
The Possible Outcomes of Technological Evolution and Its Impact on State's Boundaries

Tatiana Poddubnykh

*School for Advanced Studies in Social Sciences, Paris
Northwestern University, Evanston*

ABSTRACT

In this essay, we examine the humankind's social evolution with respect to the role of technology, as well as the emergence, expansion, and potential collapse of the State. We used to live in a world of nature where we could gain information only about the world that exists independently of us, human beings. As communication networks develop, the whole system becomes much more complicated not just due to new technologies offering more options, but because we collect data that increase our understanding of the world and also make it more complex and thus more unpredictable.

THE HISTORY OF THE HUMAN EVOLUTION

Let us look at the evolution that brought us where we, humans, are today. In the late 1790s, Erasmus Darwin came up to the scientific world with a revolutionary statement of interrelation of all life forms. The idea of certain inherited genetic characteristics of biological population through successive generations aroused huge interest and debates. Fifteen years later, Jean-Baptiste Lamarck published his theory of soft inheritance suggesting that any organism can pass on the characteristics that it acquired during his lifetime to the offspring. The idea that species are doomed to increase in complexity reigned over the whole century and then extended to include social, cultural, and informational evolution. The belief in the inevitable growth of complexity of a system supported by the neo-evolutionism that insisted on system adaptation to environ-

Social Evolution & History, Vol. 13 No. 1, March 2014 135–150

© 2014 'Uchitel' Publishing House

ment, gave an enormous impetus to the development of complexity theory.

Complexity theory then presented a completely new approach to science, analyzing how a system adapts and evolves responding to the changing environment, and how system's behavior can be 'emergent', that is independent in some respects from the behavior of the system's components. The theory is interdisciplinary by nature, and the specialists in all branches of knowledge contribute to its development. Basing on the analysis of highly distributed and decentralized systems (be it the human immune system that, contrary to what most people think, does not have any central coordinator, or ant colonies, the Silicon Valley, and even society), scientists even came to the conclusion that the world of quarks is actually very similar to that of the jaguars (Gell-Mann 1995). The key is that Complexity theory is mostly focused on how a system forms a symbiotic relationship with its environment, thus allowing for the emergence of collective behaviors (Park 1967). Here Lamarckian evolution culminates in its social equivalent and refers to us, humans, who have developed a process of problem-solving without any necessary genetic variation.

NEW TECHNOLOGIES ENABLE THE INCREASING COMPLEXITY OF SOCIAL SYSTEM

All of the biggest technological inventions created by man – the airplane, the automobile, the computer – says little about his intelligence, but speaks volumes about his laziness.

Mark Kennedy

The exponentially growing complexity seems to be the central scenario for our society, on the back of always increasing exchanges, especially of information, and an immediate feedback loop. There is a clear analogy with the micro-macro relationship in quantum physics: deep understanding at microscopic level combines with inability to understand the transfer of this understanding to a more macroscopic level.

Another example of such growing complexity would be the development of genetic engineering. Our knowledge of the hereditary material, in particular, DNA, is quite incomplete: humans

know only about three per cent of DNA, which makes the recombinant DNA technology very risky and may cause an unpredictable outcome.

Since the 1990s, the computer scientists have been inspired by the biosphere development mechanism that brought us from ciliated protozoa to social animals and is described by Evolutionary Theory as well as by Complexity theory based on fully decentralized decision-making and systems' adaptation to changing environment.

It is a paradox that *humans are the primary agents of processing information but also the main decisive force*. Norman Lee Johnson, the founder of the Symbiotic Intelligence Project, investigated the 'combination of the unique abilities of the information systems – such as the Internet – and human problem-solving to create a capability greater than the sum of the parts'.¹ Johnson keeps providing us with some fresh ideas on adaption to our rapidly changing environment and communicating on the advantages of diverse contributions in order to solve more difficult problems using this combination. Thus, his project stands for the statement that symbiotic combination of humans and networks will result in a previously unachievable efficiency of collective problem-solving.

