

Cyber-Social Computing of Relationship

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Abstract – An innovative cyber culture and computing of social governance of citizens is proposed, aimed at the moral metric cloud service of social groups through the leverage of digital monitoring and expert evaluation of social processes and phenomena. Cyber culture is defined as the development level of social, technological, moral and material relations between society, the physical world and cyberspace that creates the quality of internet services for accurate digital monitoring and cloud metric management of processes and phenomena in all spheres of human activity including education, science, production and transport, to improve the quality of people life and preserve the ecosystem of the planet. A new system of cyber-physical relations in society are proposed, which will be the basis for creating innovative legislation with the functions of digital monitoring and cloud-based cyber-governance. An analytical model of relations in state structures that simulates socioeconomic, political and other collisions as a response to regulatory influences is described. Prospective directions of the cyber-statehood creation, invariant in relation to a citizen residence are considered. A set of measures for destroying corrupt relations in society is offered at the expense of radical reduction of state property as a source of corruption in management, maintenance, science and education.

I. INTRODUCTION

The state of the art is: the relationship primacy of authoritarianism and voluntarism in the statehood structure of the developing states destroys the boundaries of

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the competent powers between the executive, legislative and judicial authorities [1-3]. The priority of post-Soviet relations stimulates a prohibitive level of corruption with rising flows of money and downward flow of positions, which has been elevated to the rank of business culture to solve absolutely all problems [4].

The goal is to introduce a cyber culture of monitoring and governance into all state structures levels to improve the quality of citizens' life by creating metric cloud services that are invariant to the forms of ownership and social status of citizens.

Objectives:

1) Creation of cyber-physical structure of cloud governance by citizens on the basis of Internet monitoring of public opinion and prompt information.

2) Design of an innovative cyber physical model of state regulation, which is characterized by the primacy of cloud services for quality service to citizens.

3) Creation of a model of a moral cyber-state, which is invariant with respect to the place of citizen residence, forms of ownership and social status of citizens.

4) Design of an analytical model of relations in state structures, which simulates socioeconomic, political and other conflicts in response to regulatory actions.

5) Comparative analysis of the bureaucratic and cyber physical structure of university management by the example of one university.

II. PRESENT AND FUTURE OF THE STATE GOVERNMENT

The future of the state, as a monopoly on the management of its citizens, is determined by the factors of cyber physical globalization, the most important of which is instant online information about the processes and phenomena occurring on the planet, thanks to cyber-physical telecommunications. The exclusion of the time consuming mediator-limiter, which has always been the state and state power institutions (legislative, executive, judicial and media) (Fig. 1), between the event and the citizen (Human-to-Human, H2H) ensures the timeliness, relevance and reliability of information for making adequate decisions by each person (Fig. 2).

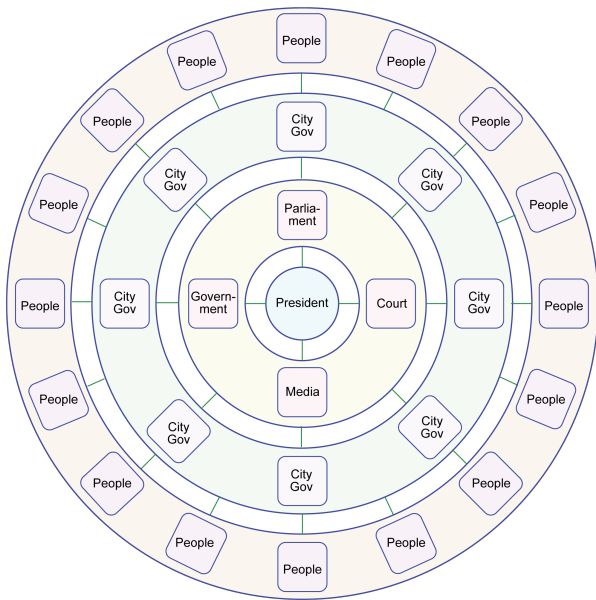


Fig. 1. The structure of public administration by citizens

Contrary to the desire of the state authorities, the real management of citizens accelerates to the jurisdiction of cloud-based Internet services (e-mail, skype, social networks, specific cloud services), which provide vital services related to health care, work, legal and financial support, house life, food and clothes, security, education, travel, culture, history, and spiritual life. The role of the state is reduced to the execution of specific services that must be high quality in competition with private structures for the money and souls of their citizens.

