The Impact Factors of the Fourth Industrial Revolution on the Current Social Development

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ABSTRACT
This article deals with the impact factors of the fourth industrial revolution on social development. The authors carried out an institutional analysis and identified the changes in the institutional environment of the consumer market. They described the institutional transformations of the consumer market caused by the opportunities and restrictions associated with the fourth industrial revolution. The research identifies the constraints for the development of the fourth industrial revolution in the Russian Federation. It describes the role of governmental policies in the destruction due to the sharing economy. The authors also identified the risks associated with the changes in the legal framework under the influence of new industrial technologies. A conclusion is made concerning the importance of preserving the traditional notion of consumer protection despite the introduction of new regulation methods, and the positive role of laws that promote customers’ trust towards products, services, and business models developed during the fourth industrial revolution. The authors also identify the most complicated areas in terms of setting up regulations and the legal framework in the context of a new industrial age.

Keywords: fourth industrial revolution, digitalization, economic development, consumer market, impact factors, law, regulatory selection, sharing economy

1. INTRODUCTION
Economic development is a process of structural transformations that stipulates the improvement of both labor productivity and quality of life. In the majority of developing countries, including the Russian Federation, economic productivity remains too low to stimulate growth and address the challenges of the XXI century. The new economics driven by the fourth industrial revolution stresses the importance of investing in human capital, creating knowledge and innovations to improve competitive edge and strengthen integration in the world markets. Digitalization simplifies the access to technologies and skills necessary to develop innovations and diversify production, thus extending the opportunities available to countries. The rethinking of social development in the context of the fourth industrial development requires the adaptation of new development strategies to support the flexibility of the labor market and improve digital backup.

The key goal of any analysis of the impact of the fourth industrial revolution on society is determining which of its effects are new and which existed earlier. In other words, it is crucial to understand whether digital technologies fundamentally changed our interactions and to which extent social interactions in digital space is a reflection of what is happening offline. The commonplace answer is both. Digital technologies play a key role in the spread of a globalized economy where different countries are at different stages of development.

2. METHODOLOGY
This research is based on the use of some elements of the innovative methods of post-institutional analysis relying on cross-subject synthesis. It stipulates the overcoming of single-dimensionality, dichotomism, and dogmatism of many frameworks of orthodox neo-institutionalism. Digitalization influences the consumer market and the society in general in ways that were unimaginable a generation ago. We are in the middle of the fourth industrial revolution that relies on electronics and information technologies of the third industrial revolution combining various technologies and eliminating differences between the physical, digital, and biological [1]. As a result, we get positive economic effects through the reduction of various losses. Products get replaced by digital content: vinyl record used to be widespread, and they still take up a (growing) niche but the majority of consumers use cloud service subscriptions that offer on-demand access to music arrays of scales that have always been impossible to purchase. Traditional maps are increasingly replaced by online services and apps accessible from mobile phones. There are resources like Facebook and Instagram, whose business model is based on the access to personal data and their use. Contracting becomes smarter (i.e. automated). For instance, shopping delivery can be triggered by a certain event, such as the lack of supplies in a fridge. Products get reinvented: autonomous vehicles may one day replace traditional automobiles with hands-on steering but simultaneously,
some aspects of regular transport become more automated even if the driver ultimately controls them. The Internet of things: one product can connect to another, e.g. a mobile app can control the thermostat in your central heating system. Even the production methods gradually change. In the near future, consumers will be able to buy a design instruction CD that can be used to print a house with a 3D printer. The Internet helped develop new sales platforms for products and services. They might open new markets for global competition and simplify the access to them for smaller businesses. Online platforms produced new services, or, more specifically, new service providers that are part of the so-called sharing economy. They often employ new methods of providing traditional offline services (e.g. taxis or hotel reservations) which become possible through digital platforms connecting prospective consumers and vendors. There is an assumption that big data may help create personalized contracts or even personalized legal regulations corresponding with individual needs and preferences and facilitating better results. There are discussions about the creation of new legal means of payment, such as cryptocurrencies.