The largest change in our contemporary world is the connective power of Internet as an essential driving force increasing the environment complexity. It does not only create social links and collaboration, and transfer information, but it also gains information from its members, enables people to create markets and compete more effectively and in a more transparent manner, thus bringing us closer to the 'perfect' state of competition anticipated by Adam Smith, David Ricardo or even John Maynard Keynes and Milton Friedman. *Internet acts as an agent of public transparency, making information public and affecting profoundly our perception of reality – and thus the reality itself*.

The evolution brought us to a stage when even the most primitive societies can get access to information via the Internet. The Internet has become a unique public platform that is available to civil society of any country. Through social platforms like Twitter, it has become the driving force of the Arab-Spring rebelling crowd. The interactive media and social networks have influenced the grassroots events. Even in Syria and Egypt where

the Internet coverage is much smaller than in most neighboring countries, the network played a crucial role.

The digital interactions between a government and citizens/businesses/employees/governments (G2C, G2B, G2E, G2G) increased in importance and culminated in various E-Government projects.² The technology-enabled development has not only saved humans much time and reduced the costs of the governing process, it has also made it more transparent. According to Cisco experts, there has been ‘a tremendous growth in e-government services, with most international, national and local governments devising strategies, establishing action plans and implementing programs’.³

Governments worldwide have made significant progress in promoting services online. In a way it proved that in order to implement a really successful representation we mostly need to provide our society with an appropriate mechanism. Once it is done, at least some of the representative functions of the State as an institution can be successfully transferred to the Internet.

Thus, *the State's functions and roles are de facto reduced*: we assume that its *consultative* and *supervisory functions have already been partly taken over by the Internet* (on other causes of changing state's functions, see Grinin 2012). Incredible as it may seem, the evolution of social institutions can lead not only to its complication and reinforcement as a symbolic presence but also to its disappearance – *just like any entity, institutions have to adapt and survive, otherwise, disappear and be replaced*. New social groups (the communities of mind) and social solidarities are not defined by the geographical, linguistic, and cultural factors that currently define the state. Such an evolution along new lines weakens the basis of state's functioning in terms of achievements and roles. In this regard, the Internet allows an instant communication, sharing and exchange of information among spatially separated individuals. This virtual universe creates a new axis of socialization, and thus weakens traditional social networks.

The development of truly international institutions operating across countries' borders, the human ability to socialize beyond borders (cultural as well as formal) and thus to avoid traditional social circles and socialization factors, usually defined by the state and its local entities, illustrates the state's inability to adapt quickly enough or even to simply adapt to the redefinition of its core char-

acteristics. Governments and states still fail to understand the way the current society resulting from humans' historical behavior has been and will continue to be transformed with individuals' increasing access to information. Governments tend to act basing on the views of the individuals that are in office, in particular, their horizon at the next elections; thus, they have to accept and, moreover, to adapt to the world where things can change very quickly. They also do not address the people's strive for stability which is endangered by the fast changes brought by technology and information flow. The voters put pressure on their politicians for bringing stability, which cannot be achieved as one should realize that the instability originates in the historical collective behavior.

NEXT STAGES IN THE EVOLUTION OF STATE

Thus, we face a possible disappearance of the state as we know it for the last few centuries, its possible transformation into a newly defined entity or a meta-entity, the disappearance or at least redefinition of its role of a medium for the centralized transmitting of fear in a world where uncertainty continually increases heightening the demand for certainty and stability, at least for the population.

This paradox itself makes the future evolution more difficult to comprehend and to forecast, but also more important to assess. Thus, it becomes crucial to outline possible evolutionary trends for the current system. Let us try to imagine the next stages in the development of the relations between state and internet and to outline some possible scenarios. *We define four different hypothetical scenarios for the future:*

1. *State domination.*
2. *Chaos.*
3. *State extinction.*
4. *Renegotiation of Social Contract.*

In what follows, we try to examine each of these scenarios and assess the possibility.

1) *State domination over the Internet and civil society constitutes a rather possible 'Orwellian' scenario.*⁴ The technology-enabled evolution exponentially accelerates society's development, but it also further increases its decentralization by providing society with all kinds of information flows that today become accessible for everyone. That is the moment when the fear of excessive decentralization replaces the common people's fear of the center.

