste system was able to exist was functional interdependence in Hindu society, which allows a wide range of differentiation without disturbing the social structure. The religious foundation embedded in the caste system made it easier for the higher castes to perpetuate differences and enjoy the growing privileges of suppressing the lower castes.

In medicine, only in the late 1950s social discrimination became an important research topic. Until that time, people with deviations from socially established norms were considered sick and having pathology, and society excluded opportunities for such people to receive education, normal life and recognition. In many parts of the world, people with disabilities were barred from participating in public affairs because of physical barriers to their mobility; and social discrimination against them at least made it difficult for them to study and work.

Symptoms of negative behaviour are common concerning people who are overweight or have some other physical peculiarities that deviate from the norms in a particular society.

The New Testament mentions that leprosy is also considered a determining factor in social discrimination; the sick person can only be cured with the help of a spiritual miracle, and even today, the isolation of sick people continues to be carried out as the most effective strategy to combat the spread of disease during a pandemic. In addition, the most famous manifestations of discrimination are racial discrimination, class discrimination and gender discrimination (Popkova & Gulzat, 2020).

Thus, social attitudes, both cultural and interpersonal, clearly affect the behaviour of the majority of people due to traditions, ideology, a system of values and beliefs, as well as the standard of a person cultivated in society in terms of appearance, manners, religious beliefs, activities and are the cause of the emergence of social discrimination.

Research Problem

Social discrimination is closely related to be-

longing to a group. However, as you know, no type of group membership has the right to it. The legal provision on discrimination is reflected in Article 26 of the International Covenant on Civil and Political Rights.

"All people are equal before the law and have the right for equal protection of the law without any form of discrimination. A fair law prohibits any discrimination and guarantees equality for all, and the law must provide effective protection against discrimination on any ground such as race, colour, sex, language, religion, political or other opinions, national or social origin, property, birth or another status" (International Covenant on Civil and Political Rights, 1966).

It would seem that all issues related to discrimination were studied and acquired legal status. However, there is a new manifestation of discrimination at the moment, which is very difficult to predict and foresee. This new wave of discrimination is associated with the spread and penetration of AI into all areas of life. Indeed, the truth is that AI is starting a technological revolution, and while it is just going to take over the world, there is a more pressing problem that we already face, and it is AI bias. What is it?

AI bias is a significant bias in the data used to create AI algorithms, ultimately leading to discrimination and other social consequences (Courtland, 2018). Let us take a simple example. Imagine that we want to create an algorithm that decides whether an applicant will be admitted to a university or not, and one of our input data will be the applicant's geographic location. Hypothetically if a person's location is strongly correlated with ethnicity, then our algorithm would indirectly give preference to specific ethnic groups over others. This is an example of bias in AI.

Main Results

Here are real examples of when AI algorithms showed bias and discrimination against others.

In October 2019, researchers found out that an algorithm used for more than 200 million people in US hospitals to predict which patients are likely to need additional care gave preference to white patients compared to black patients. Although the race itself was not a variable inherent in this algorithm, another variable strongly correlated with race was the history of health care costs. The rationale was that cost summarizes the amount of health care needs a particular person has. For various reasons, black patients, on average, had lower health care costs than white patients with the same illnesses.

Another example is Amazon, one of the most significant technological giants globally. Thus, it is no surprise that they actively use machine learning and AI. In 2015 Amazon realized that its algorithm for hiring employees was biased towards women. The reason for this was that the algorithm was based on the number of resumes submitted during the last ten years, and as most of the applicants were men, the AI was trained to prioritize men over women.

Digitalization, which is "served" to society under the slogan of "convenience", is civic digitalization. Furthermore, the spread of AI within society brings the complete destruction of privacy – an opportunity for social discrimination. The most striking example of social discrimination in the epoch of AI is the threat of introducing a system of social ratings. The social rating system is a system of assessment based on the socio-political behaviour of individuals, organizations and other institutions to determine their "social reputation", on the basis of which the policy of incentives and sanctions is implemented, according to the words of I. Ashmanov, the member of the Presidential Council for the Development of Civil Society and Human Rights and the entrepreneur in the field of IT and AI, in 2 hours in the Darknet, as an experiment, he acquired complete information about a person, including his bank accounts, assets, passport data, education, place of residence and work. The most exciting thing is that along with these data, "movement around the city during the day" was sold - the video path of a person from the cameras of the "Safe City" system with the transfer of images from the camera to camera. All this in-

formation cost less than 10 thousand rubles (Ashmanov, 2020).

In addition, today, we have given much of our decision making to complex machines. Automatic right of the system for decision-making, ranking algorithms and risk prediction models monitor and determine which families receive the necessary subsidies, who is shortlisted for employment, and who may be most inclined to cheating. There are cases when the system denied access, for example, to transport or shopping centres to people with a particular type of appearance because the security system based on AI determined this appears to be potentially dangerous (for example, similarity to the image of a terrorist).

The Report to the Council of Europe Anti-Discrimination Department from 2018 states that the anti-discrimination law has "several weaknesses in AI (Ross & Konyavsky, 2020).

Let us try to find out in what areas of human resources management the used decision-making algorithms and other types of AI create discriminatory effects or can create them in the foreseeable future.

Decision making based on artificial intelligence can lead to discrimination in several ways. One is to define a "target variable" and "class labels". In human resources management, the situation of choice most often arises, from the selection of personnel for work to the issues of promotion and dismissal. For example, a company needs an AI system to sort job applications in order to find good employees. But how should a "good" employee be defined? In other words, what should be the "good employee class labels"? Is a good employee the one who sells more products than all others? Or someone who is never late for work? Nevertheless, the candidate for the position, living further from the company's location, will be determined as potentially coming late.

Also, research on the applicability of AI in the field of personnel management leads to unexpected results (Chang, 2020). Interestingly, some managers are reluctant to agree with AI as they are afraid that AI can discriminate against their job roles and importance as leaders, reducing their influence in the workplace. These managers tend to interpret AI as a threat to their careers and evaluate AI from a more subjective and negative point of view.

How does bias creep into a dispassionate set of algorithms that deal with complex, pure data? The answer to this question is quite simple.

AI is only as good as the data that powers it. Its quality depends on how well its creators have programmed it to think, make decisions, learn and act. As a result, AI may inherit or even reinforce the biases of its creators, who are often unaware of their own biases, or AI may use biased data.

In this regard, the logical question is who is the creator of AI, and, in fact, who makes the decisions? Perhaps few people notice it, but in our country and the world as a whole, a new digital class is emerging – concerning digital means of production. This class includes those who have free access to the personal data of citizens: for example, employees of the Multifunctional Centre (MFC) or the registry office, who have access to large databases of personal data of citizens, followed by programmers who write programmes to create databases, then system administrators who organize their work, the IT directors (CIO in the sphere of IT) and the officials who manage it all. However, the main difficulty arises because the official who exercises this management does not have enough digital competencies or lacks them.

Programmers and system administrators have an absolute sense of freedom, irresponsibility and impunity. They did not take the oath, perhaps; they signed some non-disclosure obligations, but the responsibility is only administrative, not criminal. An official makes his managerial decision based on the data provided to him by his representative. He cannot influence or change this data and cannot check them because of his digital illiteracy.

Making the average portrait of the modern creator of algorithms for AI, we saw the follow-

ing picture. According to I, these are people, mainly with a technical education, aged 20 to 30 years old, technocrats without notable convictions. Ashmanov, the new generation of programmers, belongs to the so-called "digital barbarians", who know only the digital sphere, and outside of it, they know almost nothing - neither about history, nor about culture, nor ethics. They are simply not interested. All types of ethics for them are concentrated in the algorithmization of life.

If they do not have ethical ideas, then from their point of view, distributing information about another person is not theft or a crime. AI systems make decisions of an ethical nature because decisions about people belong to the sphere of ethics, and this ethics is downloaded there by programmers who do not possess it. Even if the authors of the programmes claim that their algorithms are based on neutrality and inclusion, they develop them on behalf of someone else, and there is a great danger that this neutrality and inclusion are dictated by the persons who are the programme's customers. AI has the ability to form the decisions of individuals even without their knowledge, giving those who control algorithmic decisions full implicit power. In addition to issues of general cultural knowledge, the creators of algorithms and collectors of data used to test and launch them will also not be able to foresee all variants of the development of an event. A simple example is a car driven by a robot without a driver. What if the robot's creators forget to test its image recognition at night in heavy fog in the countryside?

The results of using AI technologies already provide an opportunity for all interested parties (corporations-monopolists, government, etc.) to collect, store and analyze a vast amount of data. This information can be used with complete impunity to increase efficiency and profit. At the same time, the possible consequences of technological breakthroughs and government innovations for certain groups of the population will remain unaccounted for - intentionally or unintentionally – we will never know. At the same time, an individual person, a living person, having will, emotions, desires and needs, will generally remain on the sidelines from what is happening. Thus, a step is taken towards a society where there is no place for the individual, where the AI itself writes the algorithms, and robots make the decisions. They, of course, will strive to make decisions that correspond to the preferences of the majority, but the flip side of these algorithmic decisions is the inability to go beyond the framework determined by this decision. This is especially dangerous for the younger generation, for whom the acquisition of experience to act independently will be practically inaccessible according to their own opinion.

The creators of algorithms for AI simply cannot consider every piece of data that represents the amplitude of the personality and the needs, desires, and hopes of this person. Who is collecting data today? Do the people who reflect the data points even know what the data is used for, or did they just agree with the terms of service provided because they had no real choice? Who makes money from this data? How can anyone know how his / her data is being processed and for what purposes to justify those purposes? There is no transparency here, and data use monitoring is a farce. All this is hidden from outsiders. "Who owns the information, he owns the world" - this phrase of Rothschild after the famous scam with the purchase of securities is quite relevant today. The economic system we live today has such a nature that data will be used to enrich and/or protect a group of certain people rather than an individual person.

In the future, based on algorithms created by AI, there may be a gap between people who understand digital technologies (mainly the most prosperous, who are mostly in demand in the created digital ecosystem) and those who do not have digital competence or, due to own various reasons, do not want to master it. The algorithmic solutions themselves will be able to instantly provoke disagreements of any kind between different groups of the population using the media, as AI knows almost everything about the prefer-

ences not only of the groups classified according to some criterion but also according to the preferred method of obtaining information (television, Internet, social networks, etc.).

Furthermore, traditionally discrimination caused by AI is associated with the threat of mass unemployment and its consequences. Indeed, if an algorithm can efficiently represent a task, a machine can easily perform it.

Discussion

So, let us formulate the main scientific results that we obtained when determining the possibility of discrimination in the new digital age.

We identified explicit and latent problems of the consequences of the distribution of biased AI. We call social discrimination caused by the limitations of the creators of one or another AI technology an explicit or main problem. Among the so-called latent or related problems, we highlight the following: algorithmic lack of transparency, cybersecurity vulnerabilities caused by the lack of protection against threats from new fraudsters in the network, unfairness and bias, lack of competition, adverse consequences for employees, breaches of privacy and data protection and, as a result, possible harm to a person's reputation, irresponsibility of developers and users for damage and lack of reporting on data use.

We identified possible threats of discrimination due to the distribution of AI and presented their essential characteristics (Table 1).

Table 1.

Potential AI Discrimination Threats and the Manifestation of These Threats

Potential discrimination threat as a result of AI distribution	Manifestation of threat
Data, algorithms and predictive modelling domination over human judgment and emotion	• the impossibility of taking into account the broadest characteristics and peculiarities of each personality; • AI algorithms developed for the company seek to maximize profits rather than maximize the public good; • persons who have access to the management of AI and databases have the opportunity to manipulate people; • disappearance of personal confidentiality; • lack of control and transparency of actions; • criticism of AI algorithms will be belittled and suppressed, and rejected due to the prevalence of digital logic over the process; • people lose their free will due to the need to follow the algorithm
Algorithmically organized AI systems contain bias	• AI algorithms are developed using data selected by certain privileged participants – in the interests of consumers like themselves; • programmers who create algorithms for AI are an unrepresentative subgroup of the population; • AI values efficiency more than fairness; • Producers of AI algorithms (corporations and governments) tune the algorithms in such a way as to make choices that are favourable for themselves
AI deepens differences	• users who are "quarantined" in various ideological areas may lose the human ability to empathize; • Non-active users of AI will be in an unfavourable position; • anything that the algorithms consider risky or less profitable will have negative consequences;

	• massive increase of productivity gains on account of automation will increase inequality between workers and capital owners
The rise in unemployment as a result of AI distribution	• AI is cleverer, more efficient, more productive and cheaper than an employee for whom it is necessary to create working conditions and to ensure that his/her rights are respected; • violation of the economic model of the market, according to which capital is exchanged for labour to ensure economic growth (if the labour force is no longer part of this model)

We will likely need additional regulation to protect justice and human rights in the field of AI. However, regulating AI as a whole is not an unequivocally correct approach as the use of AI systems is too varied for a single set of rules. You should also take into account national, sectoral, geographical and other peculiarities when drawing up such rules. More research is needed, and more discussion and debate are needed.

We believe that another result of our research is the development of recommendations for minimizing and avoiding bias and discrimination as a result of large-scale civil digitalization and the distribution of AI.

One of the main reasons that can create AI bias and exacerbate differences is the lack of digital literacy and digital competencies among a large number of the population, not to mention the lack of knowledge about the operation of the AI decision-making mechanism and the development of algorithms based on big data. Therefore, it is necessary to develop digital competencies massively and from a very early age, introducing them into the compulsory public education curriculum to make the general public understand how AI algorithms function.

The next step is to ensure transparency of information on how data is collected and used and to develop public understanding of who is responsible for their use and non-proliferation. After all, it is no secret that despite the massive growth in cybercrime, the facts of criminal prosecution and punishment for them are practically unknown. According to the Central Bank, in 2020, the fraud "in the digital volume of transactions without the consent of the client" increased by 38%, and the amount of money stolen increased by 52% over the year and amounted to 10 billion rubles (Central Bank of Russia).

People today are very interested, for example, in the information about where and under what conditions food or clothes are produced. In the same way, we should ask ourselves how our personal data is collected, our opinions in any polls and how, and most importantly, who makes decisions subsequently. What is the sequence of transmission of this information? Are assumptions allowed, what criteria were used to select the information and data, and how relevant they are. Which parties are interested in making decisions, and how influential these parties are. In other words, at the moment, only very few people understand and, most importantly, are aware of the effect of those AI technologies capable of creating and changing the existing reality. However, as we have already noted, those who create and develop algorithms are not responsible for society. It is necessary to overcome this circumstance in the near future and develop an approach that will aim to oblige AI developers to consider human rights at every stage of development categorically. In turn, this step will act as a guarantee that the algorithms implemented in society will eliminate, not exacerbate, social inequality.

Control mechanisms should include stricter data access protocols. They should also include a mandatory list of responsible persons indicating their level of responsibility and the conclusion of nondisclosure agreements. It is necessary to provide the possibility of remote monitoring of repeated access to the information by this or that responsible person, system failure functions, setting access times, and the impossibility of selling information to third parties without the consent

of the regulatory authorities. By the way, many legislators and regulators are now claiming that the vast server farms of Google and Facebook need to become more transparent and understandable. These monopolists have the size, scale and, in some ways, the importance of nuclear power plants and refineries, but with little or no regulatory oversight. This situation must change.

Conclusion

Thus, we can summarize all the above-mentioned and formulate the following requirement to avoid digital bias - algorithmic transparency should be established as a fundamental requirement for all AI-based decision-making.

One more nuance. Algorithmic accountability, in our opinion, is a large-scale project that requires the involvement of various specialists and public representatives. Acknowledging bias is often a matter of perspective, and people with different racial or other identity and the economic background will notice different biases. Building diverse teams will help to reduce the potential risk of AI bias. The algorithm team should consist of data scientists and business leaders, government officials and professionals with various backgrounds and experience, such as lawyers, accountants, sociologists and ethicists, journalists and religious leaders. Everyone will have his/her perspective on the threat of bias and how to help mitigate it.

The assessment of predictive models based on AI decisions must necessarily include an assessment from social groups. As we learn from the examples above, we should try our best to ensure that such indicators as factual accuracy and false-positive results are consistent when comparing different social groups, be it gender, ethnicity or age.

Furthermore, it is necessary to consistently regulate the issues of using AI at the legislative level. Moreover, here again, all the above-mentioned requirements should be provided – persons should make such decisions with a high level of digital literacy, developers' teams should include representatives of various professions, and the decision-making process should be based on openness and accessibility principles and transparency. Leaders at the highest level must understand the need for responsible AI – that is, AI which is ethical, reliable, safe, well-managed, compatible and explainable. Social discrimination caused by the action of AI is not inevitable; everything depends on us, on how we, the nation and civilized society, can put an end to it.

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DOI: 10.24234/wisdom.v2i1.791
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CONVERGENT TECHNOLOGIES IN THE SYSTEM OF MODERNISATION OF ECONOMY: CONCEPTUAL-METHODOLOGICAL COMPARISONS

Abstract

The article discusses methodological issues related to the appearance and use of convergent technologies that determine the modernisation of the economy. The problems were examined from the point of view of conceptual approaches to the main economic paradigms. The hypothesis has been nominated, according to which convergent technologies form economics, business behaviour, management, production and consumer culture models and agendas. The article was based on the provision under which convergent technologies deepen and strengthen the leading positions of developed countries and major transnational companies through the formation and networking mechanisms of added value chains.

Keywords: convergent technologies, modernization, technological gap, innovative rent, value chain, inclusive growth, political rent.

Introduction

In recent decades, in the context of both national and global developments, the intensity of the impact of modern technology has reached unprecedented proportions. The technologies of the latest paradigm literally determine the main directions of the organisation of public life and the transformation of civilisation. Under their influence, radical changes are taking place in the fields of social thinking, behavioural patterns, political, economic, social and cultural. From this point of view, the main paradigms that determine the trends of global developments in the last 2 - 3 decades are mainly related to modern solutions in the field of information technology, biological technologies, in-depth development of nanotechnologies and programs for their mass application.

Among other areas, modern developments in the latest technologies have a decisive influence on the philosophical and methodological perceptions of economic thought and the behaviour of economic systems. Especially after the global financial and economic crisis of 2008-2009, it became clear that the system of positive concepts characterising the behaviour of economic systems, which is used to describe the mainstream theories and models, in the new conditions is not able to adequately reflect and describe their processes and offer solutions (Cameron & Siegmann, 2012).

Analysis of Literature and Theoretical Sources

From the 1990s onwards, theorists began to attribute the basis of the globally observed civilisational transition to the current-situational and long-term-strategic influences of a bunch of interconnected and fusion technologies of the latest technological cluster. As early as the 21st century, American theorists Mikhail Roco and William Bainbridge incorporated Nano-, Bio-, Info-Cogno technologies into this technological bundle- legal, moral, and social aspects of their development, as well as their long-term revolution-

ary effects, can have a profound effect on the progress of all human civilisation. According to M. Roco and U. Bainbridge (2002), "*with proper attention to ethical issues and societal needs, converging technologies could greatly improve human abilities, societal outcomes, the nation's productivity, and the quality of life. This is a broad, crosscutting, emerging and timely opportunity of interest to individuals, society and humanity in the long term*" (pp. 9-10). Thus, the creation and widespread dissemination of essential modern technologies can radically increase human society's intellectual and productive capacity, making it possible to dramatically increase labour productivity, based on it, the standard of living in society, and the quality of life.

In general, since the 1990s, when the world's leading economies faced the most serious challenges of the transition to basic technology, many theorists-researchers began to consider new opportunities for economic development and modernisation in the context of developing alternative concepts. Under these conditions, the traditional (mainstream) conceptual paradigms undergo significant revisions and changes. If the dominant directions of economic thought and methodology of the 20th century were related to the continuous debate and succession of theoretical directions of the Nordic (liberal or neo-liberal economic system) and Keynesian (centrally regulated economic system) paradigms, then, since the 1990s, there has been a shift in the dominance of the theoretical questions of the fundamental-qualitative shift of the institutional-evolutionary economic paradigms. Furthermore, this is connected with the growing process of reinterpreting and involving the crucial role of technologies and institutions in the issues of economic development.

The above is noted by one of the modern theorists of the evolutionary economic paradigm, Richard Nelson, who considers the decisive role of innovation in the development of capitalism over the last century and states that changes based on innovation are the principal capital of modern capital. He notes that "*change, largely driven by innovation, is a central characteristic of modern capitalist economies*" (Nelson et al., 2018, p. 3).

It should be noted that the views on the decisive role of technology, economic development and the interrelationships of institutions in the dynamic progress of the economy and society are not new. They are still the work of one of the founders of institutionalism, Thorstein Veblen, and have received a more complete and comprehensive justification in the works of Joseph Schumpeter. In particular, Weblen's works clearly define the components of business and industry, the relationship between which is determined by institutional factors. According to Veblen (1923), "*the technological system is an organisation of intelligence, a structure of intangibles and imponderables, like habits of thought. It resides in the habits of thoughts of the community. It comes to a head in the habits of thought of the technicians*" (p. 280). For his part, Josef Schumpeter bases economic development on the concept of "*creative destruction*" of the economic structure based on innovation, according to which the "*dynamic entrepreneur*" makes progressive changes by creating a new combination (innovation) and launching it on the market. Schumpeter writes about this in one of his works: "*The function of entrepreneurs is to reform or revolutionise the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganising an industry and so on*" (Shumpeter, 2003, p. 132). Schumpeter (1939) as "*new Combination*" means new products, new technologies, new production methods, new processes, etc. (p. 104).

It should be noted that the most systematic research on technological changes and innovations dates back to the 1960s. The central part of the studies of that period was carried out by A. Rogers, A. Mansfield, R. Nelson, S. Winter, and A. Rosenberg (Freeman, 1990, pp. 15-16). The the-

ory of "*technological gap*", in particular, according to J. Fagerberg, presupposes the imitation-assimilation of technological achievements by a technologically underdeveloped country – "*imitator*", by "*developed generators*" by developed countries. Therefore, the success of this process depends on the ability to maximise the limited resources and use them effectively in innovative projects (Fagerberg, 1987, pp. 87-89).

Douglas North, one of the later researchers in the field Nobel Prize winner in private economics, believes that the primary source of economic development and growth is not technology but institutional change. He notes: "*A major failing of the literature of both economic history and economic development is that the emphasis is upon technology as the impetus for economic development and hence we have endless studies of technological failure or stagnation. In fact, the key to growth is the institutional/organisational structure and its effect upon incentives, not only the incentives to invent and innovate, important as they are, but the incentive to organise the production process more efficiently, to reduce transaction costs in factor and product markets, to organise a judicial system to enforce contracts, to create a policy that will specify and enforce property rights, and most important of all to maintain those incentives*" (North, 1993, p. 8).

Note that the most prevalent trends in research on profound technological change over the past three decades are related to large-scale economic and social impact assessments of the convergence of technologies. According to M. Roco & W. Bainbridge (2013), the effects of convergent technologies are presented in five main directions:

1. The interdependence of all components of nature and society,
2. Analysis of solutions for research, development and applications based on the dynamic system-logical deduction,
3. Improvement Creativity and innovation through evolutionary convergence processes that combine existing principles and diver gence that generate new ones,
4. the utility between domain languages of a higher level ingenerate new solutions and support for the transfer of new knowledge and
5. the value of an inspired by vision is that the basic Studies are embodied in grandiose problems (Roco & Bainbridge, 2013, p. 2).

Some theorists tend to evaluate the components of the latest cluster of convergent technologies as modern manifestations of general-purpose technologies (GPTs), considering the potential for their application in almost all fields. The existing discourse in the economic literature on technologies of general significance, at least, has elements of a certain consensus. In particular, R. G. Lipsey, K. I. Carlaw and T. B. Clifford (2006) singled out 24 technologies of general significance, for which they set four main criteria:

- initially has much scope for improvement but comes to be widely used across the economy,
- has many different uses,
- creates many spillover effects (pp. 131-218).

The quartet of convergent technologies (nano, bio, and info-cognitive technologies), according to the methodology developed by Lipsey, Carlaw and Clifford (2006), completely fit into the logic of these criteria. In this sense, we can say that convergent technologies are a modernising project developing on a global scale, which can create a new paradigm of development. Irina Politkovskaya, Daniel Khvichiya and Larisa Artamonova (2021) technological convergences are defined as the process of transformation of the structure of the economy, which began with the combination of the development of economic relations in the reproductive system and the merging of technologies. They emphasise. "*This process must radically change the scale of resource consumption; the structure, the production of closed-loop production to the place of the dominant industry; separate the growth of human well-being from the expansion of the natural resources used*" (Politkovskaya, Khvichiya, & Artamonova, 2021, p. 2).

Several economists, notably Natalia Ezdina and Elena Dotsenko (2021), highlight the benefits of convergent technologies while noting that they pose apparent risks and challenges. They write: "*The digital mode of operation of most enterprises will inevitably reduce routine work or a complete replacement with high-tech equipment. As a result, the incomes of low-skilled workers and living standards may decrease, while those with highly qualified staff will have a significant competitive advantage by increasing the share of automated production processes*" (Ezdina & Dotsenko, 2021, p. 5).

Comparing the different views on convergent technologies in the economic literature, it can be concluded that there are no clear perceptions and assessments of the prospects for their impact. One thing is clear: Convergent technologies have radical and ground-breaking effects on all public and economic life areas, opening up new opportunities for modernisation and quality of life. At the same time, these impacts involve significant uncertainties, serious risks, and challenges.

Main Discussion and Analysis

It can be expected that the development and penetration of convergent technologies in various spheres of economic and public life will ensure the progress of civilisation if combined with globally balanced legal, political, conventional and humanitarian solutions. The development or borrowing of convergent technologies at the level of national economies, if properly institutionalised, in turn, can help to address the increasingly acute problems of both sustainable development and quality of life. From this point of view, many researchers consider the development and spread of convergent technologies as a dominant factor in the modernisation of economies and the inclusion of economic growth. Convergent technologies, combined with nanotechnology, robotics and artificial intelligence solutions, state-of-the-art biological and genetic engineering, and new generations of digital devices and state-of-the-art equipment, can actually build new quality productivity that can be salty. Environmental and security issues of overcoming and increasing the living standards of socially vulnerable groups.

It can be stated that one of the main or dominant technological factors in the development and modernisation of the global economy for at least the last 60 years is the mass production and distribution of products based on computer technology, microelectronics and digital solutions in all spheres of economy, public life, government and security. Moreover, the rapid development of military technology after the Second World War can be said to have become a powerful driving force in the fields of science, research and innovation, and for a significant part of the country, it has also been a significant driver of demand for the military sector.