Along with all these positive phenomena, the fourth industrial revolution also causes significant changes in social development. There is a number of impact factors that can be found when analyzing the changes in society: the rate, the amplitude, and the impact on various systems. The changes caused by the fourth industrial revolution have the highest rate throughout history. Unlike the preceding industrial revolutions, the fourth one progresses exponentially rather than linearly. Moreover, this leads to changes in almost all industries all over the world. The scope and depth of these changes forebode the transformation of entire production and management systems as well as the impact on institutions and state regulations. Due to the rapid development of the fourth industrial revolution, the rates of the changes and their vast influence on the legal framework and regulators, we face unprecedented challenges in terms of impacting the social development. The valid evidence that the technologies underlying the fourth industrial revolution significantly impact businesses and change the models of consumer behavior and business models can be found in any industry. Digital transformation, defined as the transformation “related to changes that can occur in business models... Products or organizational structures because of digital technologies” [2], has probably been the most wide-spread management challenge for the existing companies in the previous decade, and it will remain that in the next on. From the consumers’ point of view, new opportunities arise but some might feel less secure because they face new products and purchasing methods. To solve this problem, digital opportunities must be complemented with qualified employees and managers to unlock their transforming force. Thus, digital transformation requires both technologies and people. Technological innovations do not have to breach the existing legal framework of customer protection [3]. There is a risk that lawyers may use the global changes to their benefit through influencing legislation to make their clients apply for their services.

There is an obvious need for some adaptation to satisfy the requirements of the digital environment. The main idea is that we should not undermine the achievements in customer protection to obtain a dynamic digital consumer market. Many of the traditional consumer regulations are flexible enough to adapt to innovations. At least, their main values can be preserved even if some technical adaptation becomes necessary. In some areas, the impact of digitalization may actually shed some light on the aspects of the legislation that require clarifications. Besides, the prosperity of new business models may require significant changes in several areas. The situations when the gains of digitalization justify the sacrifice of the key consumer values will probably be quite limited because the government in many cases can make amendments that will comply with the traditional key values. In any case, technologies develop and satisfying all of the needs in legal reforms and deregulation might not be rational because they arise before the technology in question settles or before legal solutions appear. If customer protection is to be sacrificed to the key consumer values as self-evident attributes of a healthy market economy, there must be set a high threshold based on the improvement of consumer wealth.

There are other areas of the fourth industrial revolution, especially biotechnology, that impact consumers and will pose ethical problems for society. Many of these changes will challenge traditional regulation and legal standards and they might require different regulatory solutions [4; 5]. Digital means of communication and distribution may complicate the protection of the copyright and enforcement of the indecency law. We must admit that there are problems with data protection that require special regulation in the digital age [6] but even in data protection, in many cases, basic principles must be used in ways that accommodate practical results. Regulating the use of cookies is an example of new problems emerging as a result of digitalization addressed by legislation.

Situations pertaining to people's health or ethical issues might require a complex balance between the precautionary principle to protect consumers from excessive risks associated with technological development and the desire to encourage innovations. In some cases, regulatory sandboxes might come in useful to conduct experiments, although they are more relevant for financial innovations than for situations concerning people's health or moral and ethical issues.

There is a number of factors that significantly constrain the development of the fourth industrial revolution in the Russian Federation. 1) the dependence of social and economic development on the export policies of other countries; 2) lagging behind the leading countries in the development of competitive technologies of the fourth industrial revolution; 3) the increase in “computer” crime, including international; 4) the increase of opportunities for external informational and technical impact on the information infrastructure; 5) the problem of human rights enforcement in the digital world, including the identification and protection of digital user data, as well as the problem of providing people with the access to the
digital environment; 6) personal threats to business and government associated with the trends to build complex hierarchic information and communications systems that widely use virtualization, remote data storage, and heterogeneous communication technologies; 7) the increase of opportunities for external informational and technical impact on the information infrastructure; 8) excessive secrecy and regulation in information security; 9) insufficient output of research works related to the creation of new technologies and the low rate of application of domestic developments; 10) insufficient qualification of the personnel with respect to the requirements and competences associated with the fourth industrial revolution technologies.