We will try to illustrate the scenario by several examples.

Under the authoritarian rule a society lives in the atmosphere of 'centralized' fear and after the authoritarian rule sustains a symbolic defeat, it sinks into the atmosphere of 'decentralized' fear. When the population is tired of inefficiency and potential horrors (usually within their knowledge and their country) arising from disorder, there is a tendency to look for 'a providential Man', for a strong leader, regardless of the potential side effects. I grew up in Russia, moreover, in the tough industrial hub of Siberia, first under communism and then in the times of disarray following the change of regime, thus I experienced both paradigms. In the 1990s, the Russian citizens were terrified by the disorder they saw in their country. This fact explains many things in current situation. The population polls of the late 1990s showed that up to 70 per cent of respondents wanted to return a strong leader. Their support of Vladimir Putin was to a large extent motivated by the hope that a strong leader could pave the way to eliminate many of their daily fears. And hardly anybody feared that a new dictator, while eliminating the sources of fear, would restore the old fear, the fear of Leviathan.

Today we are entering a fully decentralized and technology-enabled 'networked' society that accelerates the pace of changes, thus creating fears of changes and perfect settings for a virtual sentiment of disorder, in other words, any changes bring the former societal 'order'. Would it be enough to reinforce the state vesting it with the extra-power to put things in order? And in a race for control, can the state manage such a complex phenomenon as the Internet? Will technology enable such a control? Or will technology always be an agent of disorder, almost akin to the second principle of thermodynamics?

2) *The accelerating development of the Internet can extrapolate the 'on-line disorder' to our real life.*⁵ With more people living their lives online (according to Ashley Jones, 'Twitter has become another name for social TV interaction and will continue to be it in 2013 as well'⁶; Nielsen's 2012 social media report⁷ showed that 76 per cent of the social-networks users stated that they are feeling optimistic once they started using social networks), the society development could become defined by the individual's online experiences, breaking old social connections, erasing borders and turning former world order into a new state of chaos, that is a state of

gradual change from the former order. The government's role in this case would be assumed in part by technology, not as a concept but as a driving force. This could be the scenario, similar to the dystopian science-fiction pseudo prophesies of the 1990s: a society living in the virtual network world without any true state to govern, but with a state that only has its symbolic value. With such a developed technology which can offer users a similar experience in real life, the network becomes the main plane of existence for most people that have access to it. The center of power disappears, as the state has no real impact on the society's virtual life but, at the same time, the Internet can fail to deliver.

If we imagine the extreme development of this scenario, there would be an Internet-administered chaos, when a society needs only an access to the communication technology. There would be no entity that in the absence of a true state could control a crowd. And the crowd itself would exist not in the streets, that is in physical space, but in the virtual space of the network, while people actually stay in their apartments, in net-cafes, *etc.* ... All social and bodily needs would be satisfied by the power of technology, which would lead to a strong degradation of the real body and, a potential and even stronger devolution of the mind. The virtual egos, however, would prosper, given the opportunity to develop in multiple forms (the anonymity of the Internet identity would be a crucial factor in such a society) and the 'online identities' would likely become even more important than the 'real', that is physical, one. But the absence of a state (or a false impression of its absence), does not mean the absence of economy. The new centers of power could be represented by the technology developers (the 'Google' world in effect, that is the creation of the worst direct monopoly over all aspects of the individuals' lives). Labor would also become virtual: the future workplace would be just a profile in a corporate social network (in some respect, ironically, almost a re-creation of the first 'real' virtual world: *Second Life* [the largest virtual reality website], albeit with several additional dimensions).

Therefore, as all citizens' social links transfer to the Internet world, the society's organization changes completely. The values, interests, and routines now depend on factors defined by the individual's network activities. At the same time, society becomes even more global (as the network has no real borders) and old centers of

authority perish, having no instruments of control over the technology expansion. However, those who fail to access the opportunities provided by technology as well as the marginal layers of society would potentially turn to crime or other forms of illegal existence (if 'illegal' still keeps a sense in such a dystopian world). The real life will be only in the Internet. The online society would represent an organized chaos structure, divided in numerous groups and communities, with power and influence spread more or less evenly among them.