Vernon Ruttan emphasises that war and the production of means of war have become serious factors of economic growth for many countries. This is especially true in the United States, where research and development related to the technologies of the most common technologies in the economy, such as aircraft, nuclear power, computers, semiconductors, the Internet, and space communications, have developed, primarily through the orders of the Department of Defense (Ruttan, 2006).

It should be noted that the general purpose of convergent technologies is more or less well-commercialised systems. This is especially true of information, telecommunications and digital technologies, which have been building large platforms for research, development, education, management, production and consumption culture for almost three decades. The rapid development of these technologies has led to profound, qualitative changes in the structure of the economy and employment.

At the same time, the cluster of new technologies requires fundamentally new formats of capital formation, investment, entrepreneurship and marketing, taking into account the fact that the risks associated with them are much higher than the risks associated with the materialisation of traditional technology clusters. The emergence

and advancement of convergent technologies should explain the emergence of the latest institutions for financing risky investment projects, such as venture funds and venture financing schemes. Especially after the global financial shocks and crises, the fanciful financing of innovative businesses has sharply increased. This is what happened after the global financial crisis caused by the COVID-19 epidemic in 2019-2020. The 2021 Venture capital report compared to the previous year, the volume of venture capital investments in the world doubled, reaching 621 billion dollars in 2015. It has increased three and a half times (State of Venture GLOBAL, 2021).

Among the changes brought about by convergent technologies, we must single out the severe impacts on both the economic structure and employment. On the one hand, it was evident that along with traditional large-scale production, new technologies allow companies with relatively small financial and human capital investments to create companies with excellent market growth potential, which, in a very short period of time, can create large market segments and become production, service and sales monopolists. The success story of IBM, Microsoft, Amazon, Apple, Facebook, eBay, and many more shows how a small startup based on a radical and original idea can revolutionise the market and become one of the leading companies in its field in a short period time.

On the other hand, the market innovation of each of these companies is not only a serious alternative to traditional business systems but also a serious challenge to traditional approaches to economic thinking and economic policy. It is evident that, for example, the business empires of Bill Gates, Mark Zuckerberg, Steve Jobs and Jeff Bezos were serious challenges to the business culture of mass production and the era of Fordism. It is no coincidence that the latest high-tech companies' market value estimation and investment flow generation mechanisms operate in a different measurement system on a global scale than the existing traditional business asset valuation mechanisms. In this case, we are talking about the NASDAQ Composite Index, a system of exchange valuation and sales of corporate shares of high-tech companies.

It turns out that the high-tech sector, being very attractive for investment and business, has a high probability of accumulation of crisis risks and shocks, as the often unrealised expectations of profits and significant dividends from that sector can lead to excessive accumulation of risks and shocks. In particular, this happened in 1997-2000, when thousands of high-tech companies went bankrupt, while in the previous period, the share price of network companies almost tripled, and the total volume of investments in companies in this field reached about $ 5 trillion (Draper, 2012). Since the onset of the crisis, the NASDAQ Composite Index has fallen by 80 per cent, and millions of people who have invested in US IT companies have lost billions of dollars.

It should be noted that economic structures and business culture based on convergent technologies have a severe impact on the structure of employment and the movement of public incomes. Convergent technology-based productions and their products have a large share of value added and revenue, so profits and wages in those areas exceed those generated in many traditional industries. From this point of view, these newest segments of production and service delivery are becoming signals of deepening social stratification. Systems, especially those based on digital technologies, create network products and monopoly value chains that allow their owners to earn exceptionally high returns due to their assets' high level of specificity. On the other hand, there are serious problems with assessing the actual income level generated in these areas for the tax departments of the nation-states.

Thus, the exceptional revenues created in high technology, which several theorists describe as "technological rent", in fact, open a new field of institutional-functional regulation. It is noteworthy that in the late 1990s, against the backdrop of the rapid spread of the Internet and investment boom in network companies, all expec-

tations of economic growth and increased inclusion were accompanied by positive macroeconomic trends and the main flaw of capitalism - the cyclical development of the economy – was overcome when it was evident that the "overheating" of the markets - the euphoria of network companies - is simply due to the exaggeration of speculative transactions and the expansion of stock market bubbles. Naturally, those dot.com "bubbles" exploded, causing tens of thousands of companies to go bankrupt (Cassidy, 2003).

The logic of the current global economic developments and the world economy's structure, and each national economy's position in that the system is essentially conditioned by the emergence of convergent technologies and development factors. At the same time, the modernisation of each national economy as a whole depends on the place of this or that country in the world hierarchy of technologies, how much it can generate or borrow this or that technology of the convergent technological bunch, or that bunch as a whole.

The development of convergent technologies is, in fact, a competition for the acquisition of a monopoly position and technological rent on a global market scale. This fact has been discussed and substantiated by different theorists from different points of view. In particular, given this circumstance, some researchers refer to the income generated by the application of radical technological innovation in different ways – "*Schumpeter rent*" (Sautet, 2015), "*innovative rent*", or "*business rent*". In particular, the President of the Stockholm Institute of Industrial Economics, Mangus Henriksson, thinks that a dynamic entrepreneur seeks to prolong the formation of his business rent as much as possible, but at the moment, it is limited. He notes: "*The entrepreneur is needed for economic development, and entrepreneurial rents are a prerequisite for the emergence and implementation of entrepreneurship. If entrepreneurial rents did not exist or were subject to very high effective taxation, firms would continue producing existing goods and services, while the motivation to search for new products would be eliminated*" (Henrekson & Stenkula, 2016, p. 19).

Based on the above judgments, it can be stated that large international high-tech companies seek to position themselves globally and spatially as possible to build their business plans so that the technological value-added chains become as fast as possible. Such business networking enables such companies to control the agendas of potential technological breakthroughs, neutralise the acquisition of leadership by potentially strong competitors, and build fundamentally new high-tech chains full of surprises. This circumstance is why the vast majority of countries with transitional and emerging markets are still unable to solve the problems of rapid modernisation of their economies, based on which a sharp rise in the population's living standards.

Examining the system of international relations for the creation of the latest technologies and the dissemination of innovations, the experts of the World Bank, in their extensive report, stated that overcoming the technological backwardness of developing countries is associated with more complex problems. World Bank experts call this phenomenon the "Innovation Paradox" (Cirera & Maloney, 2017).

Logic suggests that the borrowing of convergent technologies should have allowed large-scale emerging markets to embark on large-scale modernisation programs, overcome the problem of the low or so-called "middle-income trap", and address the productivity of the economy in the face of competitive advantages based on lower production costs and sharply increase in the level and welfare of the population. However, the reality is that the vast majority of developing countries cannot take advantage of the latest technologies, and such a paradoxical situation continues. The main reasons for this situation are the insufficient investment in innovations in such countries and the lack of an effective institutional system conducive to the advancement of innovation projects.

Especially in the case of the former USSR countries, the processes related to the advance-

ment of innovations are very contradictory by nature. This is primarily due to applying the extreme liberal versions of the neoliberal reforms that began in those countries in the 1990s and the devaluation of previously specific assets due to them, the disintegration of technological and production systems, the disintegration and degradation of educational and research systems.

In fact, in the conditions of such liberal reforms, there have been irreversible losses of innovations and competitiveness in countries with emerging markets. Instead of innovative modernisation of economies and growth of competitiveness, in those countries, there are phenomena of rising poverty, rising incomes of the population, corruption and rising levels of crime. Large-scale privatisation of state property in those countries has not been accompanied by high-tech modernisation projects of established private economies and firms and the creation of high-income workplaces. Economic growth in such countries has not been inclusive, primarily based on mineral resources, energy extraction and sales, and speculative resale of previously created assets. As a rule, there was no culture of reproduction or transfer of political authority through fundamental democratic procedures in such countries. In these conditions, for the people who usurped political authority, their political position was a way to have monopoly businesses derived from the government, quota the markets, production, import-export, and extort "political rent" based on it. The possibility of extorting political rent by the state bureaucracy has been one of the main obstacles to establishing real competitive markets and the innovative modernisation of economies.

Conclusion

Studies and analyses show that the bouquet of convergent technologies is the current state of modern civilisation and the dominant factor in the development of the coming decades. The new technology set is created and rooted, demanding appropriate institutional and resource mechanisms and policy tools. The latest cluster of convergent technologies simultaneously has a revolutionary effect on economic thinking and economic policy approaches and mechanisms. It becomes clear that convergent technologies can initiate a variety of unique manufacturing value chains and consumer cultures.

Convergent technologies determine the main models and agendas of the modernisation of developed countries and transform their economies. At the same time, it becomes clear that large international companies in developed countries are trying to implement their strategies on a global scale and accommodate their production and technological value chains in that context. Its purpose through technology transmission of the majority of the world's significant majority of countries integrates and integrates the already approved schemes of increasing value chains. The companies of developed countries implement this agenda through the formation and embezzlement of the technological rentha. This scheme is performed with various tools, starting with the reservation and protection of intellectual property rights and various tools for standardisation and cost optimisation.

Studies show that most transition countries in developing markets in development conditions are doomed to release essential technologies in developed countries And services. The main obstacles to the modernisation of countries with developing markets and convergent technologies are related to the lack of investment resources, institutional vulnerabilities, corruption, and political quasirent.

Acknowledgements

This work was supported by the RA MES State Committee of Science within the frames of research project № 21T-5B313.

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DOI: 10.24234/wisdom.v2i1.773
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NEW APPROACHES TO THE MANAGEMENT OF ORGANIZATIONS IN ACCORDANCE WITH THE PHILOSOPHY OF "VUCA WORLD"

Abstract

The article examines the influence of the "VUCA world" philosophy on the management of a modern organization. The growth of instability and uncertainty in all spheres of life requires specialists of organizations to possess a wide range of knowledge and adequate response to situations when it is impossible to predict the negative development of certain events. The management of organizations needs to abandon mental illusions and established structures in management, maintain their physical and psychological state, work constantly checking with the organisation's strategy, and support the team in the correctness of the chosen goals. In the "VUCA world" philosophy, digital technologies have predetermined the emergence of new "flat structures" for solving innovative tasks, assessing and managing counteraction to risks and threats. Contradictions associated with the release of a new product to the market have intensified because, in addition to previously known problems (investment, time and staff resistance), an organization may lose market share of products already produced.

Keywords: VUCA world, instability, variability, uncertainty, complexity, digital environment, risks, threats.

Introduction

Studies conducted in recent years have been marked by an increase in the volume of new information and a loss of relevance to existing information. Up to 90% of all information available in the world has appeared in the last 2-3 years, which means that the world that existed more than three years ago is already outdated. Many norms, ideas, knowledge and technologies are a thing of the past. Since 2015, approaches, principles and management methods, united by the abbreviation VUCA have been discussed in the global scientific and business community. "VUCA world" stands for volatility (instability, variability), uncertainty; complexity; ambiguity (Meleshkin & Nikolaev, 2012).

The "VUCA world" philosophy is a modern assessment of an ever-changing world, requiring managers to make dynamic operational and strategic decisions. How did the emergence of the new "VUCA world" approach affect the assessment of situations reflecting the ongoing changes and the processes of managers taking response measures?

The Philosophy of Assessment Changes in the External and Internal Environment

The widespread use of high technologies, rapidly changing economic conditions, and the emerging digital space require new approaches to managing organizations and information technologies. In the conditions of increasing environmental uncertainty, the role of some basic management principles in management is changing:

- "Authority", "Responsibility", "Initiative support" – the priority of each employee's personality is growing, and the conditions of relationships within organizations are changing. The staff is required to participate more and more in the adoption and implementation of management decisions, and consequently, responsibility is also growing;
- "Unity of action" – the role of the team in solving current and planned tasks is strengthened; team cohesion comes to the fore, and, consequently, the role and attitude of managers to this process is changing;
- The role of personnel is strengthened in the context of frequent adjustments to plans and assignments. The requirements are also changing, and specialists who are able to think variably deserve more attention;
- Requirements for ensuring the release of a better product (service) are being tightened.

Foreseeing the future is an important step that ensures the stable development of an organization that can encourage stakeholders to transform. Stephen R. Covey (2009) fairly defined that the ability to see the work result at its beginning is one of the essential principles of the work of the head of the organization.

As part of the development of the theory of environmental assessment with the help of the "VUCA world", it naturally became necessary to develop other approaches to VUCA strategies, flexible transformation (rapid restructuring), etc., and the acceleration of the development of IT technologies; digital space changes the role of personnel in this process. Specialists with a wide range of knowledge and understanding related to situations in which it is impossible to predict the development of certain events, where there is a high degree of risk, and threats are becoming the most demanded ones. In this case, the head of the organization acts as a risk manager, and his task is to focus the staff on the organisation's long-term goals.

The stability of the state and development of an organization is determined by the economic conditions of its functioning and the level of impact on it of external and internal factors created by the mechanism of countering negative manifestations. Let us highlight the primary sources of potential threats:

- threats related to political and economic processes in the state;
- threats coming from unscrupulous competitors, as well as partners;
- internal threats emanating from their own personnel;
- threats of the criminal environment;
- natural and man-made emergencies, such as a pandemic (Mezhevov, Arakelyan, & Vorontsova, 2020).

Managing a modern organization in conditions of increasing risks and threats involves the choice of proven and improved actions that ensure the achievement of planned goals.

The Philosophy of Changing the Requirements for Personnel Response to Environmental Instability

The basis of entrepreneurial activity is the contradiction between the planned and its existing state. Foreign and Russian scientists believe that business structures using modern strategic planning methods, new systems for assessing the situation, stimulating staff, and changing (abandoning rigid) organizational structures feel better than competitors in the new information space and the constantly changing world. With such changes, the staff should have the ability to analyze quickly, think outside the box, and possess high intelligence and good interpersonal relationships.

In a rapidly changing situation, "lovers of the unknown" feel better when problems arise; they usually rely on logic and intuition and can find extraordinary ways to find a way out. Such specialists also have good psychological stability.

For personnel working in an unstable environment, it is possible to distinguish such vital characteristics as knowledge, competencies and

skills, i.e. what characterizes a person's business qualities and his/her attitude to colleagues. It is crucial to abandon mental illusions and established structures, maintain your physical, emotional, and mental state at a high level, do not stop changing and improving, build horizontal and vertical connections, work with plans and goals, and constantly check them with the strategy of the organization and, most importantly, be able to take responsibility for the result.

The system of ensuring the reliable, effective functioning of the organization should first be based on the principles of setting goals and creating the necessary conditions for their achievement. It is essential to focus the goals on the stable development of the organization. In order to achieve the goals, it is necessary to establish a "corridor", to achieve them, and the management of the organization should ensure that it is constantly in the field of permissible limits (standards of individual parameters), excluding in the process of developing the output of system evaluation indicators beyond the lower, and sometimes the upper limit of the effectiveness of its functioning. When selecting, training, and retaining employees and managers, special attention should be paid to flexibility, speed of decision-making, and accumulated experience in the "VUCA – environment", that is, those who have the ability to act effectively in unpredictable situations.

The Philosophy of Changing the Requirements for the Behavior of the Manager

In an unstable environment, managers' efforts should identify the essence and nature of emerging risks and threats (Chuvashova & Nikolaev, 2018). In this case, the best strategy is to simplify the assessment and methods of counteraction as much as possible. It is necessary to focus on a limited number of understandable risks and threats and significantly narrow down some of them. It is not necessary to disperse efforts to react to all incomprehensible and unknown events. In such situations, the old schemes of planning, forecasting and counteraction management often do not make it possible to make informed decisions. Therefore, it is necessary to look for modern approaches to solving problems.

For a manager in such a situation, it is crucial to stop, look around, listen, think, and decide. This also applies to changing the conditions of interaction with the staff. The ability to switch from one thought to another, understand a new situation and look for ways to resolve it becomes a mandatory attribute of a modern manager.

It is crucial to be able not just to listen, but to hear people, feel the market, and soberly assess the position of resource providers and the interests of the organization's personnel. Today, "illiterate" can be considered those who do not know how to constantly study and, retrain, improve (Mandelbrot, 1982). The application of such an approach will contribute to stable progress in achieving the organisation's goals.

Managers need to pay more attention to communications, keep faith in the correctness of the chosen goals, focus on the main directions of development, stimulate staff, and competently assess and simplify the situation within the organization as much as possible. To implement all this, it is necessary to understand the very essence of what is happening, use the gift of knowledge and skills, trust your intuition and experience, and consider problems from complex and systematic approaches. The manager needs to develop and encourage critical and creative thinking employees constantly. Thus, the manager should be based on a balanced assessment and quick decision-making when solving emerging problems.

Changing the Requirements for Training Specialists to Work in an Unstable Environment

The XXI century requires management to plan work, taking into account a large number of possible adverse situations. The ongoing changes in the external environment and the digital econ-

omy require changes in the level of knowledge of entire generations.

In terms of personal development, the assessment of the current situation with the help of the theory of "VUCA–world" determines the continuous process of training and qualification improvement, the development of practical cooperation skills, increasing the role of talents and full involvement in the work of all employees of the organization (team). Continuous professional growth is required from the staff and the development of effective interaction skills, maximizing returns, and full involvement in production processes.

Assessing the situation with personnel in modern organizations, we can draw one more conclusion – personnel who have received a broad, comprehensive education, are able to think in a variety of ways and are willing to work with solutions to problematic situations, do not panic when faced with uncertainty.

The requirements for vocational education have also changed. New and improved forms of training should help increase the competence of personnel and their readiness to diagnose and effectively solve emerging problems. This is achieved by organizing:

- rapid learning;
- more internal movements and work with a consultant;
- attracting specialists on the terms of temporary employment, with possible subsequent enrollment in the state.

The involvement of third-party employees (outsourcing) will save on taxes and, to a greater extent, create conditions for responding to the ups and downs of the market to meet the organisation's needs in new competencies, knowledge, and skills.

There has been much talk in the Russian Federation about creating training systems in recent years. Nevertheless, the proclaimed national goal of building a socially-oriented society allows us to give the following formulation – "*everyone is talented, the state should help citizens obtain the necessary knowledge and competencies and further develop for the benefit of society*". By providing an opportunity to get a versatile education for everyone (even better - by stimulating him/her in every possible way), the state allows talent to open up in the interests and field of activity corresponding to his aspirations. An analysis of the current general education system of education and training of professional personnel in the Russian Federation shows that the Unified State Exam and other similar events do not contribute to the formation of the above-mentioned goals of social society and the formation of professional skills of work in conditions of instability, and even more so the propensity and desire for new types of thinking. Today, the Russian education system (general, specialized secondary and higher levels) has been restructured towards narrow specializations and the search for solutions among ready-made answers. The system does not develop variability of thinking.

Changing the Requirements for Managing an Organization in a Digital Environment

The philosophy of "VUCA–world" involves changing the management organization system and adjusting the principles and methods of organization management. The variability of the environment implies consideration of alternatives to the development of the organization. Despite strengthening collegiality in management, a modern manager should be ready to take responsibility for the decisions made. The variability of the situation and flexibility in decision-making allows you to quickly switch from one development scenario to another with minimal losses. Based on the "VUCA world" philosophy, the new approach assumes the possibility of rapid restructuring of organizational structures (flexible transformation). Such examples may be large foreign companies like Google, Microsoft, Spotify, Zappos, Ericsson, PayPal, Acrolinx, Moody's, Facebook, and Russian ones – Al-

faStrakhovanie, Sberbank, MVideo, and MTS.

The rapid transformation of goals, organizational structures and technologies involves close interaction of the organization's employees at different levels. Organizations' so-called "flat structures" have already appeared, including self-connecting cross-functional teams. With such a management organization, employees are result-oriented. This model, which can move from one state to another, to move from one behaviour model, for example, from authoritarian to another, more effective for the company at one stage or another of its development, is often called hybrid. This reflects the essence of a "self-organizing" organization, which is also understood as a "fractal model of organizational behaviour" (Mezhevov, Zheltenkov, Mitrofanova, & Ryabichenko, 2017). When functioning in an unstable environment, the advantages obtained from such teams are the ability to quickly manage changing priorities, labour productivity growth, acceleration of decision-making processes and introduction of innovations.

Risks and threats in the philosophy of "VUCA the world", affecting the organisation's activities from the external environment, are multidirectional. The functioning of an organization from the point of view of external factors is constantly at risk of disruption or deterioration of the situation due to possible disruption of the regional, sector and inter-sector resource flows and restrictions necessary for its activities. We noted that the threat, unlike the risk, represents a real but still possible impact on the organization. Therefore, when managing counteraction (active or reactive management), proven methods and mathematical apparatus can be used (Anikin & Rodkina, 2019)

The philosophy of the organization's work with risks and threats involves the organization of the collection, analysis and exchange of information and its systematization. Particular importance is attached to understanding the political, economic, social, technological, legislative and environmental factors that significantly affect the business situation. It is important to regularly use and update well-known methods of analysis and preparation of management decisions (PESTLE, SWOT, BCG matrix and others). When assessing risks and threats, ranking methods can be used to determine priorities and assess the degree of their impact on the state of the business to determine which steps need to be taken first. The lack of accumulated experience in the organization, methods and systems of continuous forecasting of the market environment, poor quality of market monitoring, effective methods of planned assessment of the behaviour of market participants, as well as mesoeconomical and macroeconomic factors may eventually lead to the bankruptcy of the company (Nikolaev, Chuvashova, Grishin, & Zemtsova, 2019; Nikolaev & Seleznev, 2019).

The "modernity" of an organization's management system can be assessed with the help of changes in the organizational structure, applied information technologies, production process management systems, the flexibility of the system (subject) itself, etc. In order to guarantee the positive dynamics of the development of an organization operating in a digital environment, in addition to external factors, it is necessary to analyze the possible negative impact of internal factors. To do this, it is advisable to use the following methods: scenario planning, decomposition, risk and threat assessment, etc. As for risks, it is possible to plan a response to them using the following areas: risk prevention, risk distribution, risk absorption, redundancy, risk diversification, localization and limitation.

The Philosophy of "Vuca World" and the Acceleration of Changes in Internal Processes in Organizations

The organisation's management should be prepared for possible threats that cannot be predicted. Acceleration of the processes of changes in the external environment implies an increase in the speed of internal staff movements to places where they will be able to unleash their potential to a greater extent.

A new product. The philosophy of the new product has changed. The processes of updating it have accelerated. Only innovations – the source of development and the priority direction of the organization's management can create new, competitive products. This can also be achieved through the growth of the competence of its own staff and the search and involvement of specialists who are inclined to develop and implement changes. The development and implementation of innovations is a process that requires certain financial, time and labour costs; therefore, innovative development creates a certain tension in the organization.

Another problem is the new product, which can significantly reduce the demand for the product currently produced by the organization. The question often arises whether it is necessary to create a new product to reduce the demand for what is already being produced today. Is it worth it? In this case, the management should seek and justify answers to the following questions:

- Does the organization need a new product today, including to prove innovative advantages over competitors?
- How have the modern requirements of the buyer changed, and how much does he need a new product?

On the other hand, practice shows that it is easier for competitors to copy a new product, and the question arises, does it make sense to risk "helping" competitors to strengthen their positions?

About technologies. Apply flexible processes – the requirement of the flexibility of adaptation and the ability to make changes quickly – as an important component in all current and new technology management plans and processes.

About the software. There are requirements for the organization management software. It is planned to introduce a continuous assessment system for obsolescence.

Organization of management. The nature of vertical and horizontal connections is changing, increasing and strengthening the latter. Implementation of fluid job descriptions. Creation of conditions and accumulation of experience for the continuous development of the processes of changing job descriptions to reflect new work standards and changes like staff activities.

Discussion

The scientific novelty of the authors' developments lies in changing the vector of requirements for the management and personnel of organizations, namely, in the growing demand for specialists with a wide range of knowledge and proficient methods of assessing situations in which there is a high degree of risks and threats. Today, the head of a modern organization needs to understand the very essence of what is happening, use the gift of knowledge and skills, trust his intuition and experience and consider problems from the standpoint of complex and systematic approaches. The manager needs to improve management processes and develop systems for professional development and employee incentives.

The use of the "VUCA world" philosophy revealed an increase in demand for personnel capable of thinking in a variety of ways and working with solutions to problematic situations, not to panic when faced with uncertainty.

The authors have identified several relevant areas for developing methodological approaches to risk and threat assessment, more comprehensive application of scenario planning methods, decomposition, etc. The use of reactive management to prevent or absorb risks, their diversification, localization or limitation is presented.

Conclusion

The functioning of organizations in conditions of increasing instability and uncertainty has significantly complicated their management. The philosophy of change, revealed by the VUCA world assessment, determined the strengthening and acceleration of democratisation processes in

business. Changes were identified in the assessment of ongoing changes, personnel response to environmental instability, managers' behaviour, training specialists, approaches to combating risks and threats, and organizations working in the digital environment. The growth of democratization in society, in the management system, acceleration of changes in the external environment and the environment of organizations implies a change in organizational structures and acceleration of internal staff movements to places where they can more fully unleash their potential.

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DOI: 10.24234/wisdom.v2i1.771
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PHILOSOPHICAL CATEGORY OF INTEGRATION AS A CONDITION OF ECONOMIC SYSTEMS DEVELOPMENT

Abstract

The article analyzes the concept of integration in dialectic unity with differentiation by its application during the study of economic systems development, including supply chains. The differentiation is a problem, i.e. the nature of occurrence of a critical situation in the system stipulating the need to generate new goals for the interaction of its components; integration is a solution to a problem, the basis for the transition to a new stage of system development. The study results reveal that the main integration drivers are factors that ensure the complementarity and compatibility of system components. It is stated that the functionality is the first condition for integration, that is, the potential for the unhindered implementation of individual goals and objectives which are not destructive to the system. The homology is the second condition, which ensures the compatibility of system components. The integratedness is the third condition that can be defined as the degree of firmness of links between system parts on which the system stability and viability depend. The author notes the importance of permanent diagnostics of connections within and between the economic system and environment since inter-organizational links constitute a differentiation factor.

Keywords: integration, differentiation, system, supply chain, integration drivers, structural functionalism.

