THE FOURTH INDUSTRIAL REVOLUTION AND THE RISE OF THE DIGITAL RISK SOCIETY

The risk society idea was developed initially in 1986 by Ulrich Beck, and it became popular later.[1] First of all it is related to the unpredictable consequences of new scientific discoveries. Their quick implementation as well as globalization is a prerequisite for the rise of the global risk society. However, currently, when digital economy of the Fourth Industrial Revolution grows, we can rephrase this idea as the rise of the digital risk society.

The Fourth Industrial Revolution actively unrolled when the 2008 crisis began. It is based on robotics and artificial intelligence, 3D printing and the Internet, things related to development of the Mobile Internet, quantum computers, synthetic biology, economy based on waste recycling, renewable power sources as well as development of digital economy and e-states. It is characterized by the growing convergence processes of physical, social, biological spheres and exponential acceleration of the rates of changes taking place. According to all analyses and forecasts, this leads to several fundamental consequences, which will cardinally change the world economy and politics over the next decade. The first consequence is automation and considerable reduction of requirements in unskilled and cheap labour, when competitive advantages of such countries as Bulgaria disappear, and it's not accidental that investments in our country are already declining, and there is a global trend of return of big companies to developed countries. The second consequence is new technologies' not requiring a transit globalization stage to realize respective production. They reduce global production chains. The third consequence is increase of uncertainty, fears, dangers originating as a result of these technologies' application, leading to boost of anti-global sentiments. The fourth consequence is origination of opposite prerequisites: on the one hand, increase of inter-dependence of people, growth of information exchange

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[1] **Beck, Ulrich**. Risikogesellschaft. Auf dem Weg in eine andere Moderne, Suhrkamp, Frankfurt a. M. 1986.

and cooperation, and, on the other hand, expansion of opportunities for big companies and control over each step of individuals, blurring of borders between the public and the individual.

The Fourth Industrial Revolution changes the social structure of society, increasing the gap between workforce supply and demand, and more and more people lose their jobs as a result of labour automation leading to reduction of the required unskilled labour. On the one hand, the Revolution substantially increases produced wealth, but on the other hand, it requires less and less manpower because of labour automation. For example, it's well-known that every year thousands of seasonal emigrants from Eastern Europe go to the United Kingdom in order to make money at the harvest time collecting agricultural products. At the same time, they already started using robots in some farms for the same agricultural activities, and robots don't need rest, it's all the same for them if they work in the daytime or at night, they don't care about the length of the working day, they don't present any claims to employers.[2] The same trend can be seen in many other fields: in traditional industrial production, defence industry, the growing part of the service industry. The consequence of this process is a higher level of technological unemployment. But when people lose their value as workforce or military force, the existing economic and political system no longer requires them. This leads to the growth of the segment of the segregated and chronically unemployed, which makes a dangerously explosive mixture, capable of leading to increase in the number of crimes, mass protests, conflicts, riots, terrorism, intensification of disintegration processes in various regions of the world.

Creation of a common information space leads to a completely new state of affairs in case of traditional ideological tools and cultural hegemony by way of which statehood was established at various stages of human development. It transforms politics as well at the rates unseen before, creating digital prerequisites for any traditional ideology's functioning: liberalism, conservatism, socialism, communism, etc. Liberal and neoliberal technological optimism dominated in the

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[2] See **Chaffin, Joshua**. Farm robots ready to fill Britain's post-EU labour shortage, In: *Financial Times,* April 25, 2017

1990s and early 21st century. However, it is currently in crisis, attacked from various, often opposite, directions.

The first of these directions is crypto anarchy or digital anarchy, a kind of digital manifestation of traditional leftist anarchy. The so-called crypto anarchists are becoming more and more popular – groups of hackers with negative attitude to the existing states, trying to warn about the dangers in the world, where everything is connected online. They are sure that digital technologies can create a society free from state chains, as it's possible with their help to undermine governments' ability to watch, control and tax the population. With this goal in mind, crypto analysts work out computer codes to protect people online. It's said in "The Crypto Anarchist Manifesto" presented by Timothy May at the crypto anarchists meeting in 1992 that "A specter is haunting the modern world, the specter of crypto anarchy. Computer technology is on the verge of providing the ability for individuals and groups to communicate and interact with each other in a totally anonymous manner. Two persons may exchange messages, conduct business, and negotiate electronic contacts without ever knowing the True Name, or legal identity, of the other". This is viewed by crypto anarchists as means to free from dependence on the state.[3] It's well-known that Julian Assange is a crypto anarchist and before the WikiLeaks case he was an active member of one of the most influential of such groups. It is surmised that Edward Snowden is also connected with them. Opposing themselves to monetary systems controlled by the state, they use crypto currencies like Bitcoin that are beyond state control, and transactions, in which they are used, are impossible to follow and tax. It's becoming difficult for states to follow new forms of online crimes as such hacker groups distribute various ciphering tools in the free access area and create the so-called Dark Net – the network of closed websites, which are practically impossible to control.[4]