2.1. Regulatory selection and sharing economy

It is possible that the most significant social problems related to the fourth industrial revolution pertain to the government’s reactions to the destruction caused by the sharing economy. This mostly applies not to private law but the legal framework around contractual relations [7]. It is necessary to thoroughly consider whether the sharing economy requires and justifies the changes in the external governmental regulations. Deregulation for the sole purpose of promoting sharing economy and platform vendors does not seem rational. The business community wants to operate the new model within the sharing economy framework but this desire per se cannot be a sufficient basis for deregulation with legal political purposes [8]. On the one hand, some state regulation measures may stifle the efforts to develop sharing economy models that are deemed profitable. The platform economy in some sectors may be the answer to inadequate and unwanted regulation, i.e. the phenomenon described by Wu as avoidance of regulation [9]. This is most evident in the taxi industry where licensing systems created markets that excluded competitors and set high consumer fares. Every sector is faced with a choice between maintaining the existing state regulations and forcing new platform vendors to comply with the conventional rules (which may, in some cases, lead to their emotional elimination) and accepting the new regulation policy [10]. Regulation must be reviewed to facilitate favorable climate for the development of innovations, provided that the key values of customer protection policies are respected. For state regulation, reforms are desirable because the ‘old’ regulation is indeed obsolete. Limiting the number of taxi licenses might be an example of regulations that are not rational. We believe that technologies serve functions that used to be the responsibility of regulators. The taxi service application can, for example, provide an opportunity to trace whether a driver picked up a client in the street bypassing the office. In some cases, consumer benefits from new services provided by platforms can be so huge that some of the customer protection standards can be legitimately sacrificed. The latter situation probably won’t occur often. Even prospective benefits, like the destruction of the traditional markets by new players, such as Uber, might be short-lived if new dominant platforms emerge that imitate the previously preferred players. In some sectors, such as crowdfunding, the necessity of a new regulatory framework for the new form of business was easily accepted. There were concerns about the form it should take [11]. It can be due to the fact that the mercantile nature and moral hazards of crowdfunding are obvious. In ‘softer’, more consumer-oriented areas, such as shared mobility and short-term accommodation, regulation is viewed as a barrier for innovations threatening access to cheaper products and services more often. It sometimes results in promoting larger numbers of community-focused services in the market. However, there is a risk of underestimating the actual consumer problems. Allowing private persons to rent out spare rooms or challenge the monopoly on licensed taxi companies might be beneficial. There are, however, social consequences. Two sectors suffered a lot: taxi (Uber) and short-term accommodation (Airbnb). Taxi licensing can be valuable to check road safety factors, such as vehicle condition and insurance, and driver’s danger to the public. Planning regulations can help differentiate between residential and commercial areas with rented apartments belonging to the second category. We must be careful with the excessive deregulation and the disappearance of legal forms of protection [12]. This is especially important because sharing economy is mercantile for the most part. Some models are closer to the true vision of sharing, like Couchsurfing, where people just share their property or companies use their assets more efficiently. However, many participants of the sharing economy are driven by the same profiteering motives as the traditional businesses with which they compete. Their existence may signify that it is necessary to review the existing control mechanisms but they must not just avoid regulation typical of the activity in question [13].

3. RESULTS

The digital age brings many changes for the better in the consumer sector. Technical progress per se may not excuse deregulation as is often the case with, for instance, sharing economy. However, if new business models call for the reassessment of the traditional standards and regulations, it must be accepted by all of the participants. New players, such as platforms, can make us question their place in the regulatory environment. Many factors that require revision due to the social development fueled by the fourth industrial revolution are irrelevant: e.g. the status of software or the distinction between a trader and an amateur. That being said, the traditional key values set out in the Consumer Protection Law may be applied to the digital industries pursuant to the necessary amendments. There is nothing surprising in it. Consumers will probably still have the same expectations in the online/digital world. The need for new regulatory models to solve the problems of the exceedingly technological society may require some new regulation methods but customer protection can retain
its traditional values and, in many cases, its traditional forms. This is a positive outcome, which implies that laws applied thoroughly or modified will probably not restrain the development of innovation in the digital consumer market. Laws can be a positive factor in facilitating customer's trust towards products, services, and business models developed during the fourth industrial revolution. These include transparent reporting to consumers, fair marketing practices and contractual terms, the protection of reasonable expectations in terms of quality and safety, efficient market regulation and law enforcement, and supporting clear and accessible methods of damage compensation.

4. CONCLUSION

The fourth industrial revolution will probably not require a radical revision of the legislative framework for the majority of the key consumer transactions. Customer protection during the fourth industrial revolution creates less significant risks or ethical problems than some other areas like biotechnology. Sectors with digital content only are the most complicated in terms of setting up standards and regulations because it is very difficult to determine the institutional environment of player interactions and forecast various models of consumer behavior, especially for payment methods. In the main consumer market, the same transaction types occur both online and offline. The same fundamental challenges are at stake, and the same solutions can be justified. The main consumer values must be preserved.

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