Introduction

Integration issues accompany humanity at all historical stages of its development. Many scientists believe that integration is a development of the cosmopolitanism concept, which originated in the Ancient World (Balabaeva, 1990). Cosmopolitanism is based on the consciousness of humankind's unity and the interests and solidarity of the individual nations and countries as parts of humanity (Kirshin, 2013). In Russia, cosmopolitanism ideas were developed by such prominent figures as D. I. Mendeleev, V. I. Vernadsky, P. A. Florensky, V. S. Solovyov, F. M. Dostoevsky, L. N. Tolstoy, N. F. Fedorov, etc. In the late XIX century, Russian philosopher and sociologist P. L. Lavrov introduced the concept of "cosmopolitan industry and trade". He wrote about the unity and solidarity of humanity. He believed that the emergence of an understanding of the unity of humanity and its fundamental interests and needs, regardless of race, nationality and state, was one of the most critical moments in the history of humanity during the struggle for world domination (Lavrov, 2011, 2013). Joining together to achieve a common goal, whether it is people's life-saving safety, achieving a certain general social standard of living, etc., people cease to divide interests into national and patriotic, thereby coming to the ideas of cosmopolitanism. In a word, integration, as a process of joining people together, underlies cosmopolitanism.

The concept of "integration" in philosophy, sociology, economics and political science appeared in the middle of the 20th century. It means integrity and structure.

After the end of World War II, in search of security facilities and eliminating social dispari-

ty, the elite of Western European countries turned to the idea of unity, which outgrew into the philosophy of Western European integration. The most significant example of implementing the so-called "European idea" was the establishment and following development of the European Union. In 1967, the Association of Southeast Asian Nations (ASEAN) was established, the primary tasks of which were to ensure political-military stabilization in the region and promote the economic growth of countries. Integration processes occurred across the ocean much later in North and South America. In the 90s of 20th century North America, the US, Canada and Mexico signed the NAFTA agreement. MERCOSUR, the South American Common Market, was established in South America during the same period.

Today, integration issues are relevant globally and at a particular region, industry, and enterprise level. Over the past decades, many scientific works dedicated to integration theory development have been written. Indeed, this is because integration processes affect all human life spheres – education, culture, economics, politics, or business.

With advances in information technologies, in the context of global IT penetration, the implementation of the integration theory ideas has become accessible and authentic.

Challenges

The integration theory was developed by such scientists as R. Schmed, H. Kelsen, D. Schindler, I. Wallerstein, T. Parsons, E. Durkheim, B. V. Akhlibinsky, G. Paveltsig, etc. Researchers studied integration as a modern feature of the development of society (Wallerstein, 2003; Paveltsig, 1989). Based on the analysis of their works, we have refined the concept of integration. Integration means combining several components into one, which results in qualitative changes in the components and/or their relationships, thereby creating a new system and its connections with the external environment.

The works of scientists B. A. Akhlibinsky, B. M. Kedrov, A. D. Ursula, etc., state the various options for developing inter-organizational, inter-functional relations in integration. The components that form a new system, firstly, can retain the ability to exist independently of integration links; secondly, they can acquire new properties that are lost without this interaction; thirdly, they form such relationships that create a qualitatively new set of properties and links that cannot exist outside the given system (Akhlibinskiy, 1989).

Thus, the demand for the organization of the integration process in society arises when it is necessary to bring the system to a new level, combining the functions of various components and creating new goals for interaction between them. Therefore, integration is a condition for system development (Zhdanova, 2009).

Integration processes involve all human life spheres, so they cannot be considered separately from each other. Global integration defines cultural, political and economic integration, which in turn determine integration in education and business. Being rapidly developed in the post-war 1950s, the integration idea is now widely and generally used. Thus, in the late 20th century, under the conditions of international economic integration, the concept of logistics appeared in business, which later transformed into supply chain management. Supply chains are considered a combination of heterogeneous components, creating a closed circuit between production and consumption. This circuit is defined by the internal consistency of the chain links, on the one hand, and internal balance, on the other hand (Puzanova, 2015). In synergetics, integration is considered a process and result of finding the optimal structure of communication between components, which activates the development of each component. In the general theory of systems, the defining feature of integration is the presence of a composition in which the effect of the cooperation of parts exceeds the sum of the effects of their separate functioning (the principle of holism).

In Russia, companies are at the stage of active

formation of integration links in the supply chains. Manufacturing and trading companies jointly introduce information technologies that enable them to plan and manage business processes online jointly (Puzanova, 2020). X5 Retail Group, a prominent Russian retailer, has successfully introduced and uses the "S&OP" (Sales and Operations Planning) process in its supply chains. Today, the company, together with principal suppliers, introduces a Collaborative Planning Forecasting and Replenishment (CPFR) technique.

The history of global integration process development allows us to conclude that a depth of penetration defines integration: the integration processes are organized "from top downward", starting with the combination of components of the upper level and descending to the integration of components of the lower levels.

However, you cannot speak about the success of integration processes at the inter-organizational level without preliminary integration of functions within a separate organization.

Therefore, we can conclude that integration is a two-way process. A trend is set, the need for integration processes is determined at the top level, and a basis for forming links in inter-organizational relations is created at the organization level.

In philosophy, integration is considered in dialectic unity with differentiation. In the interaction process of heterogeneous components, processes appear to contradict the integration trend sooner or later. Under certain circumstances, disintegration gets the advantage and interrupts the integration process. Throughout the entire historical period of human development, an imbalance of both tendencies existed. The manifestation of the correlation of these processes explains the development of any system since it is due to the differentiation of the unit, the separation of new functions in it and the integration into a new unit (Kedrov, 2006).

The inter-organizational relations shall be one of the factors of disintegration, which are constantly in progress and tend towards synergy or conflicts either. Supply chain management will always remain a compromised control, finding balances of interests of partner companies. Consequently, logistical integration will be limited by economic realities, which in this case serve as disintegration processes.

Thus, we can forecast that at a particular stage of business integration, excessive differentiation will disrupt the supply chain stability because of more complicated relations between its links, internal inconsistency and the energy consumption of such a system, which will lead to the supply chain disintegration and the further emergence of a new approach to the organization of integration processes therein.

Investigating the matters of integration and differentiation concerning economic systems, you cannot fail to notice that these philosophical categories correspond to the fundamental provisions of the organization's life cycle theory. The classical theory of the organization's life cycle (OLC) distinguishes four main stages:

1. The generation stage: the economic system starts to be generated, opportunities for cooperation are identified, the goals of cooperation are unclear, and inter-organizational relations are being established.
2. The development stage: the goals of the economic system partners are agreed upon, an optimal algorithm for cooperation is developed, and an integration growth of key business processes is noted.
3. The growth stage: the structure of the economic system is stable; forms and conditions of cooperation are formalized.
4. The decline stage: inertia in inter-organizational cooperation; decrease in the level of innovative activity; artificially maintained system life.

Differentiation is a problem, the nature of occurrence of a critical situation in the system stipulating the need to generate new goals for the interaction of its components (stages 4 and 1 of the OLC); integration is a solution to a problem, the basis for the transition to a new stage of system development (stages 2 and 3 of the OLC).

Therefore, integration is a stage of system development.

This raises the question of how to determine when there is a need for integration both at a stage of development and the formation of the system integrity?

Discussion

To answer the raised question, it is necessary to study the integration category in terms of structural functionalism, according to which society is considered as a system with a structure and mechanisms for the interaction of components, each of which performs its function, contributing to the maintenance and reproduction of the system (Parsons, 1998).

T. Parsons, E. Mayo, R. Merton, N. Smelser, and B. Malinovsky developed the structural functionalism theory.

According to E. Durkheim (1996), a necessary condition for the viability of an integrated system is the "value generalization". To ensure the launch of the integration process, including within the supply chains, two key points are essential – the resources and knowledge that ensure the complementarity of components- the partners, creating the value of their interaction. Partners bring material, financial, process resources, capacities, personnel, intellectual property, brands, etc., to the relationship. By pooling resources, knowledge and capabilities, partners get competitive advantages, such as new products and sales technologies, new sales markets, joint research projects, etc. Such a driver primarily encourages companies to integrate within the supply chain.

According to T. Parsons, integration implies the presence of an "interpenetration area". Therefore, the components to be integrated must have such a feature as compatibility. Compatibility is conditional on the conformity of the components' development level, the presence of their cultural commonality, the similarity of political systems and views, etc. Compatibility makes it possible to quickly resolve conflicts, cope with uncertainty and risks, generate ideas and seek mutually beneficial solutions. Developing this idea, we can conclude that the relationship between various integration associations arises not only on the basis of common economic and political interests but equally on the basis of the commonality of value paradigms and ideological views specific to all participants in cooperation (Strukov, 2016). So this driver is the basis for forming inter-organizational relations in an integrated economic system, including supply chains.

To build solid and long-term relationships in economic systems, including in supply chains, it is necessary to know the partner's internal goals and objectives, be ready to comply with them and be sure that the partner will follow this line of conduct. In integrating logistics activities, the focus on harmoniously building collaborative business processes from research and development of new products and the production of goods or services to deliver the products to the end consumer becomes obvious (Puzanova, 2020). The success of this process depends on the conscious coordination of the efforts of all links in the supply chain.

T. Parsons notes that the main issue in integrated systems life support is determining the "obligations" that ensure loyalty to all components- the partners. It follows that the principal task in managing social and economic systems is coordinating the activities of its components. Upon the operation of integrated economic systems, including logistical ones, nothing can generate more serious negative consequences than situations when either party regularly fails to fulfil its assumed obligations to the partners. Hence, we conclude that the objectives are binding on all system components.

Thus, summarizing the abovementioned, we can lay down the conditions for the economic systems integration:

1. functionality means the potential for the unhindered implementation of individual goals and objectives which are not destructive to the system as a whole;

2. homology, ensuring the compatibility of components in the system;
3. integration, which can be defined as the degree of firmness of links between the parts of the unit on which the stability and viability of the system depend;

Summarizing the above, the following main integration drivers can be distinguished:

- the coincidence of development levels of components or systems;
- the similarity of political views and systems;
- the commonality of cultural origins and traditions;
- geographic proximity;
- the need to pool resources and capabilities;
- ability to build solid and long-term relationships.

Conclusion

In the context of global IT penetration and digitalization development, the implementation of integration processes is greatly simplified. Nevertheless, to benefit from integration and ensure the stability and viability of systems, it is necessary to identify and analyze integration drivers that ensure the complementarity and compatibility of system components and provide "value generation" and loyalty to the interests of all participants in this process. Also, a critical point is the permanent diagnostics of connections within and between the economic system and the environment since we must not forget about disintegration processes. Constant monitoring of inter-functional and inter-organizational relations makes it possible to timely detect the complication in relations between components/systems and the emergence of systemic inconsistencies, identifying the problem and developing ways to address the issue.

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DOI: 10.24234/wisdom.v2i1.779
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PHILOSOPHICAL ASPECT OF FORMING THE FOUNDATIONS OF NEW QUALITY OF EDUCATION BY TRANSFORMING THE INSTITUTIONAL ENVIRONMENT

Abstract

The research highlights the foundations of a new quality of education formed by transforming the institutional environment. The study's methodology is a complex of approaches, revealing in interrelation the philosophical aspect of the formation of the foundations of the new quality of education - including systemic and personal-activity approaches; logical and historical approaches; qualitative and quantitative approaches; phenomenological and ontological approaches. The foundations of a new quality of education formed by transforming the institutional environment based on the philosophical aspect are proposed to be divided into two groups: objective and subjective foundations. Objective foundations have an impact on the education quality while not being conditioned by the institutional environment. Subjective foundations, on the contrary, are in a direct causal relationship with it. We consider it necessary to single out Informatization and Integration of Society among objective foundations. As subjective foundations, we single out Quality Assurance and the Dynamics of Interests of all participants in the educational, research, entrepreneurial and innovative processes. Subjective foundations are proposed to be considered in the European term Quality Culture structure.

Keywords: philosophical aspect, quality of education, foundations of a new quality of education, new quality of education stakeholders, transforming the institutional environment, informatization of society, integration of society, quality assurance, quality culture in education.

Introduction

The concept of quality of education is revealed in the works by scientists in education, philosophy, sociology, political science, cultural science and economics. In each specific case, the definition of quality of education receives a specific context for a particular science. For example, in the writings of economists, there are attempts to establish a causal relationship between investment in the educational process and the quality of education. On the one hand, the specific methods of such research leave no doubt about the validity of the thesis "more investment in education - higher quality of education; less investment - lower quality" (Andreev & Gretchenko, 1998). On the other hand, such an approach cannot consider the delayed effects of education and the budget costs associated with compensating for the consequences caused to society.

Clearly, the relationship between investment in education and the quality of education is nonlinear and should not be considered a correlation. Moreover, any such attempt goes against the philosophical aspect.

We have identified the most common characteristics in the review of interpretations, abstracting from the science to the definition it pertains to.

Understanding education as a process, in

some cases, is enough to consider its quality in the appropriate context. This approach is provided for by international standards ISO 9000:2015 (ISO 9000:2015 Quality management systems. Fundamentals and vocabulary, 2015), ISO 9000:2015 (ISO 9000:2015 Quality management systems – Requirements, 2015), IWA 2:2002 (IWA 2. Quality management systems - Guidelines for the application of ISO 9001:2000 in education, 2007), ISO 29993:2017 (ISO 29993: 2017 Learning services outside formal education. Service requirements, 2017).

However, education is also a result. Furthermore, in ISO 9000:2015 standard, for example, quality (3.6.2) is formulated as the degree to which the set of inherent characteristics (3.10.1) of an object (3.6.1) meets the requirements (3.6.4) (ISO 9000:2015).

Considering education as a process and result, its quality is rightly studied from the standpoint of standards and recommendations for quality assurance in the European Higher Education (ESG 2015), developed by the European Association for Quality Assurance in Higher Education (ENQA), together with the European Union of Students (ESU), the European Association of Institutions of Higher Education (EURASHE) and European University Association (EUA).

It should be noted that the quality of education is "a cumulative indicator, with the criteria to be described in terms of the process (its input and resources) and its output reflecting the degree of satisfaction of the interests of the participants concerning the field of education" (Sedov, 2017, p. 54). For example, in work by Harvey and Green (1993), the term quality is revealed as a transformation (process) and as a goal (result).

The philosophical aspect should not allow the definition of a new quality of education through the entrenched idea of professional competencies as a non-alternative value for society.

The new quality of education is not only a cumulative but also a dynamic indicator, with the components and criteria changing as the social order for education is updated, which is expressed, as a rule, in the relevant standards (educational and professional). The term new quality of education is often used in the abstracts of academic researchers in the context of discussing changes in the requirements of stakeholders and the transformation of the institutional environment.

It is participants in relations in the field of education who should be considered as stakeholders of a new quality of education, i.e., participants in educational relations and federal state bodies, state authorities of the constituent entities of the Russian Federation, local governments, employers and their associations (Moiseev, Pastukh, Nitsevich, & Stroev, 2021). At the same time, participants in educational relations are students, parents (legal representatives) of underage students, teachers and their representatives, and organizations engaged in educational activities (Federal Law "On Education in the Russian Federation", 2012).

We took the philosophical aspect as the key one in achieving the *purpose of our research*, which was to highlight the foundations of a new quality of education formed by transforming the institutional environment.

The transformation of the institutional environment is considered in the works of both foreign and domestic authors. D. North (1990) has made a profound insight into the concept of institutions as the rules of games contributing to understanding the actions of counterparties and forming the fundamental structures of any society. According to him, institutions allow us to make rational choices and maintain competitive relationships. Concerning our research problem, we can say that due to the evolution of institutions, the most effective rules are established for the interaction of all stakeholders in the educational process. At the same time, another scientist, R. Coase (1937), pointed to the presence of certain transaction costs, which, thanks to the established institutions, become minimal. The interaction of all stakeholders in the educational process, carried out based on existing institu-

tions, becomes effective (Tikhonov & Novikov, 2020). Over time, with the emergence of new requirements in the educational process, institutions transform. Inefficient rules that do not reflect current socio-economic processes are being replaced by new ones that improve the quality of education. Among modern scientists studying the processes of transformation of the institutional environment in education, one can single out I. Frumin and other scientists from the State University - Higher School of Economics (Russia) (Frumin et al., 2020). Scientists have shown the emergence of new institutions in education under the influence of digitalization. This applies to the emergence of such new institutions as distance education, massive open online courses, individual digital learning trajectories, tutoring in a digital environment, and the student's digital footprint (Akhmetshin, Vasilev, Kozachek, Meshkova, & Mikhailova, 2021; Mikhailov, Tikhonov, & Margarov, 2022). Institutions and their transformation in education depend on internal (subjective) and external (objective) factors. Among the variety of such factors in the present study, emphasis will be placed on such as the requirements for the quality of education by various stakeholders of the educational process. This formulation of the question in the context of the institutional paradigm leads to the need to study the phenomena of quality of education and quality culture of education in current conditions with the enhancing role of digital technologies and integration processes (Vorontsova, Arakelyan, & Baranov, 2020).

The polysemy of the term quality of education actualizes several issues, including the issue of forming the foundations of a new quality of education through the transformation of the institutional environment. The problem of this study lies in the question: "What are the foundations of new quality of education, formed by transforming the institutional environment, taking into account the interests of all participants in the educational, research, entrepreneurial and innovation processes?".

Methodology and Organization of the Study

The methodology consists of a systematic approach underlying the study of quality culture as a system; a personal and activity approach used to study the potential for technocratic and humanistic paradigm integration; logical and historical approaches; qualitative and quantitative approaches; phenomenological and ontological approaches.

In this paper, the authors adhere to the fundamental idea of the need for technocratic and humanistic paradigm integration. The technocratic paradigm in education has been adopted in higher education to the level of a non-alternative value, while the supporters of the humanistic paradigm in education have enough arguments in their favour.

We apply phenomenological and essential approaches relating to a number of categories used by the authors in this work. Semantic analysis of terms, generalization of definitions, and formulation of the authors' definitions of concepts like education quality assurance and education quality culture are made on the basis of the rule for defining a concept through the closest genus and specific difference.

The study of quality culture as a system is based on a systematic approach. So the quality culture of education is studied as a system with all its essential properties: integrity, emergence, synergy, hierarchy, etc.

Logical and historical approaches are implemented in the review of many years of work of our colleagues. Thus, for a number of years (in 2002-2006, 2010-2012), scientists of the European University Association (EUA), together with the Union of Rectors of Germany and the Scottish Quality Assurance Agency, have been studying quality culture in universities. The results are presented in the European Quality Assurance Forum (EQAF) materials. A review of published reports has confirmed the idea about the interdependence between quality culture and satisfac

tion of the interests of all participants in the educational, research, entrepreneurial and innovation processes. Along with this idea, another one has been confirmed - the effectiveness of standards and recommendations for quality assurance in the European higher education area (hereinafter referred to as ENQA or ESG standards and recommendations) was provided by an individual approach.

Research Results and Discussions

The foundations of a new quality of education, formed by transforming the institutional environment, are proposed to be divided into two groups: objective and subjective foundations.

Objective foundations have an impact on the quality of education while not being conditioned by the institutional environment. Subjective foundations, on the contrary, are in a direct causal relationship with it.

Among the objective foundations, we consider it necessary to single out informatization and integration of society. As subjective foundations, we singled out education quality assurance and the dynamics of the interests of all participants in the educational, research, entrepreneurial and innovative processes. Subjective foundations are proposed to be considered in the structure of the term quality culture.

The integration of society, for example, predetermines progress also in a country having no key discovery. Such mutual support has determined the orientation of education towards the international specialization of production, the specialization of domestic production and the advanced nature.

We have singled out informatization as the second objective basis. On the one hand, informatization has provided a more knowledge-intensive world order. On the other hand, it has endowed society with problems that the information singularity can explain. Modern ideas about the possibilities of information are more comprehensive, so the expectations (needs) are higher.

The above factors (integration and informatization of society) determine the dynamics of the interests of participants in the educational, research, entrepreneurial and innovation processes (Zelentsova & Tikhonov, 2020). The interests of the participants in relations in the field of education may be formalized or not (by educational and professional standards), but they are not interconnected and change over time.

It should be noted that the integration of society, the informatization of society and the dynamics of the interests of education stakeholders, in addition to apparent advantages, also have disadvantages: import dependence, information singularity and time compression.

Import dependence is a direct consequence of the integration of society. In the context of the orientation of education towards the international specialization of production and the specialization of domestic production, the loss of strategic partners (history contains enough examples, there are also precedents in our time) leads to uncertainty in these very beacons, to the loss of time required, for instance, to train the missing staff.

Note also the presence of the butterfly effect, inherent in informatization in the modern world. In other words, it is possible to express so that knowledge can be represented in an array of information so that it loses the critical property of "truth" and receives many interpretations of meanings (even the opposite). More and more publications are using the term information singularity to explain the senselessness of a person mastering a new volume of theoretical material in a certain subject area.

As we understand it, time compression is the "acceleration of historical time" (Kapitsa, 2004), characterized by relatively shorter development of educational, research, entrepreneurial and innovative processes and their interaction. The interaction is becoming more and more vulnerable. For example, education can no longer guarantee quality training of a specialist because a whole generation of equipment could change at the enterprise during the student's training. Therefore,

the dynamics of the interests of participants in educational, research, entrepreneurial and innovative processes in the objective conditions of time compression can lead to an even more significant mismatch among stakeholders.

As a kind of response to the challenges of our time, we propose to consider another basis of a new quality of education - quality assurance.

Note that the term "quality assurance" in the context of education did not take hold in Russia to the extent that it could, based on ENQA materials. This thesis does not deny the fulfilment of obligations under the Bologna process. We only talk about the term "quality assurance". More familiar to society are the concepts that make up the meaning of "quality assurance" - management and quality assessment.

The value of the term "quality assurance" is a system-forming concept that includes the whole spectrum of activities around education essentially. This is borne out by the ENQA materials and is confirmed by the works of scientists (foreign and Russian) investigating the problems of quality of education. So, for example, quality assurance is written in the document "ESG 2015": "The term quality assurance is used in this document to describe all activities within the cycle of continuous improvement" (Standards and recommendations for quality assurance in the European Higher Education Area, n.d.). Attempts to define the term "quality assurance" led Russian scientists to the international standard ISO 9000:2008 (later ISO 9000:2015) (Azaryev, 2012). This standard contains a dictionary that allowed (excluding ambiguity) to identify all components of the concept of "quality assurance": management (all parts of management - planning, management, provision, improvement) and evaluation (Azaryev, 2006).

In collaboration, a group of employees from Saint-Petersburg State Electrotechnical University, Moscow Institute of Steel and Alloys, Moscow State Technological University "Stankin" performed research (2006-2010) To develop framework documents that could be used by any vocational training organization (technical/college, institute/university). One of such documents defines "quality assurance of education" through the management parts (planning, management, maintenance, improvement) and evaluation. Partly because of this, quality assurance was soon identified by the academic community with quality management (National standard of the Russian Federation GOST R ISO 9001-2015, 2015).

However, the semantics of these two terms should be considered precisely in the context of the educational organization since education is considered not only through the notion of "process" but also through "result", associated "resources", and necessary "documents". In addition, ISO 9000 does not include quality assessment as part of quality management. On the contrary, ENQA standards and recommendations are built in the logic of such an assessment, for example, program assessments, academic performance assessments, etc.

As a result, by guaranteeing the quality of education, we mean the activity of the educational organization, which is related to management (planning, management, maintenance, improvement) and evaluation.

Note that ENQA standards and recommendations have covered not only the higher education system. On the official websites of secondary specialized educational institutions (educational organizations of secondary vocational education), one can see evidence of the commitment of the staff of educational organizations to European standards. So, as a rule, the sites contain information of "open access" - the mission, vision, policy and goals of the organization in the field of quality, etc.

Colleges are actively involved in competitive activities, for example, in the Rosobrnadzor Competition Quality systems for training graduates of vocational education institutions.

Thus, according to ENQA standards and recommendations, vocational education responds to a new understanding of the quality of education among the leading potential employers (colleges).

Important addition is the fact that the ESG uses international standards of the ISO 9000 series - used in many companies to protect their business reputation.

In this regard, for several reasons, it is simply necessary to be guided by ENQA standards and recommendations in higher education.

Effective tools for this work are materials prepared by a group of employees of Saint Petersburg State Electrotechnical University, Moscow State Technological University "Stankin", Moscow Institute of Steel and Alloys, and Tomsk Polytechnic University on a state assignment in the period from 2006 to 2010:

- Materials for vocational training organizations on the selection of a quality assurance model from among developed;
- Materials for vocational training organizations to adapt the selected quality assurance model and prepare it for implementation;
- A dictionary of key terms to avoid ambiguity in work on the implementation of the quality assurance model;
- Materials for audit of the quality assurance model in the organization of vocational education, assessment of the level of maturity of processes in the organization and identification of perspective directions for improvement of the quality of education.

This package of documents, approved by the Federal Educational and Scientific Supervision Service in 2005 and tested in 2006, makes it possible not only to get acquainted with developments in the form of effective models of management and evaluation of the quality of education but also to choose the most suitable, adapt, implement and develop quality assurance based on audit results (both external audit and internal / self-evaluation).

From 2006 to 2010, several other materials were prepared by almost the same team, led by authors from the Saint Petersburg State Electrotechnical University, which made it easier to adapt to the chosen model of quality assurance of education. Materials are not only ready-made templates for completion but also recommendations for working with these templates. For a number of years, the university itself was engaged in training specialists (through the system of additional vocational education - advanced training courses) from different parts of Russia and CIS countries to work with the whole package of documents and audits (external and external and internal). As a result, a roster of expert auditors of quality management systems in vocational training organizations, registered with the Council of the Federal Service for Supervision in Education and Science, had been established by 2010.

Listed materials recommended for implementation in the establishment of quality systems since 2007

Having processed these materials, we obtained an adapted process maturity model (Fig. 1), which the authors submitted to the IV All-Russian Scientific and Practical Conference "Quality Management in Education" in St. Petersburg for discussion by colleagues.

		PROCESS MATURITY LEVELS			
		Definiteness	Reproducibility	Ability	Efficiency
QUALITY ASSURANCE	Planning	Consumer requirements are *formalized,* process outputs are *defined*	Customer requirements are *defined* in terms of the process quality outputs, and process inconsistencies are formulated in terms of the discrepancy between the process quality outputs	*Formalized* input and internal characteristics of the process quality	Identified, minimized (eliminated) activities that do not add value
	Control	*Measurement* and fragmentary *analysis* of some process quality characteristics	*Measurement and analysis* of the process output indicators (practised constantly). Implementation of *corrective actions* (search for causes of inconsistency, confirmation)	*Measurement and analysis* of input and internal characteristics of process quality *(preventive actions)*	Management of "problem points" (practised constantly)
	Support	*Documentation* governing activities within the process	Process *documentation* defines the collection and analysis of process quality output data. Authority and resources to maintain process quality outputs within requirements	*Authority and resources* to change process quality outputs	The system of training the process participants. The practice of disseminating information within the process about changes in customer requirements
	Improvement			Process improvement in terms of process quality inputs and internals	Determination of alternative ways of the process development
	Evaluation	There is feedback from the consumers of the process	Process quality outputs are *within established limits*	*An increase in customer satisfaction* with the process quality outputs is recorded	Assessing the impact of changes in the process on its efficiency

Figure 1. Maturity Model of University Processes in the Context of Quality Assurance.