The second anti-systemic direction is conservative and populist. It mainly relies not on weakening but strengthening of the state as a way of overcoming the

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[3] **May, Timothy M**. The Crypto Anarchist Manifesto, In: https://www.activism.net/cypherpunk/crypto-anarchy.html, November 22, 1992

[4] See **Bartlett, Jamie.** Forget far-right populism – crypto-anarchists are the new masters, In: *The Guardian,* June 4, 2017

existing contradictions. Its most vivid manifestation was Donald Trump winning the Presidential election in the United States, attributed to a large extent by his extensive use of social networks as Twitter, which turned out to be more influential than traditional media giants like *The New York Times* and CNN, which were until then considered very powerful and on which his opponent Hillary Clinton relied. Globally this trend looks even more striking in various versions, manifestations of which could be seen in China, Turkey and Russia before the USA. In any case, social media support anti-systemic forces on the left and the right more and more, as they are not controlled to the same extent as traditional mass media, most of which support the neoliberal status quo.

Traditional educational and mass media systems can be relatively easily monopolized by the state or big corporations and thus their main contents can be affected. Currently, billions of people are drawn into digital space and social networks, everything is decentralized, anyone can become a source of information, which is then reproduced, often attracting millions of users, especially if it is uploaded to video sharing platforms such as YouTube. Various interested groups and states can place such information, and that, on the one hand, leads to a great volume of various data that can hardly be verified, processed and interpreted by an individual; on the other hand, it leads to all kinds of descriptions, interpretations and concepts; and, third, to information wars among various groups and forces, especially in connection with the increasing multipolarity and the world system's crisis as a whole. In recent years, these crisis processes of capitalism generated hysteria that the world is entering the age of "fake news" and "post-truth". Thus, the initial optimism related to our entering the information society and knowledge society with new technologies, is being replaced by pessimism that this trend rather leads to the creation of disinformation society and ignorance society.

A typical example of that is Wikipedia, which was originally viewed as a democratic way of free of charge creation of a giant global encyclopedia, where it is possible to get information practically about everyone and everything. The project was launched in 2001, at the peak of the global neoliberal universal

ideology, prevailing in the United States, after announcement that other ideologies went bankrupt and there was one truth left that would lead the world forward. Originally, Wikipedia functioned within the framework of traditional encyclopedias, the articles for it were written by selected experts in each field. However, that turned out to be a task beyond the strength of the participants, and in several years it turned into something, in creation of which anyone can take part, i.e. the Wikipedia of our times. Everything offered in it was declared scientifically neutral as information in academic encyclopedias. The problem was that every encyclopedia of social sciences and humanities is based on some aggregate of values and world view, and it selects and interprets some facts in a certain way, while ignoring or alternatively interpreting others.

In 2014, a group of scholars from Harvard researched Wikipedia and established that politically and ideologically it was really much more biased than traditional encyclopedias in treating liberal interpretation of reality.[5] Thus, the crisis of liberal universal order and the movement towards multipolarity influenced the attitude towards Wikipedia. Various alternative encyclopedic websites sprang into life, they used their own terms and interpretations, claiming to present true interpretations and truths on this or that topic. Right wing forces started blaming Wikipedia for falling under the influence of trolls and authors oriented in a certain way and presenting wrong data and interpretations. American Theodore Robert Beale professionally known as Vox Day, a representative of the right wing supporting Trump, announced that Wikipedia got under the influence of the left-wing forces (the right-wing in American political life usually brand the progressives and liberals as left-wing) and he decided to create an alternative to it, which would offer the true, in his opinion, rightist interpretations. Using the MediaWiki program from Wikipedia he built his website Infogalactic and began providing alternative descriptions of facts, events, biographical information. For example, if one individual is characterized in Wikipedia as a "conspiracy

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[5] **Trick, Walter**. Wikipedia Is More Biased Than Britannica, but Don't Blame the Crowd, In: *Harvard Business Review,* https://hbr.org/2014/12/wikipedia-is-more-biased-than-britannica-but-dont-blame-the-crowd, December 3, 2014

theorist", he is described on Infogalactic as a bestselling author, independent journalist, etc. Thus, the struggle between Trump and his liberal opponents turned into a struggle of alternative digital encyclopedias. However, a number of other encyclopedias appeared together with Wikipedia and Infogalactic, offering their own alternative interpretations, backed by various different groups. Metapedia appeared and started offering alternative encyclopedic articles about persons, events, processes, related to extreme right-wing views of white nationalists, anti-Semites and neo-Nazi, denying the Holocaust, anti-American and Euro-centric oriented. It is distributed in 16 languages and especially popular in Hungary and Germany. There is also Conservapedia, offering facts and interpretations according to religious conservative views of the world order. After the notions of "fake news" and "post-truth" became popular staring from 2016, as characteristics of digital space, the audience of these alternative reference and encyclopedic publications started growing rapidly. A powerful opposition to Wikipedia interpretations appeared and it's becoming stronger and stronger, and claiming to be a reliable information source, offering true and universal knowledge in contrast to it. It was similar to what happened to American mass media, which Trump accused of lies. Alternative tools have been created saying what is true and what is not. Digital space lost its neutrality charm and turned into a field of battle where perception of post-truth and fake news dominates. All accuse each other in not having reliable sources of information and checked up facts. For example, one of the critical comments about Wikipedia texts related to today's processes, is that they are based on such sources as *The New York Times* and *The Washington Post*, viewed as the main tools of the liberal status quo.[6] Thus, there is no consensus any more as to reliability of sources that make one fact exactly a fact. Existence of a centralized nucleus of people, offering us truths and facts, was challenged. In this sense, the trend of ideological disintegration of the previously dominant neoliberal consensus, is reflected in the new digital public space in new forms and on a new scale.