Yet, the possibility of this grim scenario can be rejected by those who study the online socialization. Multiple surveys prove the similarity in the organization of social and virtual groups: the main message is that group behavior in the Internet reproduces social behavior in the day-to-day 'real' life (Briquet 2006, 2012). The laws of leadership and function distribution are still as valid in online cooperation, as they are in the ordinary life; so the society's stratification and inherent inequality can lead to the emergence of virtual institutions duplicating at least some functions of the current government. These institutions could be controlled by the technology developers or some transmuted virtual or 'corporate' forms of the existing government. The economy would also prevent the chaos, as the decision-making centers are also required in order to organize the numerous sectors and branches.

Although, the organized chaos scenario can hardly come true, it is still obvious that at least a part of the individual life steadily transfers to the Internet; nowadays, mobile/wireless technologies allow a person to be online at any place and at any time and the online identities (Facebook, Twitter, Apple, Google, and Skype, *etc.*) are available wherever we go. The development of gamification and achievements systems in a large number of web services (Foursquare, badoo.com, numerous mobile apps) can give an opportunity to evaluate the principles of the future online interaction: more Geeks and Geek-culture, more Techies, more online and connected users, and finally even more interacting users, interacting nodes! Though we cannot predict the way the technological evolution will shape our world, we can already observe how our modern society depends on it and adapts to it even quicker as generations pass. Let us hope that this dependence would not lead us to the dystopian future reflected in Hollywood movies. The 'Singu-

larity' is probably not that 'Near' but is still a possibility (Kurzweil 2005).

3) As controversial as it seems, the ongoing development of network technologies and gadgets could pave the way of materialization of a strange amalgamation of proto-communists', anarchists' and libertarians' dreams – *a society with no need for a government*. This utopian concept could be achieved due to the *problem-solving potential of the Internet (as a network) and technologies (as an engine of the network)*. However, it is obvious that this scenario is the less realistic one; some of its variations could be a possible outcome of the government evolution.

The government, as the only source of legal violence, applies it in order to organize citizens' life and gain monopoly on the problem-solving via bureaucracy – a system which is involved in satisfying personal needs (from job and family, to love and sex, to life and death). This current monopoly determines a government's authority and leaves a law-abiding citizen no other choice but to stick to the rules. As the early socialists and philosophers of anarchistic views (and even in some respect Ayn Rand's followers) thought that the government 'oppression' (regardless of the exact definition that can only be true for one person, and never for the people as a whole) is partially based on its restriction of the society self-organization – an alternative problem-solving instrument, which allows returning the authority to its source – the people. From Saint-Simonist communes to Tolstoyan villages and 'Gauchisme', the ideas of society operating independently from the official authorities were mostly romantic and utopian in their nature. Unfortunately, we can observe the manifestations of those bright concepts in the troubled events of the twentieth-century history, but still the idea lives on and recent examples of self-organization via social networks and similar communication technologies (also in the political field), could give this idea a new angle.

A core example of the obvious potential of the Internet as an ultimate communication means is that it has left the government without one of its oldest and most emblematic monopolies – the postal service. And today gadgets and mobile phones decrease the need for conventional paper communication and even traditional fixed-line voice telephony, rendering them useless in the context of the new technological substitutions opportunities. Moreover, in the

most technologically developed countries one can observe the trend towards automation of numerous bureaucratic procedures. This evolution, however, is driven mostly by economical and financial factors: corporations, governments, and consumers aim at lowering expenses (*e.g.*, such as time or loss of self-esteem), and technologies provide easier and more transparent means of achieving this goal. But, as we view it, the more the government and society depend on technology, the more complex and difficult to comprehend become its functions and ultimate outcome and the less control remains over governing.