Figure 1 presents a process maturity model interpreted through the quality assurance framework in education. The accumulated experience of training employees on quality management in education makes it possible to judge the effectiveness of such a treatment of the model.

The model allows colleagues (primarily process managers) to independently determine the maturity level of the process they are engaged.

Determining the maturity level of a process according to the model shown in Figure 1 also can help in the following:

- in defining the activity (i.e. a component of quality assurance in education: planning, management, provision, improvement, evaluation), with the level lower among the others in the process under consideration;
- in highlighting the activity with the level higher among the others in the process under consideration;
- in identifying points of growth - types of activities that require additional elaboration for enhancement;
- in outlining those characteristics of the pro-

cess in general terms that need to be obtained in a particular activity – to increase the maturity level of the process as a whole.

One can fail to see the humanistic paradigm (culturological approach) in education in the proposed model. However, the technocratic paradigm (competency-based approach) has precise contours. There is also a particular bias in the work of researchers who, in solving problems of the quality of vocational education, rely either only on the technocratic (competence) paradigm or (which is extremely rare) put the humanistic paradigm at the core of the solution.

In this regard, we note that the development of education in the direction of new quality, formed by transforming the institutional environment, in our opinion, must be considered in the context of the concept of quality culture.

One of the first documents to mention the concept of quality culture is the ENQA (ESG) standards and recommendations. For example, in the modern edition of the ESG, its development is presented as one of the basic principles of quality assurance in the European educational space. In the works of Russian scientists and educators, the term quality culture is predominantly found in translated materials and works devoted to the study of foreign experience. The term quality culture conveys the meaning of "quality as a shared value and collective responsibility of all participants in the educational process at a university" (Meshkova, 2010, p. 116). Quality culture is "a constant joint search for innovative mechanisms to support the teaching quality corresponding to the goals of the professional and personal growth of the teacher himself, the needs of students, the development strategy of the vocational education institution as a whole, and ultimately ensuring the high quality of educational results" (Meshkova, 2010, p. 133; Kamaeva, Zemsh, Gilmanshina, & Galich, 2021).

The semantics of the phrase quality culture in the works by Russian scientists is not yet presented in any sense that is different from the European sense. Furthermore, works on the quality culture of domestic education represent a projection of the original interpretation of Russian cases.

In this regard, we present the authors' understanding of the concept of quality culture in higher education. Among the meanings of the word culture given in most of the analyzed dictionaries, we note such common ones as "a set of industrial, social, spiritual achievements of people" and "a high level of something" (Ozhegov, 2010, p. 313). Definitions similar to this can also be found in other studies (Alekseev, Katasev, Kirillov, Khassianov, & Zuev, 2020; Ismagilov, Molotov, Katasev, & Kataseva, 2019; Kildeeva, Katasev, & Talipov, 2021; Panischev et al., 2020; Mingazova, Subich, & Gazizova, 2020; Makhmutova & Anikin, 2019; Nazarov & Anikin, 2017). Summarizing the above, under the quality culture of education, we mean a set of values, norms, and rules of conduct through which the university ensures a high degree of compliance of the educational process (its input and resources) with the requirements of all participants in relations in the field of education.

In the period between 2002 and 2006, foreign colleagues of the European Association of Universities completed the project "Development of internal quality culture in European universities", in which 134 universities took part. It was continued by the project "Research on quality culture in universities (EQC)", carried out under the auspices of the European University Association (EUA) in conjunction with the conference of German rectors and the Scottish Quality Assurance Agency (2010-2012). A Russian representative from the Higher School of Economics also participated in it. The results of the mentioned studies were discussed at the European Quality Assurance Forum (EQAF) in different years. The analysis of the forum materials allows us to say that in higher education, the development of quality culture and stakeholders' satisfaction is in a causal relationship. At the same time, there is no uniform concept for developing a quality culture. On the contrary, universities that demonstrate the desire for such development formulate different goals, applying even more

diverse strategies to achieve them.

Conclusion

Taking into account the philosophical aspect, we propose to divide the foundations of a new quality of education formed by transforming the institutional environment into two groups: objective and subjective foundations. Objective foundations (informatization and integration of society) influence the quality of education without being conditioned by the institutional environment. Subjective foundations (education quality assurance and the dynamics of the interests of all participants in the educational, research, entrepreneurial and innovation processes), on the contrary, are in a direct causal relationship with the institutional environment. The identified foundations determine not only the positive development of education. Negative consequences include, for example, import dependence, information singularity, time compression, and bias towards the technocratic paradigm.

The subjective foundations for mitigating the negative impact of the above foundations are proposed to be considered in the European term quality culture structure. Education quality culture is the result of quality assurance and the process of quality assurance, including quality management (involving planning, provision, managing, improving) and assessing the quality of education.

A study of quality culture conducted in European universities in the period from 2006 to 2012 suggests the need to take into account the "culture of quality" as a primary factor in improving the quality of education. However, scientists unequivocally agree that there are no universal "recipes". There are only common "dotted lines" for following their example. The Russian experience of improving the culture of quality is such (judging by the results of scientific research rather than formal reports) that it is possible to confidently say only about success in assessing the quality or in some part of management. We believe that developing "qualitative culture" as a system concept in education is a lost profit. We could not help but note that the solutions in different cases were the more successful, the better they combined traditions and innovations.

The transformation of the institutional environment with a focus on the philosophical aspect (by which we propose to understand the objective and subjective foundations we have identified) should bring education to a new quality. This postulate requires confirmation by the results of experimental work. However, the arguments given in the article are sufficient to accept our position as a working one.

Acknowledgements

RFBR, project number 19-29-07037 funded the reported study.

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DOI: 10.24234/wisdom.v2i1.780
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PHILOSOPHICAL AND ANTHROPOLOGICAL ANALYSIS OF THE SEMIOTICS OF THE ECONOMIC AND LEGAL SYSTEM

Abstract

The primary research method is to carry out a philosophical and anthropological analysis of the semiotics of the economic and legal system in the society of that culture. The methodology includes several theoretical methods of analysis. The economic and legal system is integral to modern social and cultural life. Its influence on forming a person's economic and legal culture is significantly enhanced in the era of information technology and the anthropotechnics inherent in them. All this actualises the consideration of the semiotics of the economic and legal system in the philosophical and anthropological plane and allows expanding the horizons of comprehending the cultural dimension of money, and law as semiotic phenomena, identifying the ideological, cultural, social and mythical basis on which they rely. Based on the philosophical and anthropological analysis results, the critical characterising elements of the economic and legal system in the culture and society were identified.

Keywords: philosophy, philosophical analysis, economic system, law, anthropology.

Introduction

The prospects that open up due to implementing the philosophical and anthropological approach to the problems of economic and legal relations make it possible to identify its human-creative potential that meets the needs of an active and mobile society. Consequently, considering late modern transformations and representations of finance, studying their semiotics will contribute to understanding the sociocultural and psychogenetic trends of the current stage of the civilisational process. The solution to the outlined range of problems is one of the urgent tasks of modern philosophical anthropology, which is the methodological basis for interdisciplinary studies of sociocultural syntheses, including the semiotics of economics and law (Dow, 2021).

One of the urgent tasks of philosophy is to comprehend reality and analyse a person's perception and understanding of socio-cultural reality. Modern philosophical reflection is distinguished by close attention to the problems of semiotic mediation of reality. The most important mechanism for constructing reality as a semantic design and creative production is its mediation through sign-symbolic forms. Elucidation of the role and features of the functioning of one of these forms, namely the semiotics of symbolically symbolic forms of economic reality, is necessary for clarifying its methods and determining their features in various systems (Nagatsu, 2015).

In search of truth, education and science are interpreted as part of the process and consequence of forming a particular person's image in culture. In choosing the most promising ways of modernising education, they turn to traditional methodologies of cognition not only of educa-

tional activities but also to philosophical and methodological explications that reveal the nature and essence of the main subject of all educational transformations - a person who learns and teaches. Increasing scientific interest in methodology, in particular in philosophical and philosophical-legal, is necessary and imperative because to solve a considerable number of problems in the relations "man – society", "man – nature", "man – man" is capable of only an educated person from a high worldview culture (Yi, 2018). A thorough study and analytical understanding of the professional training of a lawyer is conditioned by the need to embody its main characteristics in the conditions of the crisis of the modern creation of the state. In addition, the problems of philosophical anthropology can be quite logically applied to the professional training of a lawyer, which, in its essence, has quite optimal possibilities for arming a future lawyer with a methodology for studying a person, his self-realisation and approaches to determining the goal, content and technologies of legal education. At the same time, professional legal education is not sufficiently based on the philosophical, worldview and theoretical and methodological potentials.

The key construct of the economic and legal theory is money as the basic concept of the semiotic system. In the functioning of the modern economy, they create a particular economic and legal reality. The spatiotemporal semiotics of money is manifested in the coincidence of the material and the ideal, things and thoughts, which ensures their distribution in the socio-cultural reality, where they perform not only purely economic functions (a measure of value, means of circulation, payment, accumulation), but also form a socio-anthropological image, to replace a person capable of sensory perception with abstract concepts in which the rules governing the economic and legal activity of a person are formulated (Kryshtanovych, Chubinska, Gavrysh, Khltobina, & Shevchenko, 2021).

This much determines the relevance of the chosen problem. The primary research method is to carry out a philosophical and anthropological analysis of the semiotics of the economic and legal system in the society of that culture.

Methodology

Methodology always follows from the corresponding philosophy, but the problem is that most specialists in economics and law are not familiar enough with the latest achievements of modern philosophy, anthropology, and cultural studies, which significantly narrows the field of possible searches. This is what makes research on the philosophy of economics and law very relevant.

The formation of philosophical and anthropological analysis is associated with the centuries-old development of philosophical thought and different versions of managerial anthropology. The philosophical and anthropological approach was formed in the 60s of the XIX century, when scientists developed the anthropological principle, according to which the concept of "man" is the main ideological category of the consumer society, on which the system of ideas about nature, society, thinking, management is based, and constituted the essential concept of the socio-anthropological paradigm. Therefore, European anthropology is directed to the individual and historical concretisation of human existence, the definition of social and cultural standards of the population, social indicators, and human development indices that operate in the world's developed countries (Kolesnikov, 2020).

The anthropological approach aims to study the relationship between man and power, man and government, man and politics, man and state, and man and culture, positively or negatively affecting the relationship between man and society. An anthropological approach is necessary for studying consumer society since it focuses on people, institutions and society, and the formation of the individual in historical dynamics. The methodological guidelines of philosophical anthropology are fundamental for the consumer society:

a) the social orientation of politics, power, and

management;
b) the humanisation of politics, power, and management;
c) analysis of management as an organon of the transformation of the world, contributing to the creation of favourable conditions for the self-realisation of the individual;
d) clarification of the historical purpose and place of a person in the power structures of management;
e) the definition of human essence in all manifestations realised through the management and attunement to human needs and interests (Kozlova, 2018).

Its interdisciplinary nature determines the theoretical and methodological foundations of the study. In analysing the place and importance of a person in the economic and legal system, sources from the history of philosophy, cultural anthropology, economic theory, the financial market and specific economic and legal problems, ethics, psychology, religion and fiction were used. Along with general scientific ones (analysis, synthesis, induction, deduction, generalisation), the following research methods were used: system analysis (in the study of sign-symbolic forms of economic and legal reality), anthropo-societal (to study the analysis of an economic person as an employee and as an owner).

Research Results and Discussions

Historical Genesis of the Semiotics of the Economic and Legal System

By the end of the 1980s, the central dichotomy of economic theory was the opposition between capitalist and socialist economic systems. This situation has changed dramatically since the early 1990s. The socialist discourse as such de facto completely disappears in most countries of the world, and as for the capitalist discourse, neoliberalism, with its monetarist approaches, begins to dominate there firmly. As for the discourse of the general humanitarian, since the middle of the 20th century, a stable stereotype has been fixed there about the existence of a connection between the market economy and capitalism, on the one hand, and democracy and a high standard of living, on the other. Meanwhile, as the political and economic history of the late 20th and early 21st centuries shows, this is just a stereotype that hardly corresponds to reality, at least in the short and medium term. There are several economic paradigms in modern economic and law science (Levcheniuk, Vlasenko, Tovmash, Atashkadeh, & Stezhko, 2021).

The developmental tradition emphasises the need for development. The beginnings of this tradition can be traced back to the end of the 16th century. By the end of the 18th century, the developmentalists were mercantilists, but they changed their views at the end of the century, switching to production analysis. The latest achievement of this school is the theory that the policy of protectionism or the protection of fledgling industries should be accompanied by investment in production. The main drawback of this tradition is the lack of a general theory.

The Austrian school, beginning at the end of the 19th century by Karl Menger, came to the fore in the 1920s and 1930s thanks to a debit with Marxists about the expediency of central economic planning. The most famous representative of this school has written several books about the disastrous nature of such planning for the economy and other aspects of life, particularly that the planned economy leads to totalitarianism and dictatorship. On the contrary, a free-market economy is a necessary condition for democracy. As for the purely economic side, the followers of this school say that central planning cannot be effective in principle, and only the spontaneous order of the free market can balance the different plans and interests of numerous agents of economic activity. The free market is the best and only efficient economic system.

Science is not the only way of human knowledge of the surrounding reality. In addition to science, myth, art, and religion are also called among the ways of cognitive development of the world. They also reflect reality in a certain way,

somehow in their own way, following their logic and specifics. Modern Western culture and worldview are based primarily on science, which presents a specific picture of the external world and claims to explain the process of cognition itself, its various methods, and all other aspects of human existence. Other forms are recognised as secondary and incomplete compared to science since they do not meet science's cognitive criteria. Another suggestion is that they reflect other equal beings to which scientific criteria cannot be applied (Akerlof, 2020).

The Main Features of the Modern Philosophical Paradigm of Economics and the Legal System

Actually, in modern society, science, art, religion and myth divide spheres of influence and application among themselves: science gets to study the external material world and build an objective picture of the world. Religion is the sphere of spiritual requests, and specific mythical ideas take their place in the general consciousness of a person of the twentieth century. In a certain sense, this means the distribution of a hierarchy of ways of knowing effectiveness. The basis of such a hierarchy is the internal (conditioned by internal logic) nature of science, myth, art and religion. The only thing is that this hierarchy does not coincide with the modern distribution of spheres of influence.

The gift economy (or symbolic exchange), common in state states, belongs to the initial stage of the economic history of humankind. Since the principles of the free economy are opposed to the principles of the market economy, the difference between them will most convincingly arise in their comparative analysis. In the gift economy, goods created for exchange and distribution took the form of a personal gift and not an impersonal commodity, as in a market economy. In addition to the gift of goodness, they could be sacrificed or contribute to the establishment of family ties, but in any case, they were not a means of making a profit, and the latter motive was either considered indecent or occupied one of the last places in the value hierarchy both among ancient people and in several modern African countries (Gaut, 2010).

The gift economy is the core around which social and cultural contacts and relations are organised, and the circulation of material and non-material objects of exchange in society is carried out. At the same time, the exchange of traditional ideas served not only as a social tool; it went beyond human communication and covered much broader horizons in society. Gift-exchange relations have ethnic characteristics and, at the same time, basically similar motives. Despite the importance of various life-supporting traditional institutions, the prominent role of their functioning was provided, in our opinion, by exchange relations in general and the institution of donation in particular. In the modern sociocultural reality, an exchange, including a commodity one, is disguised as an exchange of gifts and services. Exchange relations and gifts within a traditional everyday culture are deeply permeated with the peculiarities of ethnic specificity. Meanwhile, the theory of gift exchange makes it possible to determine both the historical origins and the crucial moments of the very nature of the socio-cultural life of a traditional society.

The gift economy played an important role in regulating social relations at different taxonomic levels, an indispensable element of the prestigious economy and sociocultural existence of archaic and traditional societies. Thus, the cultural and anthropological practices of donation and exchange allow us to conclude that the institution of special sociocultural contacts was functioning, the main content of which was a mutual exchange and gifting (Kazanchian, 2020).

The gift economy acts as a polyfunctional phenomenon with translational, regulatory, ethnosign and communicative functions. All of them are interdependent and come from a general function - latent, which eliminates alienation and neutralises hostility and openness of relations of cooperation, friendship and coexistence.

This, in our opinion, is the crucial point of the obligatory exchange of gifts between individuals and groups. People of archaic and traditional cultures were more interested in the magical side of the gift as a pledge of trust and good intentions than just the economic aspect of the gift, invested in its material value. The exchange of traditional cultures of different peoples was a means of satisfying the mutual interests of different parties and resolving conflicts within the ethnic and interethnic levels, which is a significant problem in globalisation. The preservation of the traditional specifics of the culture of gift-exchange relations and its inclusion in life strategies and psychological and pedagogical practices contribute to harmonising sociocultural reality (O'Brien, 1999).

Man as a biological and social being can fully exist only in society. She constantly associates herself with the family, nation, citizens, professsionals, or other members of society. Only man, as a result of the fact that he acts as an individual, can rise above himself as a living being and, proceeding from one centre, as it were, from the other side of the spatiotemporal world, make everything, including himself, the object of his knowledge. This allows her to participate in the creation of society actively.

Only society is able to accumulate, preserve and effectively transfer individual and social life experiences, and ensure the development of a person in various areas of human activity while setting a goal, tasks that exceed the individual needs of an individual, which means that society itself is able to ensure the development of such spheres of human existence, as the creation of the state, science, law, military affairs, environmental ecology, public communication, etc. Social, political and legal institutions are social formations of intellectual origin, which, like material and technical means, are subject to a comparatively independent, physiologically independent from individual individuals or groups of individuals, peculiar development (Mester, 2011).

Without replacing the natural vision of a person, anthropology, as the bearer of the hierarchy of values, performs its ideological function in the formation of a scientific picture of the world and also influences the moral and value choice of the philosophy of law and responsibility for it, in particular, and legal science. The problem of corporality builds a bridge between both components of man as a biological species - natural and spiritual. For man, unlike the animal (for which the absolute dominance of the body is manifested through instincts and nutrition), the body is only an instrument.

Corporeality is at the same time a determining ascertaining element of the existence of human existence in the world, but it is not reduced to the objectivity of the external world. Anthropological analysis of human existence, along with the personal-value context, quite correctly operates with the data accumulated by specific studies in biology.

The use of a legally axiological approach is associated with the emergence of natural law convictions, with the difference between natural law and positive law. Law in its axiological dimension acts as a strictly defined form of legal values, as a specific form of legal being, different from all other (moral, religious, etc.) forms of being and value forms (Ortynskyi, Slyvka, Scotna, Levytska, & Shcherbai, 2021).

Thanks to the values of the philosophy of law and economics, like any "mechanism", it receives its content since the consciousness of the subject of law is directed to values as to its object. Thanks to them, the moment of indifference in the behaviour of the legal subject is removed, and permissions, prohibitions and correspondences of being are formed. The status of values in the philosophy of law and law can be acquired by various facts and phenomena of material and ideal nature: material objects and goods, social relations, human actions, volitional phenomena (motives, incentives), ideas, ideals, goals, social institutions. They are legal values since they underlie law and the rule of law, act as the basis for the ideological justification of the norms of law, are fixed and protected by legal norms, and constitute the goal of the philosophy of law and eco-

nomics and its institutions.

These principles, ideals, and phenomena are values to the extent that they are associated with the human face. Humanisation-legal values have the form of legal rights and freedoms of the individual in their individual and collective manifestations. Human rights themselves also acquire the status of essential values. Each expresses a specific side or manifestation of human existence as a natural and social being. Taken together, they characterise a person as the highest value, as the focus of all values. Consequently, humanisation-legal values are developed, proceed from the concept of personality and are a reflection of law in complementary polar moments. Obviously, they strengthen social and legal unity and the integrity of society, preventing possible destructive influence from outside (O'Brien, 1999). They are gradually formed from the choice of certain types of behaviour and experience in society, formed as universal social values, arising as a set of everyday life, habits, and specific forms of behaviour, and transmitted from generation to generation as behaviour patterns. Subsequently, they are fixed in normative neoplasms (traditions, rituals, and standards of behaviour approved by society). As a result, they contribute to forming certain psychology of a person, society, or mentality.

Today, in the field of economic relations, the active principle of understanding a person is insufficient and must be supplemented with an ontological approach, which does not proceed from a subjectively objective understanding of a person's relationship to the world, but appeals to deeper levels of human existence. The tangible signs of the boundary of human existence encourage the formation of a new philosophical paradigm. According to him, a person is conceived in organic unity with the surrounding reality and expresses the interdependence (coevolution) of the development of the world and man. The anthropologization of economic problems is manifested in the fact that the scientific mind is interpreted not as an external force but as a spiritual and intellectual internal factor in the self-development of a person in anthropocultural existence, a kind of constructor of the future from the standpoint of anthropocultural practices. This is not about cognition as a reflection but as a result of a dialogue between a person and the world when the presence of an observer-subject is a necessary objective condition for establishing the truth. At the level of synergistic disclosure, the concept of "experimental dialogue" takes the form of a new strategy of cognition, a strategy of participation. Both man and the world around him are subject to common synergetic laws and can be considered as structural components of a single self-organising process. The only difference is that a person acts as a system capable of distinguishing the past and future of this process. Thus, a person ceases to be a factor from which scientific knowledge must necessarily be distracted, and the very image of science acquires human dimensions (Kryshtanovych, Golub, Kozakov, Pakhomova, & Polovtsev, 2021).

A change in the economic paradigm should transform not just the transformative-consumer attitude of a person to the world but, above all, give this attitude a human-dimensional, spiritual and moral scale. Moreover, there is a goal to reconsider the roles of man and the world in the unrestrained technological progress, which for some reason is unconditionally considered a civilisational and often even a criterion for the cultural and humanitarian progressiveness of societies. We are talking about the attitude to the world not only (and not so much) as a source of satisfaction of the utilitarian needs of a person, the unconditional basis of his existence and the development of society, but first of all as a source, the basis for the affirmation of the human in a person of higher moral and spiritual values. At the same time, a person becomes an element of self-development of the world as a system. A human should not be thought of in opposition to the world, and he should be considered in a broad socio-natural and sociocultural context. The ideology of stable development, according to which the desired state of society is not so

much growth as dynamic balance, is productive in the development of economic problems.

In modern civilised society, the law is not only an instrumental value - the value of a "tool" for resolving social contradictions in various spheres of society, but also an emancipating, developing tool that acts as an intrinsic value of economic and legal relations (Yasmi & Aminullah, 2021). Based on humanistic principles, legal values are deontic by nature and serve to create, reproduce, and strengthen social order and discipline to harmonise the interests of various social groups of people. In this sense, the law in the life of a person and society acts both as the basis of its self-creation in the course of the historical process, as a form of realisation of human creativity, and as a guarantee of freedom and protection from barbarism and injustice. An analysis of the humanistic nature of legal values and their hierarchy and the identification of the value of law allows us to justify the humanistic idea of law as an idea of freedom, justice and consideration of law as a form of freedom.

Indeed, there are special interests and claims in each subsystem of social relations. Therefore they must find their fair formulation, satisfaction and protection in the law. Moreover, this is possible only because justice does not merge with these claims and is not a normative expression of one of these interests. It, representing the universal legal principle, rises above all this particularism (the desire of certain parts of the whole to realise their interests). The unified legal regulation and justice scales weigh and evaluate them formally - equal and equally fair for all legal yardsticks (Slabouz, Butko, Mozhovyi, Nikitina, & Matoryna, 2021).

Philosophical anthropology, as a particular area of interdisciplinary scientific knowledge of philosophy, jurisprudence and other anthropologically oriented sciences, can provide a person with the status of an object of its scientific research and determine the status of the subject of economic and legal research to various aspects of the relationship "man - society – law". Consequently, a synergistic combination of the relevant achievements of these branches of scientific knowledge of economic and legal relations will contribute to a much deeper study of the topic of man and society and their relationship in law.

One of the central problems of legal anthropology as part of philosophical anthropology is the identification of the anthropological premises of legal theory. The study of this issue is possible because there is a regularity in determining the correlation between "image of a person" and "image of law". Its essence lies in the fact that this or that "image of law" (legal understanding), as well as the legal system defined by it, are guided by a specific "image of a person" (the concept of human nature) and start their countdown from it. The basis of the methodological paradigm of economic and legal relations is philosophical rationalism, positivism, and philosophical and anthropological trends, through which the idea (essence) of law is recognised (Hołub & Duchliński, 2016).

The philosophy of law enables the subjects of cognition to direct their intellectual efforts toward the general problems of the existence of legal reality and its essential contradictions. Revealing problematic areas of reality and relying on certain ideological principles, she builds philosophical models of legal phenomena, explains them and interprets their essence.

Discussions

Discussing the results of the study, it should be determined that the philosophical and anthropological conceptualisation of economics and law as a semiotic system and a factor of cultural shaping at the intersection of the world of work and the lifeworld contributed to overcoming the limitations of the narrow economic approach in the theory of modern economic science, in particular, finance as an abstract semiotic system, in which some symbols point to others, forming a chain of dependencies between elements. These system elements interact with sociocultural reality, responding or not corresponding to its facts; the mechanism itself and the

reasons for such conformity/discrepancy remain behind the scenes, and it is impossible to understand it within purely economic theories.

Based on the philosophical and anthropological analysis results, the critical characterising elements of the economic and legal system in the culture and society were identified. We can come to the result of the analysis that semiotic analysis shows that money is a critical element of the modern specialised economy. It performs several functions, one of which is the exchange function in relations of directly economic and indirectly sociocultural nature. First, modern economic theory is a complex semiotic system, where money is its key seme. They are similar to the words of the spoken language: language is the primary semiotic system within which a person lives and actually thanks to which he becomes a person, while finances and money are a subsystem of the semiotic system of language. The further development of economics and law is due to the transformation of money, which becomes more and more abstract: from money objects to purely virtual money.