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[6] See Fitts, Alexis Sobel. Welcome to the Wikipedia of the Alt-Right, In: Wired, https://www.wired.com/story/welcome-to-the-wikipedia-of-the-alt-right/, June 21, 2017

The previous technological revolutions lead to a change in the space, in which most wars were fought – from land to sea and air and to space. Now, digital space is becoming the main field of battle. Entering the digital network realm is loaded with contrasts, it opens new opportunities thanks to the networks we join, but at the same time makes states and other subjects much more vulnerable. The more developed the digital space you have at your disposal is, the stronger you become, but the more vulnerable as well – exactly that may be called "a network paradox". Relatively small groups, including terrorist networks and hackers, can get power, which states do not have, destroy and curtail economies, steal giant amounts of money, carry out propaganda wars. With the increase of data volume and artificial intelligence development, we can imagine such a prospect when one individual, a perfect master of algorithms, can win over a state having the biggest and well-equipped army. The fact that the "cool war" is again combined with a Cold War between the USA and Russia as well as growing tensions between the USA and China, help to aggravate conflicts.

New technologies carry a number of new previously non-existent dangers at each stage of their development. The most typical example of that is transport development. In the last century, cars became the most popular means of transportation, but annually about 1.25 mln people die in traffic accidents (only in recent years), and the number of injured ranges from 20 to 50 mln.[7] Nuclear energy is another example. Approximately 500 nuclear reactors currently being in use in various countries of the world, produce energy vital for millions of people. But at the same time, thousands of nuclear bombs can wipe the humankind off the face of the Earth. That's exactly the state of affairs to which the Fourth Industrial Revolution leads us with its total digitalization of all spheres of social life. The difference is only in the magnitude of impact, being the consequence of total inter-dependence and the fact that not only the state but also individuals or groups of people can become initiators, creates the feeling of increasing danger present in the surrounding world. Cyber attacks in 2017 blocked more than 100,000 thousand

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[7] Road traffic injuries, In: World Health Organization, http://www.who.int/mediacentre/factsheets/fs358/en/, May 31, 2017

organizations in 150 countries around the world, from hospitals to mobile operators and state institutions, including such as, for example, the Ministry of Internal Affairs of Russia. The Russian Kaspersky Lab (anti-virus software developer) found malware programs in 27% of industrial world systems in 2016 alone.[8] A notice appeared on the screens of infected computers with blocked information that it was necessary to transfer money in the form of digital currency of Bitcoins in case if you wanted to restore your information. Here we're speaking about practically total virus spreading. The more one society is computerized, the more it is vulnerable. An important factor here is that in contrast to previous battles, this attack is anonymous and it's difficult to find the real initiator, leading to mutual accusations by states with strained relations.

There are more and more attacks against business structures, especially financial organizations and companies in the service industry. Financial structures on average become objects of cyber attacks 65% more often that other business organizations. In 2016, financial institutions were attacked 200 million times, which is 29% more than in 2015. The first five places according to the type of attacked companies are taken by those engaged in retail trade, health services, manufacture, financial services, information and communication services.[9]

The goal of e-governance and e-government is to improve the functioning of global institutions, but at the same time it makes them more vulnerable than the governments that existed over the previous historical period. Thus, wars between states acquire a more and more digital character, as they target all aspects of the opponent's infrastructure which are now inter-connected via the new technologies. At the same time, viruses and tools, developed by states to fight their opponents, can end up in the hands of other states or individuals that was demonstrated by the cyber attack in 2017, when the Wanna Cry virus, developed by the CIA, was stolen. The Fourth Industrial Revolution expands the scale of vulnerability and

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[8] See Dobrev, Atanas. Apocalypse Computer Virus, In:
http://glasove.com/categories/komentari/news/apokalipsis-s-ime-na-kompyutyren-virus, 15.05.2017
[9] Cooney, Michael. IBM: Financial services industry bombarded by malware, security threats, In: Network World,   http://www.networkworld.com/article/3192927/security/ibm-financial-services-industry-bombarded-by-malware-security-threats.html, APR 27, 2017

poses a dilemma for states and certain institutions as to how to react to the challenges of the digital risk society – either isolate themselves and maximize the digital sovereignty in order to avoid invasions and attacks, or sharply increase the magnitude of control over every individual, putting an end to traditional separation of public and personal life.