Bearing this in mind, we could assume that in a few decades or so, the network system (including the Internet and all linked gadgets, machines, and terminals) could become a sort of an auto-organized meta-government, a system, which automatically solves the society's domestic problems and meets its demands. Its obvious efficiency in comparison with the bureaucracy's manpower will fundamentally transform the real government, which will become completely unable to control the artificial system which actually 'runs the show'. In this context, a new structure of a state could be established with people self-organizing through the network and probably by the network and with demanding part of the authority and right for legal violence back from the government. The technological means provide a powerful tool for a direct democracy: with each person online and easy identification process the decisions could be identified and resolved in no time. Is not this the future that Duke Kropotkin dreamt of?

However, this future, as we have already stated before, is highly improbable. The three main threats to the realization of this scenario are capitalism, political segregation of the world, and auto-discrimination through the reproduction of lack of social capital which is increasingly required in a more complex world. Money, or rather those who have it, rules our planet (the proto-socialists and anarchists hated this much) and controls the technology and its impact even to a greater degree than the governments, also trying to exploit all the network's advantages. So it is more probable that the corporations will take at least some of the authorities' problem-solving functions, forming a kind of corporate government (we will return to this below), than that these functions would be evenly distributed within society. As the technological

advance itself is driven at present more by commercial competition than by arms race (which obviously involves government), the corporations become increasingly influential, making decisions sometimes of state importance, often before the institutions representing the state even realize there is an issue. At the same time the world is still heterogeneous: with the Iron Curtain down even more centers of power appeared on the political map and their goals and visions of future are not always aligned. Therefore, the governments still retain the key functions which at present cannot be performed basing on technology: foreign policy, the international problem-solving, and the physical power, that is the power to apply physical coercion (both offensive and defensive). As the fear of enemy (regardless of its identity) is one of the most effective mechanisms of consolidation and ‘forced socialization’, that constitutes the state’s major role as a decisive factor for the creation of ‘nation’ as a concept required for the preservation of the social contract provisions related to government rights for legal violence. The political authorities are not likely to give it up, at least for the time being.

In order to realize this scenario, the technologies must fulfill an impossible mission: to unite the world into a society not divided by race, culture, religion, and political borders... However, this does not mean that some elements or variations of this scenario would not come true in a few advanced countries or could be applied as an experiment by the authorities themselves. The ideas of communism, anarchism, and societal self-organization still flourish, so maybe someone – or many? – will find the means to apply them in the future world.

4) By addressing the issues of the origin of power and the legitimacy of the state’s authority over the individual, the social contract model gives us an important framework to assess the impact of the power distribution in the society. *Technology-driven evolution and society’s self-organization via social networks and other communication technologies allow us to hypothesize that the terms of the social contract between a state and its citizens may be renegotiated.*

To get a better understanding of this scenario, we will appeal to an analogy with the capitalist system, where the idea of contract was successfully implemented: any shareholder gets a large economic power by taking part in the decision-making process and by

hiring/removing the Supervisory Board accountable to him/her. It seems important to us to bring it up in our context for a better understanding of the societal evolutionary issues.

Ensuring the accountability of certain key individuals in an organization through special mechanisms which exist to eliminate the so-called principal-agent problem is an important issue of corporate governance. Generally speaking, corporate governance is a special system of structuring, operating, and controlling a company in order to achieve some strategic goals and to satisfy shareholders as well as other stakeholders (creditors, customers, employees, regulatory powers, and suppliers, *etc.*). In listed companies all representative powers (boards, CEO, and management) theoretically have to act in the Principal's best interests and in the interests of the company (often mistakenly assumed to be aligned with short-term willingness of shareholders, depending on the existing legal system). And in this regard, there are only few key reasons for an inefficient company's corporate governance, the two most relevant are the following: loss of effective control by shareholders over managerial decisions (mainly because of separation of ownership from control and a lack of information), and some stakeholders' deliberate policy to ignore the interests of the company.

In an ideal world, the shareholders are entitled to elect and to remove directors by ordinary resolution. Shareholders can also ratify an ordinary resolution by simple majority.⁸ The system of corporate governance gives to its members an opportunity to reconsider the contract at any time and to redistribute the power among its members. Since the group of people participating in the corporate governance process is rather small it is much easier to renew contract.