Conclusion

Summing up, it should be noted that since money is a crucial element of a modern specialised economy, in which they perform a variety of functions, the basis of which is the function of a measure of exchange, the question arises of the causes of the phenomenon of money. These reasons can be identified based on semiotic analysis. Modern economic theory is, first of all, a complex semiotic system; money is the crucial seme of this system. They are similar to the words of the spoken language - language is the primary semiotic system within which a person lives and actually thanks to which he becomes a person, while finances and money are a subsystem of the semiotic language system. If their primary function is the function of a measure of exchange, then their primary function and the root cause of the appearance of the phenomenon of money as such is the function of a measure of debt. The idea of duty and bestowal, retribution, and retribution appears at the stage of the gift economy. In fact, these ideas make it possible. In the transition to an economy of profit, the need for calculation arises, and money becomes the measure of debt calculation. Despite the plurality of its approaches, the system of modern economic and legal concepts has a common semiotic (and axiological basis). Within it, money gradually acquires the functions of a measure of profit; and since they are a crucial element of this system, the idea of profit and its search builds the basis of all paradigms of classical economic theory. These theories are based on the ideas of cultural anthropology and, in particular, on economic and legal anthropology, which is based on the idea of homo economics, an economic man. This idea and concept act as a methodological setting, which is the key to analysing economic theory as a semiotic system, which is often divorced from fundamental economic processes.

Mastering the methodology of anthropology in jurisprudence allows to expand the horizons of modern legal science and practice significantly. For example, one of the promising branches of legal science - legal conflictology – borrowed from philosophical anthropology and anthropology of law a methodology for a comprehensive analysis of such fundamental human legal relations as family relations, property relations and land relations, contractual relations, punishment systems and the criminal system, and also ways to resolve conflicts in different types of societies.

Consequently, one of the main tasks of using the achievements of philosophical anthropology is to substantiate the idea of law as a particular normative order arising from ideas about the essence of man or human nature. This implies an answer to why the political sphere in human life (which is understood as a civil, universal existence with other people) necessarily requires the existence of law and why such a legal registration of this sphere is possible. What is needed here is a justification for the fact that people have a relationship of dominance within which they

are subject to specific rules and can be forced to comply with them.

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DOI: 10.24234/wisdom.v2i1.777
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DIGITAL ECOSYSTEM AS A MODEL OF EFFICIENT AND SAFE INTERACTION OF ACTORS IN VIRTUAL SPACE

Abstract

In the article, the authors emphasize that the formation and development of the digital economy is an inevitable and objective process of society's transition to a new technological order. To maintain their competitive state, business entities need to transform the existing business model by integrating smart technologies, the Internet of Things and artificial intelligence into its basis. The emergence of new formal and informal institutions should regulate the rules of behaviour of economic agents in the digital economy. To this end, it is necessary to form and develop a legal framework that regulates the relationship between customers and owners of digital platforms. We believe that digital ecosystems will have a certain interest in the new society. Unlike traditional models of interaction between actors, digital ecosystems will create a single information field and a new form of constructive cooperation and coordination between participants in the virtual space. The state should become the initiator of creating this kind of digital ecosystem, which will make it possible to implement the mechanism of reasonable digital protectionism, the purpose of which will be to protect the interests of users and owners of digital platforms in cyberspace.

Keywords: Innovation, innovation infrastructure, regional development, quality of life, innovation policy, business incubator, venture capital fund, region.

Introduction

At the beginning of the 21st century, information and telecommunication technologies are increasingly being used in all critical areas of human life - in business, state and municipal government, and everyday life. Digitalization literally revolutionizes all sectors of production, destroying traditional technological processes of creating goods and services and their delivery to the end consumer, develops digital channels of communication with the external and internal environment, determines the nature of a person's professional activity and shows the vector of the evolution of his skills and abilities, seeks to reformat the structure of society and checks the strength of established values. Competencies such as network self-identification of a person, digital literacy, ecological thinking, risk-based goal setting, continuous personal self-development, and several others are becoming more and more in demand.

In addition, the use of IT removes spatial and temporal restrictions when making commercial transactions, increasing the availability of goods and services anywhere in the world and at any time, forms new models for managing economic entities and territories, the purpose of which is to combine the economic, political, social and scientific life of the state and its subjects into a single whole for further growth of the well-being of the population in the context of the development of the digital economy.

The aspiration is to increase labor productivi-

ty and minimize transaction costs for control and management; that is the ultimate goal of society's transition to a new technological order. This is achieved because in the new business model, the interaction between the customer and the person providing goods or services is carried out without intermediaries, and wherever the process can be formalized and expressed using algorithms, robotics is used, which, unlike humans, can work in the 24/7 format, without rest and loss of productivity

Indeed, today artificial intelligence is still developing and is yet subordinate, imitating human behaviour, performing tasks and gradually learning based on the information collected. However, its successful development in the future will allow it to have more advanced capabilities than humans have. As a result, the question naturally arises about the role and place of a human being in the new digital society. Will humans retain their competitive advantage in the world of high technology? Or will the most terrible prophecies of science fiction writers about the war between robots and people come true, and will human labour be replaced by machine labour? Or is it still possible to establish more constructive forms of interaction between natural and artificial intelligence? (Tinyakova, Morozova, Gunin, & Kireeva, 2019; Tinyakova, Morozova, Ziroyan, & Falkovich, 2018; Tinyakova, Morozova, & Gunin, 2019; Tinyakova & Morozova, 2018). All these and several other issues actualize the need to study the essential features of the digital economy and the practical use of high technologies in various spheres of human life.

Methodological Aspects of the Formation of a New Management Model in the Digital Economy

For the formation of a scientific hypothesis and the choice of a theoretical and methodological basis for research in the field of a new management model in a digital economy, the fundamental works of domestic and foreign researchers in the field of informatization of the modern society, the development of network and virtual forms of management are of great interest.

We emphasize that management will be effective only when considered a well-organized information process. Just as matter and energy are the substances of the physical world, information underlies effective management and informed management decisions.

The study of the general patterns of obtaining, storing, analyzing and transmitting information in complex systems to control and regulate the processes occurring in them is carried out by such science as cybernetics. It is nourished by other sciences and tends to self-develop. One of cybernetics and artificial intelligence theory founders is the American mathematician N. Wiener. Another "father of the information age" is justly considered an American engineer, cryptanalyst and mathematician, K. Shannon. In this regard, in the study of control systems, the general methods used in cybernetics are "system analysis", "operations research", etc.

To make decisions in the field of managing socio-economic processes in a complex dynamic system, one should consider a vast number of different factors that have a multidirectional effect on the system under study, to develop various scenarios for the sequence of events and choose from them the option that will ensure the balanced development of the leading sectors of the economy. It is difficult to formalize the task of considering and assessing the impact of feedback on the state of a complex system, which is the territory. All this predicates the necessity of developing simulation models and their integration with databases.

Simulation modelling tools and methods make it possible to transfer the collected information from the category of inert material to the evaluation process, thereby increasing the efficiency and validity of making managerial decisions. The collected information, as a rule, is of a quantitative and qualitative nature, which complicates the process of its analysis and evaluation. In this regard, optimization-qualimetric control models will be of particular interest. Theoretical

and methodological aspects of this problem can be found in the works of the following authors: R. Bellman (1957), R. G. Brown (1971), M. T. Czarnecki (1999), R. Dorfman, P. A. Samuelson, R. M. Solow (1958), Q. W. Fleming, J. M. Hoppelman (1996), P. Morse (1958), H. C. Tijms (1994). The effectiveness of their use will lie in the possibility of variable management under conditions of uncertainty and in assessing the quality of strategic decisions made before their practical implementation.

Thus, a new virtual model for managing socio-economic development in the digital economy conditions, based on optimization-qualimetric modelling, will make it possible to increase the flexibility and efficiency of the management process, move away from hierarchical management systems and form a horizontally connected network environment for the free flow of technologies and innovations between sectors and territories.

The Process of Establishing a Digital Economy: Triggers and Limitations

Issues of digital transformation and the future of the world order are becoming a topic of discussion at authoritative global platforms: The United Nations Conference on Trade and Development (UNCTAD) Digital Economy Report (2019); The United Nations Conference on Trade and Development (UNCTAD) Trade and Development Report (2019), World Economic Forum in Davos (World Economic Forum in collaboration with McKinsey & Company: Fourth Industrial Revolution Beacons of Technology and Innovation in Manufacturing, January 2019; The Global Competitiveness Report, 2018). Such close attention to the problem is not accidental. Humankind is on the threshold of a new economy based on the global analysis of information and the intense development of telecommunication technologies. Information is gradually becoming the main asset. Indeed, it has always been of crucial importance for the development of society. However, today, obtaining and processing information is turning into a strategic resource for developing socio-economic systems of various levels of complexity. To describe the processes taking place in society, Nicholas Negroponte, in 1995, proposed a new term – "digital economy".

The point of view that modern society is on the verge of a new technological phase of its development is also emphasized by Klaus Schwab, the President of the World Economic Forum in Davos. He writes that "we are at the origins of a revolution that will fundamentally change our lives, work, and communication. In terms of scale, volume and complexity, this phenomenon, which I consider the fourth industrial revolution, has no analogues in all previous human experiences. We have yet to realize the fullness of the pace of development and the scope of the new revolution" (Schwab, 2019, p. 9). "The Fourth Industrial Revolution is not just a name for the changes brought about by technological progress… It is an opportunity to frame the public debate that helps everyone, from politicians and technology leaders to citizens of all countries, from all social groups and at all income levels, to understand how powerful, promising, interacting technologies affect our world and to learn how to direct this influence" (Schwab, 2019, pp. 18-19).

In the scientific world, heated discussions have also unfolded about the modernization of a human being, increasing his natural capabilities to harmoniously integrate into the new digital society and assessing the ethical consequences of such intervention. In particular, Anders Sandberg's research concerns the study of cognition, neuroethics and global catastrophic risks caused by such research and the publication of its results (Lewis, Millett, Sandberg, Snyder-Beattie, & Gronvall, 2018; Pugh, Pycroft, Sandberg, Aziz, & Savulescu, 2018).

Elena Postigo Solana, in her interview, emphasizes that convergent technologies - artificial intelligence, genetics, nanotechnology and neuroscience - offer simply fantastic opportunities. However, they also impose great responsibility

not to harm future generations. All this is done by bioethics. Issues such as gene editing or the application of artificial intelligence in healthcare will be on the agenda in the coming years. She emphasizes that we must be wise and prudent enough to self-regulate and follow the classic saying: "first do no harm" (Entrevista a la Dra Elena Postigo, Directora del Instituto de Bioética de la U. Francisco de Vitoria, 2021).

Rafael Monterde Ferrando in his study "El ocaso de la humanidad: la singularidad tecnológica como fin de la historia" notes that as a result of technical influence, a man is transformed into raw material for the production of a superman. This kind of improvement requires a reassessment of all human values, especially those related to the protection of human dignity (Monterde Ferrando, 2021).

Thus, the progress and transition of society to a new technological foundation actualizes the question of the need to improve the human being himself, turning him into a post-human, freed from suffering, illness, ageing and death. Nevertheless, will interventions of this kind not lead to the loss of a person's species essence? These and a number of other questions remain to be answered.

Continuing, we note that the technological foundation, the core of the new digital economy, is the developed infrastructure of communication channels and the competitive production of goods and services in the field of IT technologies. The information and telecommunications market allows the interaction of market entities in the information space and stimulates the creation of unique, previously non-existing market segments (mobile communications market, software, data centres, etc.). Without its development, it is impossible to build a full-fledged digital society.

Today, the information and communication technology market is a reasonably dynamic sector of the economy, although the pandemic has seriously tested its strength. Thus, according to the analytical company Gartner, the volume of the global market of information and communication technologies in 2020 decreased by 3.2% compared to 2019 and amounted to $3.69 trillion (ICT (world market), 2020). This is because, in pandemic conditions, according to John-David Lovelock, vice president for research at Gartner, top managers of leading companies have to find a balance between cost savings and the expansion of technological infrastructure.

However, after the global shock and chaos in 2020, companies will have to increase their use of IT technologies, especially in the field of business communications, in order to maintain their competitive positions and financial stability. This hypothesis was confirmed in 2021. The ICT sector has proven resilient, driven by the growing demand for digital goods and services among the public and businesses. This trend will continue in the future since the ICT sector is assigned the role of a driver in the digitalization of the economy and the social sphere.

Even after removing restrictions caused by the pandemic, most companies preferred to maintain hybrid forms of work, with fewer people in the office and more remotely. This will allow companies to reduce rental costs and operating costs by closing physical branches, offices and salespoints. At the same time, a flexible office and new conditions for organizing workplaces will require new technologies for automation, technical support and information security, which are additional costs. Furthermore, it is not yet clear how they will affect the company's financial budget. Will the organization benefit financially from the closure of offline premises or lose?

Nevertheless, one thing is sure development in the digital economy will be impossible without the company's presence in the online space. The leaders of companies that cannot build their strategy in the virtual space will lose out in the competition, as the traditional market will gradually become a thing of the past, turning into an anachronism.

Conceptual Model of Interaction of Actors in Virtual Space

We believe that the new business model should organically integrate "smart" technologies and artificial intelligence, which can transform information opportunities into new services and, accordingly, into growing income. Such a new model can be a digital ecosystem, which should not have restrictions in the form of geographical boundaries. It is designed to provide interaction to millions of customers located in any time zones.

The sizeable Russian company Sber has already announced the creation of a new generation ecosystem on its platform, which is based on the following principles: customer centricity, an open API mechanism, machine learning and automated customer service, data processing, and a number of others.

In our opinion, the digital ecosystem, unlike the traditional one, will be aimed at creating a single information field and a new form of constructive cooperation and coordination between participants in the virtual space, which is characterized both by cooperative relations and competition (Fig. 1).

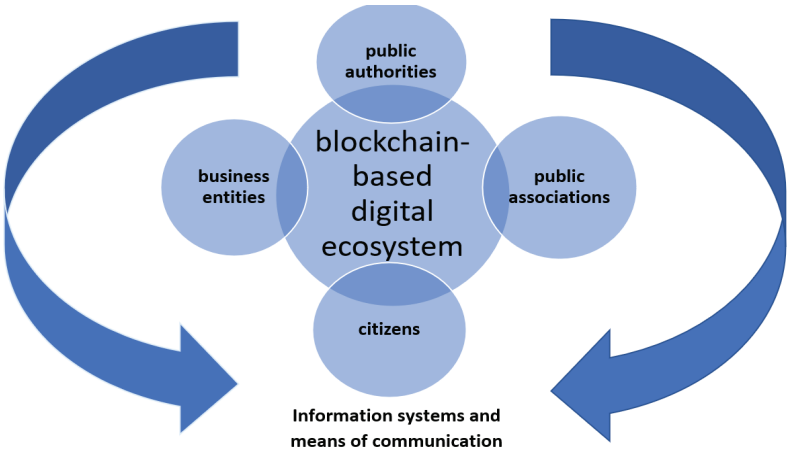

Figure 1. - Model of Interaction Between Actors in the Digital Ecosystem of the State.

The creation of such an ecosystem under the guidance of the state will make it possible to implement an intelligent digital protectionism mechanism that will protect the interests of users and owners of digital platforms in cyberspace.

The cause for this is that mass digitalization leads to the fact that an individual or business entity will need to log in to various digital platforms, provide their personal data and transfer certain rights to their support in various life situations. Thus, a "digital twin" of an economic entity or an individual will appear in the virtual space and new forms of citizenship – digital or virtual. Naturally, the question arises about protecting personal data and commercial information in cyberspace and the legal consolidation of the rights and responsibilities of owners of digital platforms that collect unique information. As answers to these questions, legal acts are needed to institutionalize the rules for agents' behaviour in the virtual space.

In addition, special control should be over data representing the country's national security. Furthermore, this is a series of data accumulated by public authorities. Not all of them can be open, and some information will have the status of confidential, intended only for executives who make management decisions. The leakage of this kind of information can cause a significant stroke to the country's national security. To solve this problem, it is necessary to implement intelligent digital protectionism that regulates the norms of

behaviour and protects users' interests and owners of digital platforms in the virtual space.

To protect data, the digital ecosystem must be implemented using blockchain technology, or as it is sometimes called, the "Internet of Values", which, unlike the existing ones, already has security and high reliability at the database level, which is especially important for the efficient operation of public authorities, accumulating and exchanging confidential information (Blockchain (European market), 2020).

A digital ecosystem based on blockchain technology will make it possible to harmonize and integrate various databases, registries, cadastres, and registries developed by various public authorities, thereby launching the implementation of the concept of cross-chain interaction. Creating such a system will reduce the time and financial costs for collecting, processing and transmitting information necessary for implementing their functions by public authorities in cooperation with citizens and business entities.

Thus, the emergence of blockchain technology is comparable in scale to the invention of the Internet, and therefore the refusal to accept it can slow down the pace of state development. Therefore, Russia's interest in this technology is not accidental.

Conclusion

According to experts, the countries that are the first to introduce a new management model based on new IT technologies will receive significant competitive advantages in the global economic space. The expediency of creating a virtual model for managing socio-economic development in the form of a digital ecosystem will allow, at lower cost and more clearly, to show how the real object interacts with the external environment, as well as to identify the factors and conditions under which this interaction will be optimal. Unlike traditional modelling, virtual geoinformation modelling will make it possible to bind to the terrain, identify spatial objects, and visualize spatial data using various IT tools. All this will allow, without high costs, to consider various ways of developing the territory, distributing productive forces, regional planning, reconstruction and building of individual parts of the territory. Using virtual models, it is possible to identify shortcomings in the design and possible consequences of the decisions made for the environment and the development of the social sphere of the territory already at an early stage. Working with virtual and augmented reality opens up opportunities for the emergence of new forms and ways of distributing innovative products. Without such a system, socio-economic development will occur spontaneously, ultimately leading to fundamental changes in the geopolitical sphere and threatening Russia's national interests and security.

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DOI: 10.24234/wisdom.v2i1.774
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INTRAMUNDANE ASCETICISM AS A BASIS FOR ORGANIZING IRISH MONASTERY IN THE EARLY MIDDLE AGES

Abstract

The work aims to study the features of the organization of the early medieval Christian society based on the development of intramundane asceticism as the basis of worldly activities with the aim of the natural arrangement of the world under the commitment to the conceptual vocation. The need to update the research study on this issue of inciting contradictions in ideas about the essence of Irish Christian culture. The chronological scope of the study is limited to the period of the 5th-11thcenturies. The lower limit of distribution with the birth of the Irish Christian mission and the appearance of the first missionary monks. The upper one is limited to the 11th century - a period of weakening of the Irish Church, rains of Viking raids, and later - the Anglo-Normans.

The paper reflects the main features of the formation of Christian culture in the territory during the early Middle Ages, traces the evolution and reveals the characteristic features of the dynamics of the culture of Irish monasteries, and reveals the role of Irish monasteries in the development of modern culture. The article uses general scientific methods and methods of historical analysis.

Keywords: monastery, Ireland, intramundane asceticism, European culture, Christianity, early Middle Ages.

Literature Review

The question of the development of Irish monasticism based on inner-worldly asceticism has been little developed in the works of modern scholars.

Scientific interest in the culture of Ireland in the Russian public church in the 19thcentury. This topic was included in the work at the end of the 19thand beginning of the 20thcentury, performed by the authors: L. P. Karsavin, O. A. Dobiash-Rozhdestvenskaya, M. E. Shaitan, G. E. Afanasiev. In the Russian scientific literature of the Soviet period, issues related to mythology, poetics, and the study of Celtic languages are broadly disclosed. In the years described above, issues related to the pagan heritage of the ancient Celts, Celtic mythology, and the purpose of the Celtic peoples are considered more. This circle of questions was replaced, for example, in the works of S. V. Shkunaev.

In the Russian-language scientific publication devoted to Ireland, we have come across the work by G. V. Bondarenko, where much attention is paid to the Celts' mythology and pagan cultural heritage.

A fascinating attempt in the study of early medieval Ireland is studying the theme of the pilgrimage of Irish monks. This topic is reflected in the dissertation work of F. S. Corandea.

Works by T. A. Mikhailova are devoted to the semantics and features of the Old Irish language, issues of mythology and folklore and Irish culture and history. The works of V. P. Kalygin and A. A. Queen.

Other Russian-speaking Celtologists also

work in work by O. A. Zotova, A. R. Muradova, N.Yu. Zhivlova (Chekhonadskaya), N. A. O'Shea (Nikolaeva) and others.

Although the issues of the Celtic, particularly Irish heritage research, aimed at religious research, in particular, have been covered, the task of a holistic reconstruction of the cultural characteristics of the early medieval Irish monasteries, identifying their characteristics in the centres of medieval Christian culture, has not been set yet.

Main Part

It is assumed that the emergence of Irish monasticism is associated with asceticism, namely with one of its types – "intramundane asceticism". This type of asceticism is intended for worldly activities to rationally arrange the world based on a religiously understood vocation (Donini, 1989). Here, the central place is occupied by the individual's way of life and the ways of salvation, which are purely individual. This means of saving and changing the world was chosen in early medieval Ireland.

The organization and hagiographic dispensation of an ordinary life necessitated the obedient execution of the rule and obedience to the abbot, the introduction of discipline and uniformity (a visible expression is in the uniformity of clothing and the daily routine).

Religious philosopher Lev Karsavin noted that the rank of abbot was often inherited (through numerous cousins) within the dominant, patronizing (endowed) family of the monastery. As the head of his monastery, the abbot led the entire Christian life of the clan, which made it possible to form original monastic churches independent of one another and of Rome (Karsavin, 1912).

According to the charter, life in the monastery was an "ordinary" life, without extremes, excesses, fasting, vigils and prayers with daily two meals a day and sufficient time for sleep. At the same time, the satisfaction of basic needs (in housing, clothing, food) was carried out at the expense of common funds belonging to all. This was the realization of the idea of the community of property. Physical labour was not considered a necessary tool of asceticism or a means of maintaining life support but was an element of spiritual ethics arising from the departure of a Christian from worldly life. Furthermore, obedience to the abbot was seen not so much as an ascetic feat of overcoming one's own will but from the standpoint of the functionality of the community (Exle, 2000). Through preaching, illuminating books, the feat of medicine, night vigils, simplicity in food, and short-term fasting, "intramundane asceticism" was realized as a personal way to save the individual within society with a change in society itself based on religious unity. The cenobitic way of life also established the limits of asceticism (Elanskaya, 2001).

The origin of monasticism in Western Europe takes place under the strong influence of the previously established Eastern monasticism, which received a warm response in the hearts of Christians. However, this influence is not exclusive. Persecution and persecution force some of the eastern monasteries of Syria and Palestine to flee to Romanesque Gaul.

However, the monasteries themselves in Western Europe appear much later due to different rates of Christianization (Donini, 1989). Subsequently, the origins and forms of monasticism will impact the church's way of life and organization, both in Europe, Ireland, and Russia.

The uniqueness of the development of Christianity in Ireland lies in the fact that the Romans never conquered Ireland: after the Romans left Britain and the pagan Jutes, Angles and Saxons invaded the island, the Christian Church of Ireland found itself in complete isolation from the rest of the Christian world. It was forced to seek other ways of development. This period gives rise to a particular development of Irish Christianity, bringing it closer to the beliefs of the Druids. The spread of Christianity throughout Ireland was facilitated by the development of monasticism (a conceptual diagram of the development of Irish monasticism is shown in Fig. 1).

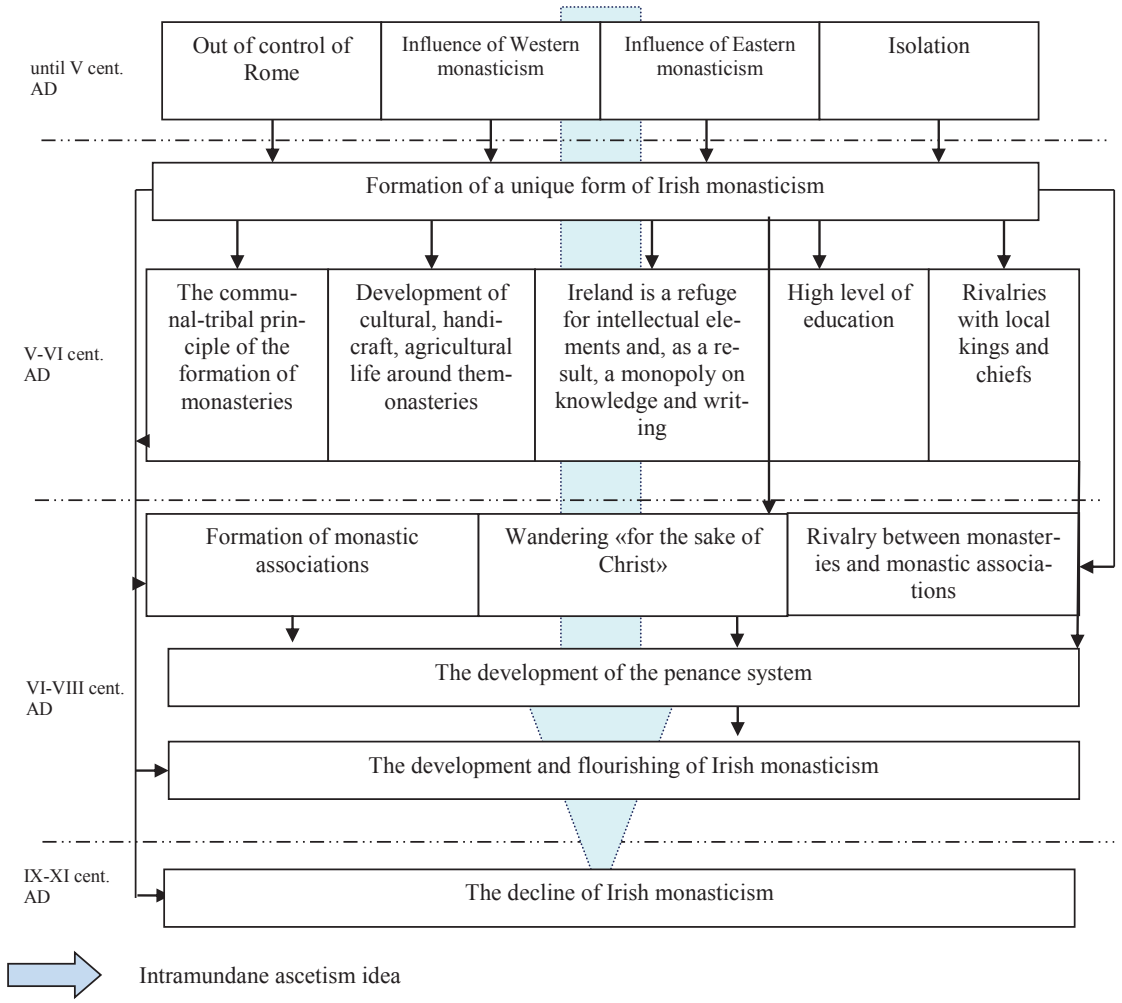

Figure 1. Conceptual Diagram of the Development of Irish Monasticism.

The composition of the monastic brethren is most often found in the habitat of the territory in which the monastery was located. Therefore, many members of the monastic community were tribesmen and relations with each other were built on a family basis managed by the entire head of the clan or clan, who converted to Christianity, secured the consent and support of the genealogies, allowed the monk-missionary to found a monastery and build a church on the territory of his homeland. Part of the communal-tribal lands was transferred to the ownership of the monastery. Such a monastic community was called the "tribe of the saint" (Uskov, 2001).

By the end of the 6th century, Irish monasteries already covered large social centres around which the districts' entire cultural, craft, and agricultural life was built. It is essential to note that there were no cities in Ireland. The whole life of the islands rested on a system of farms and small villages. Therefore, the first Irish monasteries became something like proto-cities. In ancient Irish texts, many abodes directly refer to "civitas", from the Latin word for "city". Moreover, the abbots of such monasteries refer to themselves as "princeps" - a Roman term for criminal prosecution against a senator, proconsul or even an emperor (hence the word "prince").

A unique precedent in the history of the Middle Ages. In the conditions of unrest on the continent, during the period of the Great Migration, many intellectual elements found their refuge in

Irish monasteries, remote from the bubbling European cauldron. By the beginning of the 6th century, the usual Roman administration, the institution of state advisers and other state structures collapsed on the continent. Under such conditions, the virtual monopoly on knowledge and the desk of the Irish abbots are indispensable advisers at the courts of leaders both on the island and on the continent.

The Irish abbots were well aware of what they treated in Europe. Collecting the remnants of ancient culture in their cloisters, assimilating the church name of the Roman polis to the monastery, attaching the title of Roman magistrates to themselves and turning the robes of consuls into a cassock, they naturally acquired the Roman Empire virtually. For this reason, they will play a vital role in the 8th-9th centuries, when the Carolinas began to "restore" the Roman Empire, collecting the ancient heritage literally bit by bit (Dobiash-Rozhdestvenskaya, 1917).

On the one hand, this state of affairs allowed the Irish monastery to increase its spiritual potential, influence the political climate, organize missions, and maintain a high level of education. By the beginning of the 7th century, many royal offspring from the continent went to study in Irish monastic schools, known throughout Europe for their good manners and education. On the other hand, the abbots of the Irish monasteries, having acquired the title of Princeps and leading large, by the standards of their time, industrial and financial centres, began to compete with the "flaith" – local kings and leaders. Soon the process of turning monastic settlements into cities, and abbots into princes, begins to be reflected in the internal monastic order.

An interesting feature of the Irish Christian tradition is the involvement of entire monastic groups in non-territorial associations subordinate to the jurisdiction, confederation or parousia of their founder and his successors. Monasteries established strong allied relations among themselves, forming the basis for creating church federations, similar to federations of tribes and clans. Often the nature of these relationships takes the form of subordination or dependence (Moroshkin, 1872).

Bishops who lived in them or wandered around the country, who did not have church authority, were subordinate to the monasteries (Dostopochteniy Beda, 2001). The clan's territory usually determined the bishop's diocese, and he himself was in kinship with members of the clans. That spiritual positions became the monopoly of particular families. It should be noted that the Irish Christian tradition often involves the combination of the office of abbot and bishop in the person of one person (Sokolsky, 1882).

Competition between monasteries, which by the 7th-8th centuries.acquired a colossal influence not only on the spiritual but also on the political life of society, sometimes went beyond the acceptable. We meet repeated examples of merciless battles between monasteries for the right to possess a high status or a revered shrine.

Monasteries played a significant role in the politics of the kings. In this regard, their exclusivity claims had unfortunate consequences. Many Irish kings, protecting and guarding the abbeys on their territory, easily crushed and devastated the same monasteries on the territory of a defeated neighbour. They were not against Christianity as such but against a rival monastery that had become the stronghold and symbol of their enemy.

In addition to conferring an exclusive status, the ambitions of large monasteries also served another purely spiritual purpose. As already noted, city life inevitably influenced the monastery. The strictness of rules and regulations weakened. In such conditions, the assignment of great saints to the abbeys was intended to preserve the old ideals. It is not in vain that in many statutes of the 8th century, one can find complaints of abbots that the high requirements bequeathed by the founding fathers are no longer observed.

All these prevailing conditions contributed to the formation and development of the ancient Irish penitential system. It was characterized by the absence of the influence of bishops as representatives and custodians of ancient ecclesiastical

law. Irish bishops and presbyters could not significantly influence the punitive system of the church since they belonged to a well-known monastery and were subordinate to its abbot (Sokolsky, 1882).

The organization of monastic discipline and its rules are also of particular importance. The Irish Church provides for excommunication in extremely rare cases, while public penance is not applied at all. A special place is occupied by private, personal repentance. It represents the performance of individual pious deeds, the composition of which was determined and imposed on the penitent by the priest after a secret confession. The ancient Irish sacred canons, collections of penitential rules, the so-called penitentials and synodiks (Pashuto, 1968). These works contained an accurate quantitative and qualitative idea of the measure of atonement for a specific sin. At the heart of the penitential system lies a punitive principle, where individual penitential deeds of piety have an independent significance in relation to all categories of sinful deeds, both grave and light.

In contrast, in the universal church, pious penitential deeds have acquired independent significance only concerning the lightest sins. The punishment system extended to monks and lay people in the Old Irish Church. In secular law, a system of retribution also operated - the offender must compensate the violated right to the offended or his relatives.

Moreover, sin is presented in terms of the rights inherent in God in relation to people; therefore, their violation should give God a certain recompense so as not to have retribution in the afterlife (Philip, 1961). Subsequently, both punitive systems - secular and ecclesiastical - begin to be replenished and supplemented by one another. Often secular and ecclesiastical courts were held by the same bodies. Such a close merger resulted in the frequent replacement of pious deeds with a monetary contribution.

In addition to monetary fines, pilgrimage to holy places as a form of punishment is widely used. Thus begins the active movement of the Irish to the holy places in Europe, in the holy land and Syria. The Irish wander in a large group, which is confirmed by the large hospices of Europe, which arose around the 9th century.

The Irish white clergy were family, and the church positions themselves could be inherited (Moroshkin, 1872). The "disciples" were also not subjected to rupture of family relations. Rome condemned this fact because the monks lived in monasteries with families. However, according to the charter, the monks took the family to the monastery in compliance with the rupture of marital relations. Archaeological findings of presbyteries confirm this: temples without four rafters in the nave. Inside the building, there is a wall separating the female and male halves of the monastery - this feature is typical only for Celtic Christianity (Kuzmin, 1988).

Literature remains the main eyewitness of all the events that took place. Its sources help us imagine the Celts' life and way of life before the invasion of the Vikings and later - the Normans. In the seventh, eighth and ninth centuries, Irish monks made records and memoirs of their early saints (Shabanov, 2016). Often, the images of saints were epic by nature and imbued with antiquity's spirit. This is evidenced by the surviving records in the manuscripts of the 12th century and later lists (Celtic Monasticism. Statutes of the Old Irish Church, 2016).

The lives of the saints are filled with information about the construction of monasteries and chapels in oak groves, near springs, along the shores of deaf lakes or on foggy islands far in the ocean. Each monastery built its own small church (usually built of logs). With the number of monks, new small-sized temples were erected, and more spacious ones were not built since the ascetic lifestyle was valued. This was uncharacteristic of the continental Churches with their growing material support. According to the Eastern model, many monasteries arranged secluded places for solitude: a retreat, a desert, where a monk or nun could remain alone for prayer.

The "Life of the Monk Karantok" (XII century) says that the saint, before building a new

Church, threw a portable wooden throne into the sea from a boat, and the temple was laid in the place where the waves carried the throne ashore (Shabanov, 2018).

For the Celts, who did not know the cities, monasteries turned not only into arks of spiritual salvation but also into shelters, where there was a place for both handicrafts and literary work. In a short time, the monasteries grew throughout the Green Isle: Clonmacnoise (Clonmacnoise, founded in 545), Derry (Derry, founded in 546), Durrow (Durrow, founded in 553), Bangor (Bangor, founded in 525), Nendrum (founded between 490 and 497), Glendalough (founded in the second half of the 6thcentury) and many others.

Nevertheless, perhaps the most unusual thing in the history of Irish Christianity is the "wandering for Christ's sake."Even in the time of St. Patrick, wandering monks - peregrines - chose for the sake of Christ precisely such a path of "white martyrdom", in which the need for eternal self-exile was combined with a sense of high religious duty. Sailing off the coast of Ireland, the monks hurried to meet holy places and people unlike them, and, most importantly, they hurried to get closer to God.

The culture of the Orthodox East greatly influenced Irish monasticism. An indirect confirmation of this seems to be the architectural similarity between the Syrian and Irish temples of the 5th-6thcenturies. S. S. Averintsev writes that the Celts perceived themselves as bearers of the Orthodox or "Syro-Coptic tradition" (Elanskaya, 2001).

In the 6th and 7th centuries, travelling Irish saints became a fairly common activity. The most famous were the journeys of St. Columba (Colmcille) to Iona and Scotland, St. Aidan to Lindisfarne and Northumbria, St. Columban and St. Gallus to Luxey, to Lake Constance (Switzerland) and Lombardy.

J. Le Goff calculated that during the 200 years of the Irish mission, about 115 holy men ended up in Germany, 45 - in France, 44 - in Britain, 36 - in the territory of modern Belgium, 25 - in Scotland and 13 - in Italy. If most of the saints are legendary personalities coming out of folklore, then this confirms even better, as Bernard Guillemin noted, what a deep imprint the Irish monasticism left on the mentality and feelings of the Western world. Moreover, this Celtic wandering was a real salvation for Europe, which almost died from barbarian invasions. Europe needed missionaries (Karsavin, 1932).

The monasteries founded by the Irish soon turned into education centres and shelters for wanderers. The Peregrines themselves called themselves "Christian cheering". Their "jubilation" was associated with the triumph of faith, culture and knowledge.

However, from the 730s, Irish missionary work began to be suppressed, and itinerant preachers fell out of favour. They are showered with insults for "wordy deceit" and "cunning deceit". Anglo-Saxon missionaries under the rule of St. Benedict appear on European roads. The Benedictine Rule, ceasing to be one of the forms of monasticism, becomes a way of life (Par excellence) of the emerging church.

Irish monasticism and the Peregrine movement may have directly influenced the monastic orders that arose on the continent in the early thirteenth century. The Dominicans, especially the Franciscans, consciously imitated Ireland's travelling missionaries and preachers in the 7th and 8th centuries.

However, after the 8th century, Ireland began to rethink its attitude towards missionary travellers. Furthermore, the ascetic ideals of "white martyrdom" outside of Ireland have become impossible to realize. "White martyrdom" was replaced by "green". The new monks closed themselves in their cells (as prescribed by the Charter). Some began to search for solitude in their homeland, outside the monastery walls, far from trade routes and, most importantly, away from worldly life. Thus, intramundane asceticism gave way to strict asceticism. Moreover, the invasion of the Vikings led to the final destruction of the practice of peregrines and the disappearance of the traditional early medieval Irish monasticism.

Discussion

The scientific novelty developed by the authors is due to the study of the early medieval Christian culture of Ireland as a holistic phenomenon based on the development of the inner-worldly asceticism that forms it. In contrast, earlier researchers focused only on its individual aspects. The expansion of the scope of the study made it possible to avoid fragmentation in consideration of the topic.

The study contains qualitatively new information about the Christian culture of Ireland, which was achieved through the analysis of a large number of sources, as well as the study of monuments of the artistic culture of the designated period. Appeal to such little-studied aspects of Irish early medieval culture as the interaction of Celtic, Mediterranean and Anglo-Saxon types of culture within the culture of Irish monasteries made it possible to identify new factors that led to the phenomenon of the flourishing of Irish monasteries in the 5th-11th centuries.

Conclusion

Summing up, it should be noted that both the Catholic and Orthodox churches venerate many early medieval saints, most of whom were monks. It was the monastic cloisters that, at a particular stage, became the centres of concentration and development of spirituality, education and culture in the east and west of the Christian world. The early medieval monasteries of Ireland harmoniously combined the cultural traditions of the west (primarily Celtic) and the east, initially emerging under the strong influence of Egyptian and Syrian monasticism.

Irish monasticism filled the socio-cultural niche in Irish society, occupied by the Druid class before the Christianization of Ireland.

The following features characterized Irish monasticism:

- intramundane type of asceticism;
- the desire for education (intensive training of monks at monasteries);
- missionary activity (the foundation of monasteries outside of Ireland and the conversion of pagans to Christianity);
- the emergence of a patriarchal system of management of the monastery with the abbot at the head as a result of the rootedness of family traditions;
- remnants of matriarchy (abbesses headed mixed monasteries; high social and cultural level of abbesses; women's cults, such as the fire of St. Brigid);
- conservatism and the preservation of national traditions, the result of which was a liturgical practice different from the Roman one ("Celtic rite");
- development of penitential practice (transformation of ancient church repentance into private confession).

In Ireland, one can see an example of the synthesis of intellectual culture and religious Christian asceticism, which is of great interest in studying the history and culture of the Middle Ages.

All this served as fertile ground for forming a wonderful, multifaceted and original cultural Christian tradition, which, despite its extinction by the period of the mature Middle Ages, left a noticeable mark in the culture of many European countries.

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DOI: 10.24234/wisdom.v2i1.768
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RISK MANAGEMENT CONCEPT: PREDICTIVE ASSESSMENT IN TRANSHUMANISTIC SPACE

Abstract

At the present stage of realizing the transhumanistic concept, its reflection in various fields of scientific knowledge should be considered, considering the possible risks formed by the transhumanistic space. This concept provokes interest both for its direction and its contradictions. The article considers alternative concepts and tools different from transhumanism in their moral and ethical directionality and based on responsible decisions that take this aspect into account. The concept of risk management is presented based on the diagnostics of orienting indicators that outline the transhumanistic space according to the indicated risk zones. The diagnostic analysis is based on a predictive assessment of the development of the situation, which is formed as a result of using innovative technologies/biotechnologies from the point of transhumanism. Several exact directions for the assessment's development of the situation developing in the transhumanistic space are identified, conceptual decisions that develop such assessment are presented, and the interconnection between the blocks of the methodology for modelling future decisions to respond to emerging challenges of transhumanism is given.

Keywords: biotechnologies, bioethics, risk zone, concept, modelling, uncertainty, transhumanism, human nature, Russian cosmism, ethical principles.

Introduction

The study of the XXI century cultural flow has one big drawback: the Internet suggests a sea of information, and the spreading of data is such that it seems impossible to organize the data so that a complete picture adequately reflects the issue studies. Transhumanism is a cultural movement in a continuous flow and changes subject to global society fluctuations. At first sight, Transhumanism stands for using technologies to improve and overcome human nature (Monterde Ferrando, 2021a). On the other hand, there is the uncertainty of both ethical and political nature when using innovative technologies/biotechnologies, which require a long discussion in society. It is being created a powerful science that contributes to the development of such technologies, a significant part of which is developed by private companies with private financing, which lets avoiding public control. The researched problem is that it is necessary to search for tools that allow managing science and technologies. Considering the social and political consequences of the changes that are declared by transhumanism supporters, it is necessary to focus on the process of forming various kinds of risks in the transhumanistic space, the predictive assessment of which will allow to remain within acceptable limits. This provides an opportunity to make responsible and proactive decisions to prevent the development of a situation which may lead to irreversible consequences.

Transhumanism: Modern Trajectory

Science is progressing exponentially with great acceleration. Progress is change, but not every change is associated with progress. The most pointed issue is the possibility of using progressive, innovative technologies to change human biological nature. Possible prospects for applying modern technologies to humans and understanding the role of technological innovations in the modern world are proposed by some scientists to be considered within the framework of transhumanism (Sandberg, 2012).

In modernity, human nature is reduced to empirically observable qualities, the human-machine, and humans' biological and mechanistic vision. It can be said that transhumanism is a new scene of old dispute (Postigo Solana, 2018), and posthumanism is nothing more than a return to the idea of a man-machine in a modern scientific and technical way.

According to M. More (1990), recognizing and anticipating radical changes in nature and the possibilities of life resulting from the development of science and technology make transhumanism different from humanism. Thus, transhumanism is considered an attempt to change people significantly by directly applying innovative technologies (Diéguez, 2017).

Antonio Diéguez, Doctor in Philosophy, professor at the University of Malaga, identifies two types of transhumanism adherents: moderate and radical. A moderate transhumanist is satisfied with gradual improvements that increase a person's intelligence, strength, life expectancy, etc. This is a so-called humanist who has not lost faith in progress and admits the opportunity that such improvements may eventually lead to the emergence of a new species. The radical transhumanist believes that the human era is coming to an end, and it makes no sense to prolong it. The radical transhumanist advocates the destruction of material, environmental and cultural conditions that hinder long-term existence. For this reason, adherents of radical transhumanism believe that quick disposal of the biological body and the integration of human consciousness with a machine/computer are required (Diéguez, 2021). Both have the same direction of movement, but their amplitude is different.

Transhumanism carries the threat of alienating people from each other and their kind. Neural networks are algorithms that work independently of the used equipment, whether they are based on organic carbon units – like the human – or on inorganic silicon units – as a computer/cyborg. There will be different ways to get superintelligence. Among other things, as a result of the technical impact, a person may be used as a raw material to produce a superhuman. This kind of improvement requires a reassessment of all human values, especially those related to the protection of human dignity (Monterde Ferrando, 2021b). At the same time, intelligence is "should be", and consciousness is "may be". If a transition to a data-driven worldview occurs, and the power of people moves to algorithms, a person may lose their only trait, and the humanistic goals of health and happiness will be lost (Jordan, 2021).

Alternative Tools and Concepts for Transhumanism

As an alternative to the transhumanistic concept, the concept of Russian cosmism can be considered, which, even in the most utopian ideas of N. F. Fedorov, is associated with mandatory spiritual and moral evolution. There is no spiritual principle or morality for consciousness on an electronic device. In essence, there is nothing human. A person's consciousness cannot be reduced to a written text or an electronic device.

A. Florensky explained the connection of knowledge with the memory of an experience in the changeable, sensual world by translating the Greek word "αλεια" (truth) as 'the eternal memory of some Consciousness'. He believed that there is an 'ideal kinship' between the world and humans, their penetration into each other, and the interconnection. He relates the world and humans as macro- and microcosm, which is the

image and likeness of the Universe and carries everything in the world. Both the world and humans are equally complex and internally endless, so they can be considered parts of each other. The world is a biologically universal human body, a disclosure of a person, their projection. This is the essence of Florensky's cosmic-anthropological dualism. According to Florensky (1990), dualism can be overcome only in the Church, where the final result is the salvation of the whole world through the salvation of humans with the power of Christ and His Spirit. Salvation eliminates the conflict between humans and the world: that is the 'cosmic side of Christianity'.

Scientifically based evolutionary hypotheses are presented in the scientific direction of Russian cosmism. V. I. Vernadsky, who identified the process of evolutionary improvement of the nervous system and brain as one of the most critical empirical generalization of science, believed that the human of the future would have more perfect both cognitive abilities and morality: he associated the stage of the noosphere with the spiritual and moral improvement of humanity. In Vernadsky's scientific worldview, life in space is primordial: it is the third principle, along with matter and energy. According to him, the biosphere is turning into a noosphere, which is created, first of all, by the growth of science, scientific understanding and, based on these, the social work of humanity. In addition, he emphasizes the inextricable connection of creating the noosphere with the growth of scientific thought, which is the first necessary prerequisite for this creation. Vernadsky defined the noosphere as the biosphere reworked by scientific thought. He believed that processes being prepared for many billions of years are not transient and cannot stop. It follows that the biosphere will inevitably pass into the noosphere. He also notes the destruction of previously obtained scientific achievements, which can be observed as a distinct 'regression' that captured large territories and physically destroyed entire civilizations – with no inevitable reasons for this. Vernadsky talks about ideals going back in time and the emergence of a 'new' morality. He proves the need to save Christian morality, which was the basis of state morality in Christian countries (Vernadsky, 2003, 2017).

We talk about the importance of humanitarian expertise in scientific and technological projects, humanistic values and societal attitudes in an era of rapid high-tech development. The philosophy of Russian cosmism with the scale of problems' vision, based on the ideas of the cosmicity of life and the 'heart' as a particular psychophysical centre of a person, can contribute to solving the problem of high touching with innovative technologies.

The vast possibilities of the future human organism - the victory over space and time - were foreseen and understood differently by the Russian cosmists A. V. Sukhovo-Kobylin, N. K. and E. I. Roerich, etc. That is why the question about the eternal ethical analysis of human activity – the moral dimension, which is an integral part of human nature, is so important. Human actions can have unforeseen consequences and must be seriously evaluated before implementation. Institutions should be created that will be responsible for the results. This implies the possibility of effective control over the innovative technologies used: two extremes - complete permissiveness and complete prohibition - are equally undesirable (Diéguez, 2020).

Therefore, it is necessary to start from the essence of ethical actions for all technological interventions in the human body and act on the principle 'first, do no harm'. Prudential thinking, precaution, respect for the integrity and life of people, their dignity and freedom, justice and the common good should form responsibility to future generations for various kinds of technological interventions, and not only to the people who were subjected to them. In this regard, the authors propose a concept of risk management that may emerge due to implementing the concept of transhumanism.

Transhumanism Risk Management Concept

Innovative technologies and their influence will form the risk space of always existing danger of making an inadequate decision regarding their practical use. If we model the 'negative' results using risk-based parameters, this will allow us to outline the threat field, which is a manifestation of various challenges (anthropological, legal, technological, etc.) in the transhumanistic space. Forming the boundaries of the risk space, we should talk about risk zones. The maximum possible losses in each of the risk zones when using innovative technologies will be characterized by the following (Vorontsova, Arakelyan, & Baranov, 2020):

- risk-free zone - a safe intervention in the human body, acceptable from an ethical point of view;
- acceptable risk zone - use of innovative technologies with extended spectrum (while control in this area is reduced);
- critical risk zone - implementation of innovative technologies without taking into account the consequences of their use, what creates a threat to the vital activity of living organisms;
- catastrophic risk zone - global catastrophe, the consequence of which may be the destruction of civilization and man as a species.

It is also reasonable to talk about a transdisciplinary approach to assessing the hidden risks behind the use of technological bio innovations while implementing the concept of transhumanism and the tools corresponding to this approach that influence these risks level (Postigo Solana & Vorontsova, 2019). One of these tools is bioethics (Vásquez Del Aguila & Postigo Solana, 2015), whose impact on the risk level related to biotechnologies is limited to an acceptable risk zone. Also, actions related to the transformation of a person must be evaluated from the perspective of their impact on upcoming events, realizing the consequences that they entail in the long term.

The boundary between the zones of acceptable and critical risks is very slight, and it is erased at all with a transhumanistic approach. That is why it is essential to follow moral and ethical principles when using and especially when implementing innovative technologies (Ortega y Gasset, 2004). However, a person who is not guided by Christian values can consider the moral aspect in different ways: what society does not accept today will be accepted tomorrow; it is only necessary to present a 'reasonable' explanation (open a discussion on this issue) and fix in people's minds that this is normal while focusing on the advantages of the innovative technologies used.

Nick Bostrom (2014), in his book 'Superintelligence: Paths, Dangers, Strategies' writes about the risks of superintelligent machines' emergence as the last problem that humanity has ever faced – the risks involved are enormous, and it is necessary to be very serious to security issues: "The AI pioneers, for the most part, did not countenance the possibility that their enterprise might involve risk. They gave no lip service - let alone serious thought - to any safety concern or ethical qualm related to creating artificial minds and potential computer overlords: a lacuna that astonishes even against the background of the era's not-so-impressive standards of critical technology assessment" (p. 5).

This process requires serious assessment, especially in the uncontrolled use of biotechnologies at the experimental stage. There are also objections to using biotechnologies for the human existence radical transformation, to which the extreme sector of transhumanism is aimed, and it does not care about the consequences of such interference. Therefore, it is important to use effective tools that allow, firstly, to determine the boundaries of each risk zone clearly and secondly, to identify existing tools that will allow predictive analysis within each zone.

The need to overcome the difficulties caused by transhumanistic risks became a reason for forming actual directions to develop the assess

ment of the situation in the transhumanistic space (Table). The authors formulated the most significant conceptual decisions within the framework of the indicated directions. These decisions are presented as a tree graph which simultaneously reflects their structure and the logical sequence of development (Fig. 1).

Conceptual decisions in the area of developing the assessment of the situation in the transhumanistic space represent, as a whole, a new vector of development of the theory and practice of transhumanistic risk management. The tips of the main branches of the conceptual decisions tree graph form the formulated tasks in this area:

1. specifying and describing the possibilities, boundaries and criteria for the expediency of applying different approaches to assessing the situation;
2. developing the assessment methodology;
3. developing the concept and principles of assessment based on the diagnostics of the situation developing in the transhumanistic space, according to specified risk zones.

Table. Actual Directions to Develop the Assessment of the Situation in the Transhumanistic Space (compiled by authors)

Criteria	Directions to develop the assessment
Instability	1. Increasing speed and timeliness of the assessment. 2. The transition to prospective assessment; to identifying trends that make it possible to develop preventive measures.
Uncertainty, risk	3. Systematization of risk factors assessment. 4. Achieving the timeliness of risk factors assessment.
The explosive growth of information	3. Increasing the accessibility of assessment for perception in theoretical and methodological terms. 4. Increasing the representativeness of the information used, achieving the necessary and sufficient volume. 5. Rationalizing the information used in the assessment.
Increasing the importance of the social factor	6. Achieving the versatility of assessment by referring to information characterized by both quantitative and qualitative indicators.
Building the capacity of modern IT tools and solutions	7. Applying new information technologies (including highly efficient expert systems) in the assessment.

Diagnostics is the process of operational investigation of the condition and development of the situation in order to identify the distinguishing features; of a set of events and factors that most characterize the relevant risk zone for the most accurate specifying its boundaries. Considering this aspect, it will be possible to calculate the time lag for taking proactive measures to avoid falling into the critical risk zone and, even more, into the catastrophic risk zone, the exit of which will be in the practice of solving the tasks from the 'theory of catastrophes'.