The extent of the shareholders' power also depends on the society, its national composition and historical background, level of economic development and concentration of different types of power, as well as the 'sunk cost' effect when the past decisions have a larger impact than the present ones in spite of their irrelevance and that is a well-known behavioral bias. For example, the Russian economy in most cases is driven by bribes which make the decision-making process even less transparent. Moreover, many Russian companies are managed directly by the main shareholder/owner. These owners possess the controlling share and are also the pri-

mary decision-makers, which creates a well-known issue of protection of the economic rights of the minority shareholders. The situation in the UK, for example, is quite different: there are many small shareholders who have a legal and legitimate right to participate in the decision-making process.⁹

The basic principles of the corporate governance system organization are actually very close to those of the state. Following the social contract, the citizens elect government and by passing some rights to their delegates the citizens entitle the government to take certain decisions in order to protect the society and to ensure its best possible conditions.

The idea of imposing responsibility on the citizens (those who actually vote and, paradoxically, even more so on those who do not), that is a civic responsibility, dates from the Ancient Times (Cincinnatus) and has also become the basis of the American Constitution.¹⁰ But to what extent are citizens of the state responsible for the decisions taken by the government? Who is to blame for? To what extent can the citizens participate effectively in governance?

The principle of any responsible governance is based on receiving complete information. The technological evolution provides us with new tools that ensure our access to information, our ability to supervise politicians but also entitles us to redistribute the power between the state and its citizens. As we have already mentioned above, the Internet is taking over some of the state's historical functions such as supervision and consultation (and indeed the recent changes in the White House concerning the necessity for official responses to any inquiry with more than a certain number of signatures is a good illustration), and limiting the power of state in terms of execution and protection. Today we are living in the world where social reality changes in real time as technology evolves. And this change is accelerating exponentially. The probability of a large social contract renegotiation is no more inconceivable and, therefore, this scenario, to our opinion, can be quite feasible.

Just as much as the power of shareholders depends on the society, the extent of the 'civil power' as well as 'civic responsibility' depends on the political regimes and on the intrinsic abilities/capabilities of people within society: its historical and national features. Nevertheless, the vector is set. The direction is clear.

CONCLUSION

Imagine a theoretical three-dimensional virtual space with the following coordinates: time, level of development, and speed of development. Where would the contemporary human be geolocated and digitally-located – what are our absolute coordinates in 2013? What will we be in ten years? Where will we be in hundred years? And will humankind remain on Earth at all, or will the world of man-made artificial mind replace the human world we know, as Ray Kurzweil famously predicted? Technology versus Humankind? And what about the new Mankind we are moving to – *the technological Humankind?*

The issue will be the relation to the state as a supra-individual body with both symbolic presence and explicit power.

Let us summarize. The lack of confidence in the future (not the future itself but the changes from today's known to the unknown future) provokes anxiety in the world.

The Internet brought in more knowledge of the world, eliminated barriers and frontiers. But it also revealed that the social organization of the past was mostly a 'forced solidarity' driven by the need to regroup around common problems and common challenges to be able to withstand as a group (nation/state) against mostly physical aggressions (wars) from other groups. To drive this defense, societies evolved as closed entities separated to a large extent from external influences, on ideas/stories based on the 'hatred/fear of others'. In a world of permanent and pervasive communication, provided by the Internet, we break these barriers and get rid of these fears. Today we create new communities – communities of 'mind', based on common views, beliefs, education, ... that are not defined by the geographical, linguistic, and cultural factors and cross borders and frontiers and cultures and this contributes to creation of new social bonds and social links, based not on geographies but on common thinking, on issues that weaken social organizations of the past.

The state's inability to meet the humans' new demands with respect to information, to adapt to new environment and the increasing pace of change, leads to reduction of its functions. The global decentralized system of interconnected humans, computers, machines, and information systems is now endowed with power of discussion, supervision and influential power. Moreover, the Internet that also has a huge power of persuasion and signaling, questions

in many respects the necessity of the existence of the state by opening an 'alternative reality' to the citizens of the new global world and insuring the circulation of information flows. Can the concept of nation (even to a greater extent than the concept of state) resist such an interpenetrating exchange of information about the 'other' who has traditionally been the 'enemy' mostly because of the lack of information?