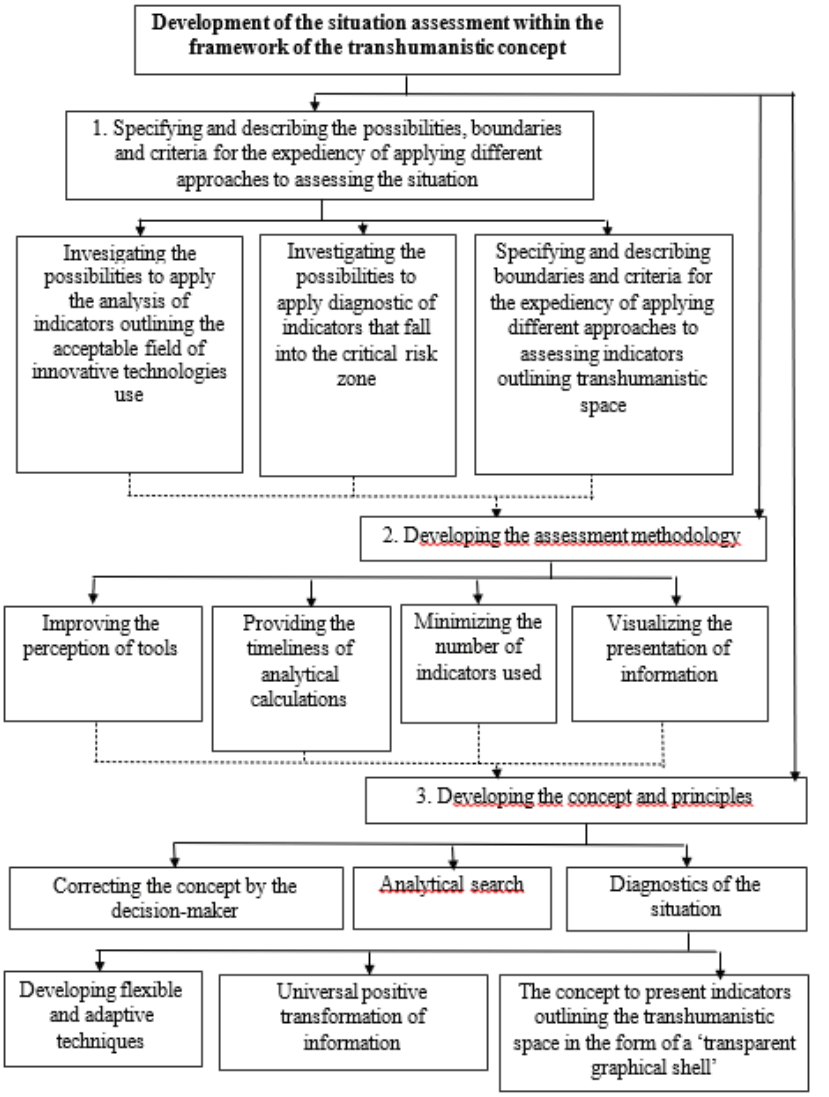

Figure 1. The Tree Graph of Conceptual Decisions that Develop the Assessment of the Situation in the Transhumanistic Space (compiled by authors).

The developed concept must meet the following requirements:

1. Objectivity and sufficient completeness of the study.
2. Accuracy and necessary reliability of the information used.
3. Flexibility and adaptability of diagnostics.
4. Accessibility of diagnostic tools for perception and understanding by decision makers.
5. Minimum resource costs.
6. Timeliness of the results obtained.
7. The possibility of iterative adjustment of algorithms for realizing diagnostic procedures of indicators characterizing the transhumanistic space (by risk zones).

Next, it is supposed to determine the composition of the diagnosed indicators, which will be included in the developed methodology, presented in this study in the form of blocks (modules):

1. Identifying key (orienting) indicators, the value of which will characterize the relevant risk zone.
2. Clarifying the orienting indicators used in diagnostics of the situation developing in the transhumanistic space.
3. Diagnostic calculations of the risk level of the

situation developing in the transhumanistic space. The content of this block investigates the values of the selected orienting indicators, including in dynamics.

4. Modelling.
5. Specifying, assessing and modelling risk factors.
6. Visual representing intermediate and final results.
7. Improving methodological provisions based on the experience of using the diagnostic system in risk management practice.

The scheme of the interconnections between these blocks in the diagnostic process is presented in Fig. 2.

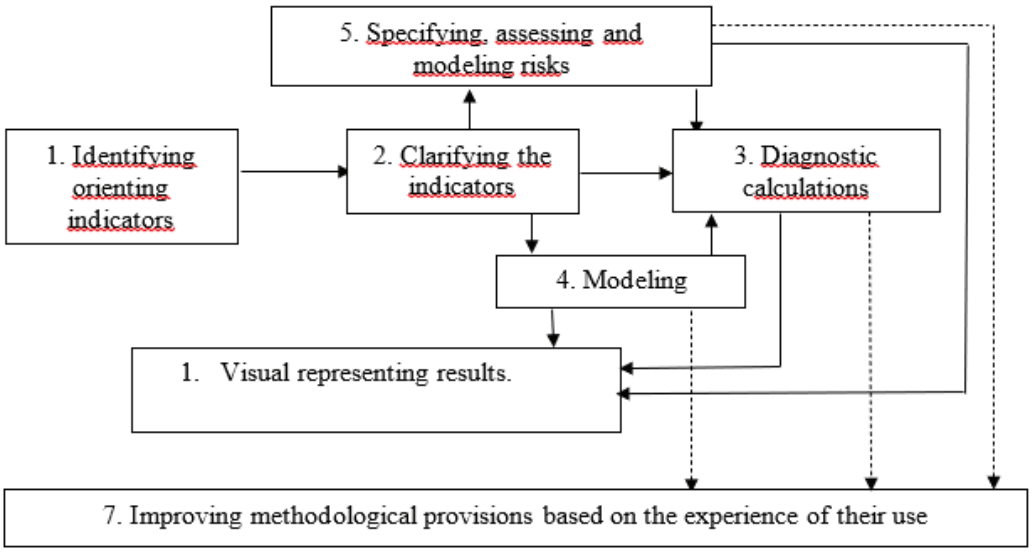

Figure 2. The Interconnections between Blocks in the Methodology of Risks Diagnostic in the Transhumanistic Space (by Zones) (compiled by authors).

Analytical and diagnostic search allows to develop and select the most favourable alternatives for the situation development forming in the transhumanistic space. The authors recommend using the situation tension indicator (1), which characterizes the value and number of possible refusals (starting from the experimental level) by risk zones. This indicator is necessary to monitor deviations in the values of orienting indicators used:

$$S_t = \sum_{k=1}^{M} | I_k - I_k^{stand} | / I_k^{stand}, \quad (1)$$

where S_t – the tension of the situation at **t** – moment;

I_k^{stand} и I_k –respectively, normative and actual values of orienting indicator of the **k** - the name, k=1,…,M; $k \in K_t$;

K_t - the field of orienting indicators characterizing the situation at **t** – moment.

Improving the efficiency of operational management is provided by minimizing the tension (2) per unit of the selected time interval of investigating:

$$S_t/\Delta t -> min, \quad (2)$$

Where Δt – the time interval of investigating the situation, forecasted both at the tactical and strategic level.

The formulated concept and analytical and diagnostic searches are the basis for further development of scientific and methodological provisions and practical recommendations for diagnosing the situation developing in the transhumanistic space (for each risk zone).

Discussion

The scientific novelty of the authors' research consists in the formation of the management concept of risks that emerge in implementing the transhumanistic idea. The concept is based on a predictive assessment of the development of the situation, which is formed as a result of using innovative technologies/biotechnologies from the point of transhumanism.

The authors identified several actual directions for the development of the assessment of the situation forming in the transhumanistic space; the tree graph of conceptual decisions that develop this assessment is presented, and the interconnection between blocks of risk diagnostics methodology for modelling future decisions in order to respond to emerging challenges of transhumanism is given.

Conclusion

Substituting the natural with the technical, transhumanism does not give a complete picture of the world, a synthesis of scientific knowledge and religious and moral insights. Any attempt to reduce a person's abilities to narrowly cognitive ones puts a person below artificial intelligence. For many representatives of Russian cosmism, technology is no more than a temporary crutch, no more than a temporary transfer of their potential to external, artificial assistants. Russian cosmism is a modern direction of philosophy that welcomes scientific and technological development but does not reject the traditional experience of accumulating spiritual knowledge. This direction synthesizes scientific, religious, philosophical and artistic knowledge, paying particular attention to the moral and ethical aspects of their application.

It should not be too optimistic about modern technology, even if it has great potential. Instead of the prospect of achieving immortality, which remains an impossible and dangerous dream for people, it is necessary to set realistic and balanced goals. It is necessary to focus on responsible decisions that consider the moral aspect and be careful of the opportunities provided by new technologies and the risks associated with implementing these technologies, thus taking care of future generations. Moving in this direction, it is possible to save human nature from doubtful attempts of improvement and, at the same time, to prolong the life of a person filled with deep meaning.

Acknowledgements

The results of the research were presented in the International Congress Razón Abierta "Transhumanism: ¿Homo sapiens o cyborg?" in Madrid, Spain (Francisco de Vitoria University, the 17-18 of June 2021). The topic of the report was "Tools and concepts of Russian cosmism as an alternative to the existential vacuum of Transhumanism".

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DOI: 10.24234/wisdom.v2i1.765
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"SOFT POWER" OF ACADEMIC MOBILITY AS A COMPONENT OF THE CHINESE FORESIGHT PROJECT OF "THE GREAT UNITY" SOCIETY

Abstract

The article considers the phenomenon of cross-border academic mobility in the context of Chinese predictive practice. By applying historical-philosophical, comparative and hermeneutic methods, the authors analyze three problem areas: the social ideal, forecasting the future, and national education in China – and make the following conclusions. The "prior knowledge" that came from the culture of Imperial China can be used as an element of modern prognostics, and the traditional project of the "Great Unity" society (the "Datong" society in the Confucian concept of the social ideal) is transformed into a national foresight project. At the same time, the idea of unified humankind is not exclusively Chinese but has deep historical roots and universal nature. Being cautious about the supranational extrapolation of this idea, modern China, nevertheless, is expanding international cooperation and strengthening international contacts, using cross-border academic mobility as one of the tools of "soft power".

Keywords: social ideal, prognostication, foresight, academic mobility, "Datong", "prior knowledge".

Introduction

Throughout the history of Chinese civilization, the inhabitants of the Celestial Empire wanted to overcome poverty and acquire prosperity and good education, which already predetermined the quality of life in Ancient China. The ideal of a unified educated society where social justice prevails was objectively in demand at all crucial stages of China's development. This ideal was actively studied, publicly discussed and used in speeches made by the leaders of revolutionary movements, whereas its transformative ideas became the basis for the activities of the revolutionary-minded masses. In New China (after 1949), which took the course of building a socialist market economy, there was a constant interest in such ideas; since the implementation of the Great Unity project, harmonious integration of the Chinese nation became the basis and condition for constructing Chinese multinational state with a highly efficient economy.

By drawing on the accumulated socio-cultural experience, China has made another historical attempt to envision the future and construct possible scenarios of its strategic development to determine the sequence of changes leading to the desired result and the image of the desired future with a set of specific socio-economic indicators.

The future of the Chinese state is the Great Unity society. In order to make decisions that are fateful for the entire Chinese people and the state, there are such requirements as the unity of public and individual consciousness and unanimity, which implies a high level of popular education in the information society.

Methodology

In the study, the authors applied such theoretical methods of socio-humanitarian sciences as historical-philosophical, comparative and her-

meneutic methods. The historical-philosophical method made it possible to trace the process of emergence and historical formation of notions of the Chinese social ideal and describe the transformation of views on specific ways, means and methods of implementing the social ideal, one of which consists in increasing the level of national education, as well as identifying qualitative changes in the Chinese national educational project over time. The application of the comparative method allowed for the juxtaposition of three problem areas: the social ideal, Chinese national education, and the prognosis of the future. The given method also allowed to identify cause-and-effect relationships and functional dependencies. The applied hermeneutic method involves studying and interpreting ideas and concepts of the given subject in the socio-political and cultural context. In addition, the logico-epistemological analysis was applied to introduce and interpret different concepts necessary for the study, including "social ideal", "unity", and "prior knowledge".

The Problem of the Social Ideal

The social ideal can be described as one of the forms of knowledge circulating in the spiritual sphere of society and performing the most critical regulatory functions. The given ideal is always personified and presented in the form of the generalized notion of an ideal social structure, in which underlying national features are realized and leading social development trends are taken into account. In the history of Chinese civilization, there was no singular notion of the social ideal with a set of specific ways, means, and methods of its implementation. Various social ideals were formed within the framework of notions of a happy life, both in literary works ("The Peach Blossom Spring", "Journey to the West", "Flowers in the Mirror", etc.), and in various philosophical doctrines that explain and help to understand the future of society. The following concepts of the social ideal can be distinguished in the history of Chinese philosophy:

I) The Taoist concept. The classical Taoist concept of the social ideal was formed in Ancient China philosophy. The given concept has a solid cosmological basis, according to which there are three classical stages of the world formation process that are cyclically repeated during the development of society. The first stage is characterized by the absence of space, time, movement, and even the category of "absence" itself. Only the primordial world exists here in its natural unity and integrity. The second stage is associated with the formation and development of a specific "impulse", which appears in a particular set of natural causes, and origins and becomes the source of all subsequent transformations in the world. The third stage is the most important one: the mechanism of formation of two substances (forms, beginnings) called Yin and Yang is launched. The given substances are opposites by their nature, they limit each other, but simultaneously, they are interconnected, complement each other, and turn into opposites upon reaching the limit of development. It is the balance between the Yin and Yang sides of the universe that determines the future image of society. Society develops as a system of constant transformations, where each stage of development has its internal limit, potential, and life cycle, allowing society to open a new cycle and pass into a new qualitative state.

II) The social ideal as the "well-field" system adopted by Meng Tzu. Another landmark in the formation of Ancient China's social ideal was the utopian system of "well fields" ("jǐngtián"), or "well lands" ("jǐng dí"), which is a way of dividing lands according to the principle of "well fields". Meng Tzu, a Chinese thinker, derived the given concept from the fact that the whole Celestial Empire is a comprehensive well, which consists of "Ten Regions" limited by "Four Seas", correlates with four corners of the world and is harmoniously governed by a "perfectly wise" ruler. In the future, dividing lands according to the principle of "well fields" will allow for the fair distribution of material benefits and contribute to the prosperity of society as a whole. However, it should be noted that the given prognostic

idea conflicted with the traditional Confucian vision of the ideal society, which subsequently gave rise to active discussions about the future of Imperial China.

III) The Confucian concept of the social ideal. The Confucian concept of the social ideal is the most fruitful one and promising for implementation on Chinese soil, although Confucius himself apparently did not believe in the possibility of its full-fledged realization. Nevertheless, history shows that the Confucian ideal is undoubtedly an ideologeme and can be fully used to control public consciousness. Unlike the Taoists, the Confucians believe that a human being has come out of his unity with nature, can potentially transform into a "noble husband" and live in an ideal strictly hierarchical society with a particular property equalization. Moreover, this society is not an entirely new entity. It has a direct analogue in the past, which allows us to speak about the classical historical cycles of human development. These cycles are represented by three phases (forms) of the development of society:

1) *The Hŭnluàn "Society of Chaos" (混乱)*. The literal translation of the given term means "disorder", "chaos", "confusion", "mess", "turmoil", "unrest" and describes the following states of society, which correlate with periods of fragmentation, endless wars that took place in the history of China:

- poverty, hunger, anxiety, and the total decline of China are evident: "But the world is in great disorder, the worthies and sages lack clarity of vision, and the Way and its Virtue are no longer One" (Zhuangzi, 2013).
- pronounced entropy, which causes the elements of society to disobey the established order or prevents the establishment of the said order;
- formation of conditions appropriate for restoring order, pacifying chaos, and directing the thoughts and actions of the masses;
- accumulation of forces for stabilization of society and compulsory mitigation of chaos.

2) *The Xiao Kang Society (小康)*. A peaceful society – the guiding threads of which are ritual (the outer Yang side of the universe) and duty (the inner side). This society is acceptable for the everyday stable life of people. However, it is not devoid of serious problems, the main of which is the underdevelopment of the dominant family principle, when, along with strong ties in an everyday relationship, quarrels and disagreements are possible, which indicates that the "Great Tao" is neglected. The loss of the "Great Tao" leads to the abolition of the principles of government and, in general, unpredictable consequences, a return to the state of chaos (*Hŭnluàn*), which is disastrous for any society. Therefore, the natural state of the Xiao Kang Society is constant modernization, which has as its ultimate goal the transition of Chinese society to a new stage of development.

3) *The Datong Society (大同)*. Just like the term "Xiao Kang", the term "Datong" ("the Great Unity") first appears in the work "Shijing" ("The Classic of Poetry"). The Confucian treatise "Liji" ("The Book of Rites" describes the ideal state of the Datong Society: "When the Grand course was pursued, a public and common opinion ruled all under the sky; they chose men of talents, virtue, and ability; their words were sincere, and what they cultivated was harmony. Thus, men did not love their parents only, nor did they treat as children their own sons only. A competent provision was secured for the aged till their death, employment for the able-bodied, and the means of growing up to the young. They showed kindness and compassion to widows, orphans, childless men, and those who were disabled by disease so that they were all sufficiently maintained. Males had their proper work, and females had their homes. (They accumulated) articles (of value), disliking that should be thrown away upon the ground, but not willing to keep them for their own gratification. (They laboured) with their strength, disliking that it should not be exerted, but not exerting it (only)

with a view to their advantage. In this way, (selfish) schemings were repressed and found no development. Robbers, filchers, and rebellious traitors did not show themselves, and hence the outer doors remained open and were not shut. This was (the period of) what we call the Grand Unity" (The Li Ki, 1885, pp. 364-366). It is clear that "The Datong Society" is the final stage of the development of Chinese society development, a state of abundance and prosperity, in which the "Great Tao" returns to people, and the Celestial Empire, despite the social differentiation, inequality and lack of complete freedom, becomes a full-fledged united family. To this day, disputes continue concerning the status of the "Datong" concept: whether it is a social ideal that has received its subsequent development in various forms or a social utopia (sometimes the "Datong" is identified as a communist utopia), or a science fiction product, a kind of synthetic construction that uses elements of scientific methodology and has the potential to influence the socio-historical process.

The Phenomenon of "Unity"

It is difficult to find the source of the "unity" concept in the history of Chinese thought, but we see constant attempts by thinkers to construct various forms of such unity. One thing is certain here: the term was born by Ancient Chinese philosophy, which tried to comprehend the nature of unity and perceive it as a mental and material construction with natural potential. The unity of natural organization predetermines the Taoist unity of humankind since people are united by their physical appearance and genetic characteristics, and humanity cannot exist in isolation from nature. Confucian social unity is stipulated by the simultaneous coexistence of heterogeneous subjects in a single social structure. The given subjects have their specific attitudes, needs, interests and values, which do not exclude, but, on the contrary, presuppose a variety of forms of social development. Therefore, Taoist unity with nature or Confucian social unity should be understood as an ideal construction created by Heaven and capable of being realized in practice.

Ancient Chinese thinkers recognised that unity has its socio-cultural significance and scope. It evolves and has no objectivity in everyday life and exists in the form of similarity between individual phenomena. These similar elements form stable connections that guarantee the integrity and sustainability of the social structure. According to Confucian thinkers, unity appears not so much as an attribute but as the essence, the obligatory element of the "Datong" ideal society, acting as the most critical component ensuring the integrity of such society. Apparently, here we can recognize a general internal regularity, a kind of basis for the social development, which requires several fundamental steps taken at the national level for its practical implementation:

1. Mentally return to the past, immerse yourself in the golden state of "Datong", which has already existed in the history of the development of Chinese society development;
2. Combine the colossal intellectual efforts of the nation to determine the effective forms of the transition period as well as the required resources of society;
3. To form in practice the unity of public and individual consciousness, which gives rise to the unanimity of the people when making fateful decisions;
4. To harmonize the Celestial Empire as a single and integral organism with a functioning natural hierarchy of organs;
5. To create practical anti-selfish mechanisms for implementing the idea of unity and to define precise requirements for the ruling elite of the Celestial Empire.

"Prior Knowledge" in Predictive Activities

The traditional project of the "Datong Society" has turned into a national foresight project. It is impossible to comprehensively describe the technology of development of the Chinese ideal society project, even using modern scientific

methodology. However, it is always necessary to try to lift the veil of Chinese secrecy, to make the inexpressibility of the path expressible to a certain extent.

In the culture of Imperial China, the phenomenon of prognostics was transformed into a kind of cult. Ancient Chinese people believed that knowledge could be revealed to the world during everyday activities, but prior knowledge is always hidden in predictive practice. Systematic attempts to comprehend the future have led to the formulation of important starting positions that need to be taken into account in prognostics: the future is based on the unity of Heaven, society, and man; the future of society is inextricably linked with nature and exists in harmonious integrity with it, obeys its natural laws; the future is always a kind of balance between the Yin and Yang sides of the universe, which are opposite, interconnected, complement and limit each other; the future is a specific transformation of the past and present.

The nature of prior knowledge is unique. It includes many elements, but, in general, the traditional Chinese prior knowledge, regardless of the historical stage of development, is always perceived as a single and integral structure consisting of various elements: rational and irrational, conscious and unconscious. On the one hand, it fully reflects the current level of knowledge, observes the existing trends in the development of reality, and uses rational norms and rules of rational thinking. On the other hand, it believes in the predetermination of social development, and the predictor's intuition helps obtain predictive knowledge without specific logical proof or analysis.

Prior knowledge has found its niche in modern prognostics, which implements high international standards. This is especially evident in the modern popular predictive technology called "Foresight", which was used for the first time in technology. After that, the given technology was applied to the business and political sphere and all other spheres of society.

Results

The model of Chinese state foresight (China's Report of Technology Foresight, 2004-2005) shares certain features not only with the model of Japanese foresight, which, in its turn, grew out of the classic American model, but also the traditional concept of prior knowledge: the future cannot be predicted reliably, any attempts of extra-scientific, parascientific, esoteric and other methods of looking into the future can only guess it, get probabilistic, unreliable, unverifiable knowledge. Nevertheless, these methods should be used in modern practice since society believes that the future stems from the past and that following a natural path leads society to a harmonious future.

It has been established based on the long-term Chinese practice that many problems of development and planning of scientific, technical and innovative activities can be solved by adopting comprehensive approaches to conducting technological foresight events, including large-scale Delphi survey, scenario analysis, technology roadmap and bibliometrics (Li, Chen, & Kou, 2017). Moreover, the scenario forecasting of socio-economic development, combining various approaches, is the most promising predictive model for designing the future. A reasonably well-developed method of "complex foresight", or "fully-fledged foresight", is recognized today worldwide as the most promising option, which, however, does not exclude the use of other ones. The future formed by the given foresight describes not only society as a whole but also its various spheres, specific events, processes, phenomena, and even definite cases, such as, for example, monitoring of technologies and the environment. The prognostic work itself can be organized at the international, national and regional levels, with an effective forecast horizon of 10-12 years.

The international experience of using foresight shows that the latter has significant internal reserves and the prospects of usage that have yet

to be realized.

The interaction of foresight and knowledge management is positively evaluated. Firstly, knowledge management can increase the efficiency and effectiveness of strategic foresight - while developing strategic foresight and applying its results. Knowledge management can be used to ensure future-oriented actions and practices effectively. Secondly, the dynamic interaction between strategic foresight and knowledge management stimulates companies' development of new technologies - it is necessary to identify new technologies applicable to companies in economic and social spheres (Nascimento, Reichert, Janissek-Muniz, & Zawislak, 2020). Big data analysis brings new opportunities and epistemic value to foresight methodology. There is a wide range of various data sources (for example, web data - user data, social network data, sales data, news, reports, etc.) that can be used for holistic analysis of technical and social development and analysis of innovation system dynamics. In particular, the analysis of such data can be used in quantitative scenario approaches (Kayser & Shala, 2020). Nowadays, the most promising foresight results lie in information technology: large databases, cloud computing, artificial intelligence, 5G - mobile communications of the fifth generation, smart objects of diverse nature, and cybersecurity. The development of artificial intelligence is recognized as the main driver behind all economies. The results of the specific 2019 study are of particular interest. The authors of the given study carried out four surveys on expectations regarding the achievements of science, technology and business within the next 35 years: among interviewees were readers of "Science", "Nature" and "Harvard Business Review" magazines as well as a group of experts in the field of technology forecasting and science policy. A comprehensive analysis of four surveys showed that the combination of medical, biomedical and biotechnological advances and advances in artificial intelligence would have the most significant impact on business and society within the next 35 years. Progress in energy and transport, based on new advanced and sustainable materials, will accompany this development, provided research funding and workforce readiness (Betz, Betz, Kim, Monks, & Phillips, 2019).

Nowadays, we see how the Chinese Communist Party has used traditional national aspirations and ideas about the Great Rejuvenation of the Chinese nation to formalize the modern construction of the classical Chinese dream by filling it with official Confucianism spirit. The whole social construction was based on the principal points of China's growth - a strong, prosperous state, a rejuvenating nation, and the happiness of man and society.

In 2015, the People's Republic of China launched a ten-year national program called "Made in China - 2025" (Perskaya & Revenko, 2020). In this program, the government has proposed a foresight project, the purpose of which is to rejuvenate and strengthen the country's high-tech manufacturers. According to the project developers, such activities will lead to the creation of a knowledge economy, the formation of a unique Chinese consumer, change of the negative industrial image, and, finally, take a firm position as a world leader in high-tech industries.

In October 2017, the 19th CPC National Congress announced a two-stage plan for the period from 2020 to 2050. In the first 15 years, it is mainly planned to carry out socialist modernization and ultimately build a middle-class society. By the 100th anniversary of the formation of the People's Republic of China, it is planned to solve the task of creating a prosperous, civilized, harmonious socialist state (The full text of the report delivered by Xi Jinping at the 19th CPC Congress, 2017), which can rightfully be considered a political power providing an outstanding level of education. According to the plans of Chinese leaders, the year 2050 will be a landmark in the history of a centuries-old civilization. This date will mark the end of the construction of the "Datong" Society, the transformation of China into a world leader and the realization of the great Chinese Dream, where the quality of human life will be directly dependent on the level of knowledge

and education in general.

From the emergence of the People's Republic of China (1949), the authorities attached great importance to education.