In this article we attempted at a brief outline of *typologies of evolution of the state as an institution with the account of the influence of technological development*. The main vector of weakening the state's authority implies that the importance of the state is reduced while it still remains a safe-haven for the least technologically sophisticated individuals. The equilibrium between state and society is most likely affected by technological development and *renegotiating Locke's social contract is a very feasible outcome*. To understand where this evolution can bring us and how fast, further research is needed.

NOTES

¹ Source: the official website of the Symbolic Intelligence Project. URL: <http://collectivescience.com/about.html>.

² 'E-Gov Strategies' (or Digital Government) is defined as 'The employment of the Internet and the world-wide-web for delivering government information and services to the citizens' (United Nations 2006; AOEMA 2005).

³ Available at: http://www.cisco.com/web/about/gov/markets/e_government.html.

⁴ By implementing the idea of 'fear driving the evolution', we hypothesize that the fear is the core factor determining the struggle for superiority between state and the Internet. The fear of uncertainty brought in by accelerating changes, fear of decentralized society without a 'haven' power of last refuge, *etc.* vest the state with additional powers, strengthening its dominant position over the civil society. On the contrary, the 'centralized fear', the fear of the state, brings us potentially to either anarchy, or to the reign of technology as core fuel – we could even say 'common denominator' – of an auto-organized decentralized society.

Centralized fear is replaced by fear of anarchy, when the state loses control in the country and private 'centers of justice' emerge. Similar situation, in our view, have taken place in Russia twice so far: after the death of Ivan IV (Ivan the Terrible) and after Stalin's death. In both cases the elite took revenge. In the first case it resulted in the Dark Ages, and in the second case it resulted in Perestroika. The history abounds in such examples (Napoleon's exile, the Chinese Democracy Movement in Beijing).

⁵ The internet makes our social organization vulnerable. The most famous terrorists (including al Qaeda operatives) use the Internet not only to obtain important information and buy plane tickets but also to coordinate the attack itself and to communicate in real time. Another example of such vulnerability is cyberterrorism; the term that was traditionally used to refer to the use of computers

to undermine the reliability of social institutions as they became dependent on computerized network, *etc.*

⁶ Nine Social Media Trends You Need to Know about. March 2013. URL: <http://ustandout.com/social-media/9-social-media-trends-you-need-to-know-about-for-2013>.

⁷ *Snapshot: How People Use Social Media*. By Flash Steinbeiser. Last updated December 4, 2012. URL: <http://www.inc.com/flash-steinbeiser/what-brings-you-to-social-media.html>.

⁸ We must say that even if the shareholders generally have some mechanisms to supervise the company, in reality, these mechanisms have either been designed not to work, or have ceased to work. Shareholders, practically, do not have any access to the main resource – information. They hire the Board which is not accountable to them. They lose control over the company management. They have no power in the decision-making process. Could they have any responsibility then? What do they pay for? And why is not the main principle of capitalism followed anymore?

⁹ Despite that, the power of shareholder is often not much larger there.

¹⁰ ‘We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States’ (Preamble to the U.S. Constitution, 1787).

REFERENCES

Briquet, F. 2006. L'Auto-organisation d'un groupe virtuel. *Information Sciences for Decision Making* 25. URL: <http://isdm.univ-tln.fr/PDF/isdm25/isdm25.pdf>.

Briquet, F. 2012. *Comment l'internet nous transforme: la socialisation dans l'univers numérique*. Nancy: Presses universitaires de Nancy, PUN – Edition Universitaire de Lorraine.

Gell-Mann, M. 1995. *The Quark and the Jaguar: Adventures in the Simple and the Complex*. New York: St. Martin's Griffin.

Grinin, L. E. 2012. New Foundations of International System or Why do States Lose Their Sovereignty in the Age of Globalization? *Journal of Globalization Studies* 3(1): 3–38

Kurzweil, R. 2005. *The Singularity is Near*. New York: Viking Books.

Park, R. 1967. *On Social Control and Collective Behavior*. Chicago, IL: University of Chicago Press.