In the first stage of the reforms, the goal was to overcome the illiteracy of the population, for which a centrally managed network of educational institutions was created, and the number of pedagogical universities was increased. In 1958, after taking a course for rapid economic growth (the "Great Leap Forward") and carrying out the "Cultural Revolution", the centralized education system was eliminated. The number of students decreased, training programs were simplified and shortened, half of the training time was devoted to work, and the quality of training also degraded. In addition, education was ideologized. In the 80s. a course for the development of higher education was taken. However, the given level of education was elitaristic by its nature, inaccessible to residents of Chinese provinces and villages due to geographical and financial reasons (education at universities became paid). The autonomy of universities has expanded: they began to approve curricula and educational programs independently. The European system of credits has spread, the unified state exam was introduced in 1978, and the variability of education has increased: part-time and distance learning departments and external training have been created. Since the late 80s, higher education reforms have been aimed at integrating education, science, and production and improving the quality of education. The state allocated large sums for education, and a centralized education management system was recreated while preserving significant managerial autonomy of the universities. All the above measures made it possible to raise higher education in China to a decent level.

At the beginning of the XXI century, the reform of the education system was based on the experience of educational policies carried out by other countries and the reinterpretation of progressive pedagogical ideas. The content of education, as well as its methods, have been updated. The education system has changed from the pragmatic (the purpose of education is to get a profession) and ideological orientation (the purpose of education is to learn socialism) to the humanitarian (the primary purpose of education is personal development) one.

In addition to state and provincial universities, there are institutions of higher education created and funded from non-budgetary sources, including the sponsorship of foreign compatriots and Western donors.

The Higher Education Law of the People's Republic of China (1999) states that creating a university should serve the state and public interests and not make profits. Although universities are allowed to carry out commercial activities, the emphasis is put on the development of science and high technology by university professors and students. The state encourages the interest of Chinese youth in obtaining higher education.

In China, as in the whole civilized world, there is a great interest in the personalization of education. Personalization of education helps students develop their unique abilities. In the information society, it is incorrect to use the same educational methods and identical curricula as was customary in education during the period of industrial society. An individual educational plan should be developed for each student.

The roots of the individualized approach lie in ancient times. Confucius can be considered a pillar of pedagogy because he was one of the first scientists to use the theory of individualization in the learning process. Confucius said that a teacher should help a student get an individual education based on the student's talent. In the treatise "*Lúnyǔ*" ("The Analects"), there is an episode in which a disciple named Yu Tzu asks Confucius if it is possible to start working if you already know the theory. Confucius replies that it would be better to consult with parents or older and experienced people before doing so. Another disciple, Fan Zhang, asks Confucius the same question. Confucius answers that he can start right away. The third disciple present during the conversation, Tzu Chiang, does not understand why

Confucius answered the students differently. Here is Confucius' explanation: Yu Tzu is a hasty person; even though he has already understood the theory, he will not be able to apply it in practice immediately. He needs help from a teacher and parents. Fan Zhang often could not decide, so Confucius advised him to start working immediately (Confucius & Watson, 2007). Although the students of Confucius have different social statuses, almost all of them will receive a good education due to the individualised approach.

In the post-industrial society, industrial production, primarily due to the perfection of technology, becomes small-scale, while education becomes personalized. However, suppose the Confucian approach in pedagogy considers the student as an object of pedagogical influence (the teacher tells the student what and how to do, what and in what sequence to learn). In that case, modern individualized education is based on the attitude to the student as an independent subject.

The personalization of education in China has regional specifics. In each province, Chinese teachers are looking for new approaches to education, practising unique methods in education. New methods are adapted to the local educational tradition, the level of education in a particular province of China, and religious and other cultural characteristics. Such methods are often determined by the trends of local educational policy (Zhu Jiao, 2017, pp. 170-172).

The policy of internationalization of higher education is also undergoing significant changes.

The internationalization of higher education in China is directly related to the open-door policy, economic reforms and challenges of globalization and global competition, and efforts aimed at expanding the scope of higher education. The policy of internationalization of higher education curricula resulted in the invitation of teachers from abroad, some students and international scholarship holders received education abroad, and academic models from Europe, Asia, America and the Pacific region influenced Chinese higher education. Nowadays, this policy is substituted by measures aimed at protecting the national identity of education and improving national educational models abroad.

Discussion

The idea of the progressive movement of humanity through the "Datong" stage to a state of Great Equality, balance, and prosperity was actively defended by Kang Youwei, the leader of the reform movement in China at the turn of the XIX-XX centuries (Kobzev, 2006), and other Chinese ideologists. Nevertheless, today China is cautiously optimistic about the supranational extrapolation of this idea, as the authorities believe that the era of globalization can lead to a loss of awareness of traditional culture and identity, which is dangerous for any nation (Callahan, 2004).

At the same time, the People's Republic of China has declared a course toward expansion of international cooperation and international communication to strengthen the state's influence at the level of the Asian region and globally. The PRC actively uses borrowed concepts of strengthening state power, synthesizing them with traditional Chinese diplomacy based on stratagem thinking.

The concept of "soft power" borrowed from the West is now in use. The given concept consists in the influence of intangible cultural resources on the perception of modern China by the surrounding world. The authorities use academic mobility to implement the strategy.

Academic mobility is an organized process of transferring students, teachers or university scientists to another educational or scientific institution for teaching, training or conducting scientific research, followed by their return to the original place of work or study.

Let us take a closer look at how outgoing and incoming academic mobility is organized in China.

The transfer of Chinese scientists and students abroad and back is enshrined in the national legislation and included in state programs. The

State's concern is expressed in creating favourable social, financial, and organizational conditions for maintaining and developing the process of international outgoing academic mobility in order to prevent human capital flight. In China, international academic mobility is considered as one of the state-funded means of improving the professional qualification of university teachers.

In order to solve the problem of non-return of talented young people, who have successfully integrated into the Western educational and socio-cultural environment, the Government has implemented several programs aimed at financial support of the "returnees", as well as research funding and provision of new career opportunities. Such programs have yielded positive results: the central government of China has put forward many national initiatives and thus returned talented people from abroad.

A number of state programs stimulate the engagement and adaptation of "returnees" through specific funding mechanisms. The Thousand Talents Program provides financial support to the most talented Chinese scientists, promising young scientists and prominent foreign specialists. The program aims to engage them in work within Chinese national territory.

It is believed that the "returnees" are more qualified and experienced researchers/teachers than Chinese ones, conflicts between them complicate the integration of the former into the Chinese educational environment. However, the Government has taken several measures to finance research projects to strengthen China's position in high scientific achievements, which is a favourable factor for the return of Chinese scientists working abroad and the continuation of their scientific careers at home. Nevertheless, certain studies confirm that many unaccounted-for factors influence the decision of a young scientist or teacher with foreign work experience to return to China.

The outgoing mobility of Chinese students is being intensified thanks to state scholarship programs for studying at foreign universities and the widespread study of English.

Due to the excellent competition for admission to the master's program, a choice is made favouring a foreign university. Another incentive for mobility is the high competition in the Chinese labor market. The system of national examinations in China is imperfect, and higher education in China has become inaccessible.

It can be noted that Chinese students are ready to communicate with representatives of other cultures, but they do not allow themselves to be assimilated. Such inclination manifests itself in a compact way of settlement, striving to preserve national cultural and everyday habits while studying abroad.

Chinese students often cannot adapt to the conditions of studying at a foreign university. At the same time, foreign teachers, who have come to work in China, have to consider the national educational process's cultural and educational peculiarities. Transition to individual learning trajectories is carried out through reliance on national ways of learning (reproductive methods, textbooks, testing) and solving problematic situations.

Incoming mobility is achieved through government programs to support foreigners coming to study in China. The Government has developed several scholarship programs and is constantly increasing the size of scholarships and the number of scholarship holders.

A serious problem of intercultural adaptation of international students is being solved in China by teaching in the language of the host state; reducing the requirements for the educational results of students, which is manifested, in particular, in reducing the academic load; providing improved living conditions, as compared with those experienced by local students.

There are several scholarship programs for students and scientists. Some of these programs give talented international students a chance to get a free education in China with the provision of improved living conditions. These are scholarships from the Government of the People's Republic of China, the Great Wall Program, scholarships for talented students, etc. Other scholar-

ship programs are aimed at attracting foreign scientists and sinologists. Some examples are a scholarship program for research in the field of Chinese culture and scholarships for advanced training of Chinese language teachers of foreign origin.

Understanding cultural differences and difficulties in the adaptation and integration of foreigners, the Chinese authorities rely on students from countries with a similar mentality or consider developing countries as sources of incoming mobility. There are no special education programs to develop intercultural competencies for international students. On the contrary, a mechanism of adaptation to Chinese culture is proposed. The given mechanism includes informal permission of access to foreign Internet resources, improvement of living conditions, and provision of different educational opportunities.

Impressions about the host state, independently received by students, postgraduates, and teachers in academic mobility, break stereotypes, eliminate xenophobia, and strengthen intercultural cooperation.

However, the imposition of educational patterns and standards can cause an adverse reaction (Kovba & Gribovod, 2019, p. 18) and sometimes a veritable culture shock among students.

Conclusion

Nowadays, the apparent disadvantage of academic mobility is the Western centricity of the educational space. Academic mobility, a political tool of "soft power", often communicates Western neoliberal values. One of the ideas implemented by the neoliberal project is a course on marketization, commercialization and westernization of the system of higher professional education. The dominant direction of inbound mobility is represented by the developed countries of Western Europe and the USA. The academic flow to these countries is directed from Asian and Eastern European countries.

In order to reverse the situation, the state and business must create attractive conditions for scientists and students from non-Western countries: funding, access to scientific information and infrastructure, a high level of academic culture and academic freedom.

The example of China's policy in the given area deserves serious attention.

The idea of unified humankind is not exclusively Chinese and is not limited by the framework of "Greater China" (territories under the PRC political control). It does not appeal exclusively to a large number of Chinese living around the world, but has deep historical roots, universal nature, is supranational and effective for the entire world community, can act as a kind of supertask of human development, a coordinated strategic concept. Nowadays, we see the described ideas taking roots in the investment and economic space, solving various international problems, achieving peace, and attempting to reduce the gap between peoples and states. In our opinion, the Chinese policy in the field of academic mobility is one of the successful attempts to make a step towards the unification of humankind.

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DOI: 10.24234/wisdom.v2i1.776
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THE DEVELOPMENT OF CREATIVE ORGANIZATION POTENTIAL IN THE CONTEXT OF INTELLIGENT PRODUCTION

Abstract

This study aims to determine, from the standpoint of the philosophy, the creativity of approach to measuring and specifying the components of the creative potential of an organization to assess its level and further development in the conditions of the intellectualization of modern production. The subject of the study is the interaction of the components of creative potential. The study's hypothesis builds on the problem of the multi-aspect nature of the industrial activity, what in the conditions of digitalization and the use of artificial intelligence requires creativity in various subject areas.

Research objectives: to reason the scientific approach of structural and logical 'dissection' of creative potential to identify its key components; to develop the structure of the creative potential; to determine methods for measuring the components of the creative potential of the organization. The authors proposed a structural and logical model to form and develop creative potential. The integrating module of this model is a four-component creative group of interacting subpotentials, selected by subject-functional areas: subject-functional: intellectual-innovative, industrial-technological, organizational-economical and socio-cultural since the results of creativity are concentrated in these areas and can be measured in specially selected indicators.

Keywords: interaction of components of the creative potential, intellectualization of production, multiple intelligence, assessment of the creative potential of the organization, the structure of creativity.

Introduction

The problems of developing creative potential are always in the focus of philosophical thought since creativity is the main component of the culture in any society. The essence of the philosophical interpretation of creativity is in its unity with the working activity of people. As an integral element of society, A person develops their personality and creative potential precisely in the process of working activity that transforms the world around them (Chiaradonna, 2009; Ermakova & Sukhovskaya, 2016).

In the process of working activity, people unite in socio-economical organizations, including industrial ones. The peculiarity of such organizations' activity is that the creative potentials of individuals are integrated into the total potential of the organization. In this case, the development of the total creative potential becomes the prerogative of the organization's management. Most industrial organizations in Russia realize that it is time to replace automatic control systems with intelligent ones since priority technologies are those that provide flexibility in production processes and closer communication with consumers. Forming a flexible production environment based on intelligent technologies is associated with a change in the nature of work and the need to master new competencies. The role of creativity, generation and implementation of new ideas is increasing. Thus, there is a need

to manage the formation and development of the organization's creative potential as a fundamental factor of the qualitative technological jump in modern production. Management efficiency of any phenomenon or a process is really only on the condition that its specific parameters are measurable. The problem of the objective measures lack of creative potential is revealed. Usually, psychological testing, scoring and expert methods of creativity assessment for individuals are used. At the same time, there is no attempt to integrate individual potentials into the total creative potential of the organization. Due to this, the authors propose a subject-functional approach to forming complexes of indicators for assessing creative potential while continuity in belonging to an individual - group – organization is kept, which is the scientific novelty of this research.

Methodology of Accounting for Multifactorial Creativity

Reliable planning of the potential creative development of the organization is possible only if it is measurable. Even though creativity and creative potential arouse close attention and continuing interest, objective measures are still absent (Bonetto, Pichot, Pavani, & Adam-Troïan, 2021). We decided to follow the path of structural and logical 'dissection' of the creative potential of the organization considering the features and interests of the production system (selecting its components, determining the characteristics of each component) in order to propose then a set of indicators for the integral assessment of the creative potential, taking into account the multifactorial creativity. Within the study, various theories of creativity were analyzed by J. Guilford, R. Sternberg, T. Amabile, S. Barsade, J. Mueller, B. Staw, F. Barron, D. Johnson, S. Mednik, E. Tunik, T. Lubart and others.

This allowed us to form our own approach to measuring creative potential, considering its multifactorial nature and the manifestation of creativity in various subject areas, based on constant updating of knowledge and skills to increase the efficiency of the multiple intelligence use.

Analysis of Definitions Presented by the Creative Potential of the Organization

The term 'creativity', which came to us from the English language, is used by domestic researchers in different meanings and is the subject of fierce discussions in terms of its terminological essence, demonstrating opposite ideas, or equalizing them (Taylor, 1988; Runco, 2007; Kaufman & Glăveanu, 2019).

In our opinion, the concept of 'creativity' is narrower than the Russian analogue. Creativity, a person's ability to perceive new things and find non-trivial solutions for problems, as their non-standard, divergent and convergent thinking, should be considered a generator of creative processes. Moreover, creativity is pragmatic in essence, since the objective of creating a new product, the scope of its application and benefits are initially known, which is very important precisely for motivating innovative development of production. Due to this, there is an urgent need to develop the organisation's creative potential as the basis for activating the creative component of work.

Structural and Logical Modeling of the Formation and Development of the Creative Potential of the Organization

Any human activity combines at least two components: regulated and innovative, creative. In the era of total digitalization, work according to a given scheme, regulations, technology, instructions, meaning copied and repeated operations, routine, gradually moves into the field of robots and automats, taking humans out of direct production. At the same time, the role of work, directed on creating new values, new production methods and, accordingly, the innovative and creative component of professional activity, increases. In the industrial sphere, these are, first, scientific research: fundamental, applied and verification, as well as marketing, socio-economical

and others; design and technological developments and pilot production; innovation and invention; forecasting and organizational development; strategic management, reengineering, management activity itself, etc. Creative decisions require a creative approach and are also associated with risks and unpredictability, which can cause disorder and disorganization in business. This means that it is necessary to be able to form the creative potential based on a scientific approach and manage it.

Many authors (Brizhak & Romanets, 2021) refer to R. Sternberg's multifactorial theory of creativity, which identifies individual components of the creative potential that are integrated at the group and organizational levels (Sternberg, 2006). As a result, the authors developed a structural and logical model to form and develop the organisation's creative potential. The integrating module of this model is the four-component creative group of interacting subpotentials selected by subject-functional areas. The model is shown in the figure:

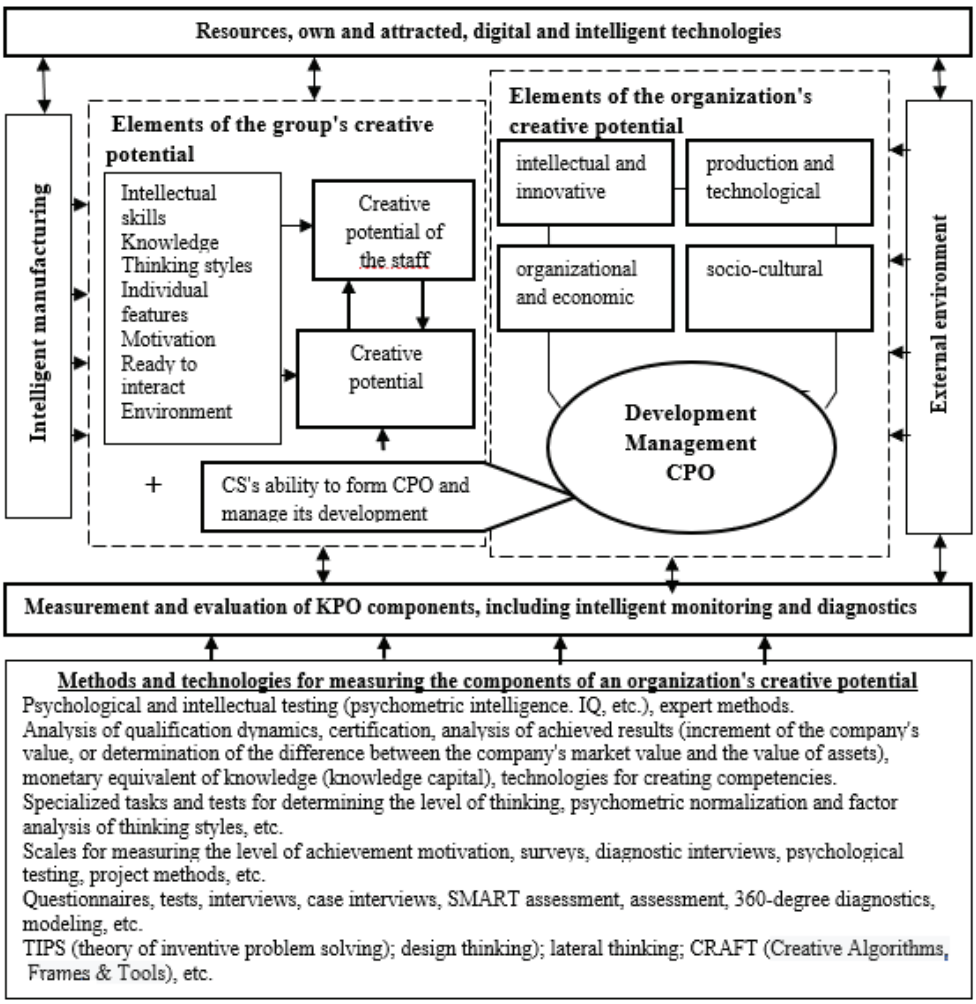

Figure. Structural and Logical Model to Form and Develop the Organization's Creative Potential.

The organisation's creative potential from the point of view of a systematic approach is a set of interacting creative potentials of the individual, group and organizational levels (Mikhailov, Tikhonov, & Margarov, 2022; Brizhak & Romanets, 2021).

At the level of the organization, four subpotentials are identified, which comprehensively reflect the creative possibilities and limitations of the organization's activity to achieve objectives in the conditions of production intellectualization (Zelentsova & Tikhonov, 2018).

The intellectual and innovative element of creative potential is the ability and willingness to accumulate new organizational knowledge, skills, and experience and use these ones to create creative ideas and solutions for the development, implementation and commercialization of innovations (fundamentally new and improved technologies and products, methods of their promotion, interaction with stakeholders, etc.), that provide the growth of innovation activity and the receptivity of the organization, the level of production digitalization, etc. As for the measurers, these can be indicators for assessing innovative and intellectual potential (Boginsky, Zelentsova, & Tikhonov, 2019), such as:

- patent activity coefficient;
- innovation share in the increment of business value;
- innovation competitiveness index;
- indexes of professional and intellectual development;
- level of inventions per employee;
- activity index of interaction with a group of creative colleagues;
- level of perception and processing of external information;
- growth of intellectual assets;
- cognitive coefficient;
- integral assessments of the group's creativity and some other indicators specially developed to assess the creative potential (Gorlacheva, Gudkov, Omelchenko, Drogovoz & Koznov, 2018).

The production and technological element of creative potential is the ability and willingness of the organization to provide the production of the target volume of products of the required range and quality as scheduled, effectively using the resources of intellectual production (flexible production systems, robotic complexes, etc.). The most reliable indicators in this group of subpotentials are:

- relevance of professional competencies with the requirements of a high–tech organization;
- level of personnel involvement in solving creative tasks to improve the technical and technological equipment of production;
- growth of investments in research and development;
- coefficient of advanced technologies use;
- level of automatization and intellectualization of production;
- experience of innovative activity in the technological sphere, etc. (Gorlacheva, Gudkov, Omelchenko, Drogovoz, & Koznov, 2018);

The organizational and economic element of creative potential is the ability and willingness to mobilize, attract, and effectively use material and non-material resources to achieve the target growth of economic indicators (organization value, profitability, investment attractiveness, etc.). In our opinion, these indicators should be used here:

- interaction level in the organization - the growth rate of profit from creative activity;
- growth of investments in human capital;
- the growth rate of orders due to innovative competitiveness;
- change in the value of intellectual capital as the leading resource of the industrial organization;
- average salary growth;
- indicators for considering the knowledge of employees, business processes and customers, etc.

The socio-cultural element of creative potential is the ability and willingness of the organization to create an organizational culture that contributes to the effective implementation of the creative process, disclosure and development of knowledge, skills, and experience of staff members and managers, to productive collaboration for the achievement of high creative results.

Discussion

Despite many creative potential studies, a unified point of view has not been developed on its structure, composition of influencing factors, and interconnection with intellectual, innovative, and other types of potentials. There are opposite views on the relation between the concepts of creativity and intelligence (Basic, 2017)

- creativity is considered an independent factor since its interconnection with intelligence can be neglected due to insignificance (Guilford, 1950);
- a direct dependency between intelligence and creativity is admitted (Sternberg, 2006).

Various creativity theories that determine necessary creative components are proposed. In the theory of minimal creative abilities, creativity is defined as the product of intelligence and experience (Loseva & Abdikeev, 2020). Other theories consider a more comprehensive composition of creativity. For example, T. Amabile includes knowledge, competencies, values, human involvement, and internal and external motivation in the components of creativity, and R. Sternberg and T. Lubart consider six different components of creativity: motivation, intelligence, knowledge, personality, thinking styles and the environment. The concept of Rhodes 4P is the most well-known. According to this one, the creative potential includes four components: creative personality, creative product, creative process and creative environment.

By now, various methods of assessing creative potential have been developed. Most of these are not universal and evaluate creativity at the individual level. The methods of A. Binet and T. Simon, M. Wallach and N. Kogan, E. Torrens, F. Barron, D. Johnson, S. Mednik, E. Tunik, and others evaluate the cognitive component of creativity, the methods of R. McCrae and P. Costa, D. Renzulli, R. Hartman and K. Kalahen, G. Gow, Myers-Briggs, K. Schaefer, E. E. Tunik and others investigate the conative component, evaluating personality traits associated with creativity, questionnaires and tests of D. Meyers, P. Soloway, D. Gouldman are intended to measure the emotional component. The methods of T. Amabile (Amabile, Barsade, Mueller, & Staw, 2005) and others are dedicated to assessing the influence of professional activity conditions on creativity, and the methods of R. Richards, R. Sternberg (2006) are dedicated to the assessment of creative achievements. Various studies are dedicated to establishing dependencies between creativity and factors influencing it. Thus, it was found that there is a positive connection between creativity and social risk, while there is a negative dependency between creativity and the level of fear of negative assessments. The positive impact of social independency on a person's creative potential is noted by O. V. Loseva and N. M. Abdikeev (2020).

Considering the organisation's creative potential, it is usually used structural and functional approaches. According to the first approach, individual, team, and organizational, creative potential are selected, corresponding to the organisation's levels of management. Following the second approach, the components of creative potential that have various functions, for example, financial, personnel, logistical, market and information, are selected (Cheng, 2018).

The complexity of the organisation's creative potential as the object of assessment determines to use a set of methods. For example, creativity is studied as a component of intelligence and sensory, emotional, logical, socio-cultural and economic intelligence for the individual and group level, and the organizational level is not considered. Questionnaires compiled by the authors are used to assess individual intellectual potential, expert assessments are used to determine the significance of various components of intelligence, and the cluster approach is used to assess group intellectual potential, combining employees into groups based on the principle of complementarity or enhancing the significance of individual components of potential.

Any potential, including creativity, should be

assessed relative to target (normative) indicators. In this regard, the methodology for assessing the creative potential proposed is interesting. This methodology provides for the forming profiles of professional creativity of positions. According to these profiles, tasks are compiled to assess the professional creativity of personnel. Profiles' comparison of professional creativity of positions and personnel based on the assessment results allows for identifying inconsistencies at the individual and organizational level and determining their value for decision-making in the personnel policy to develop creative potential. This methodology focuses on solving personnel issues and does not cover all the components of creative potential.

As the analysis shows, further research is required to develop approaches and methods that provide systematic and comprehensive assessment of the organisation's creative potential in the conditions of intellectual production.

Conclusion

Unfortunately, at this moment, measuring the components of the creative potential of the industrial organization has a very weak scientific and methodological base, focused mainly on philosophical and psychological research. At the same time, the successful and accelerated transition of the domestic industry to a new technological order entirely depends on the ability to manage the factors of activating the creative component of production activity. Recognition of the organisation's creative potential as one of such factors required the development of a new scientific approach for its measuring and assessing. The most significant scientific result of our research is the expansion of philosophical knowledge in the field of creativity management in the process of production intellectualization and the development of the structural and logical model for forming and developing the creative potential of the organization as the platform for a successful transition to a new technological order.

The practical significance of this study is that a systematic interconnection of creativity components that can be integrated into the group potential was formed. Also, the components can be differentiated in the four-component creative group of interacting subpotentials of the organisation's creative potential. This will make it possible to develop scientific and methodological support for measuring the components and assessing the creative potential of the organization in order to develop it using intelligent technologies actively.

Acknowledgements

To the Federal State Budgetary Educational Institution "State University of Management" for the opportunity to realize proactive scientific and analytical research.

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Theoretical words cloud for reasoning, philosophy, economics and financial matters with related labels and terms

The publication has been endeavoured by Khachatur Abovian Armenian State Pedagogical University Foundation
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Official webpage of the Periodical: http://wisdomperiodical.com
Responsible for the issue: Hasmik HOVHANNISYAN, Editor-in-Chief
Print run: 200
Number of pages: 198