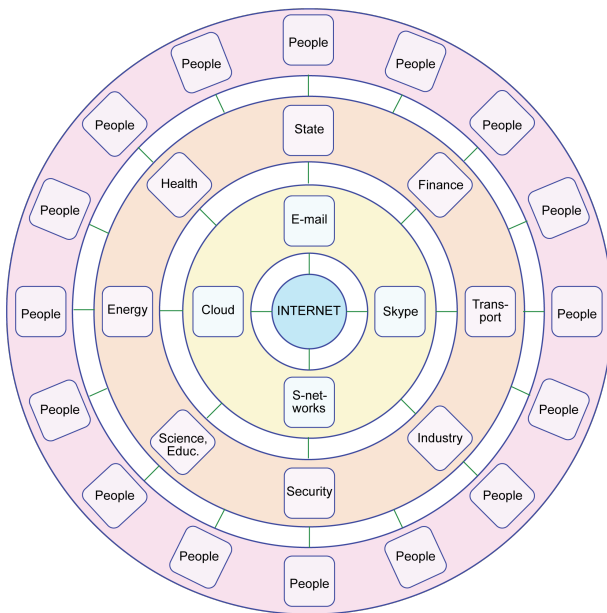


Fig. 2. Direct cyber interaction of citizens

On the other hand, through the Internet, the whole world community can directly hear every citizen, if he has a relevant and interesting message (see Fig. 2). It turns out that the state no longer has a monopoly on the exclusive right to inform (control the consciousness) of its citizens, but becomes only one of the subjects of cyber-social pro-

cesses. Moreover, given the inertia of its institutions associated with monopolism, the state always loses in technological cyber culture to its citizens and private enterprises. To maintain the position of pseudo-leadership, it actively opposes all processes of information globalization, which is the destructor of the modern backward national statehood. What is the solution for a monopolist who owns an apparatus of protection and violence against a person? With the completely understandable cyber-passivity of the legislative, executive and judicial power, the fourth power (media) becomes the leader of innovations that quickly realizes the innovative cyber technologies of online delivery (H2H) of information in the ear of every citizen of the country and the planet. Unfortunately, the media often cease to be an objective interpreter of events and turns into a servant of masters (states) who will pay more. But this is a normal immoral business. The low level of cyber culture among the political elite and in public administration institutions should also be considered a norm, which, together with ignoring the world experience of academic science offering new forms of statehood (monitoring and management), inevitably results in the disintegration of the state, as it was many times in practice of human development. So, the competitive struggle of the state for the hearts and minds of people will be lost to those private institutions, which already today offer better services to each citizen to protect his rights, health care, social security and financial support. A vivid example of moral service is Privat-Bank, which created the empire in a good way, not only for servicing citizens, but also for solving all vital issues. The state made the only "right" step in the struggle for citizens: it nationalized Privat-Bank, which was much higher than all state institutions in terms of the level of cyber culture. The systemic approach is obvious, if a neighbor business is better, then it should be legislated for itself by writing a corresponding document in advance. Why is this barbarism and ignorance? Another businessman who would like to make a powerful start-up, in a minor example of the company Privat-Bank saw the terrible future of his business as an unavoidable expropriation of his property. Thus, the ignorance of government officials has killed more than one chicken, no – thousands of chickens, which could carry golden eggs. Where do these chickens go? Naturally, they go to other countries, where they will pay their taxes in exchange for reliable financial and legal cyber-service of business and life processes. Reinforced concrete barriers to migration of citizens to other countries have been removed. A free market of statehood has appeared, defined by globalization. In it, the statehood (cosmopolitan) wins, which, in exchange for taxes, will provide a high quality of life, services and tolerant attitudes to cultures, histories, religions and languages to intelligent and talented migrants. The arguments given and their consequences are our present. More intriguing is the future of the state owner, existing on the same territory with private companies, surrounded by more than two hundred countries. In the competitive struggle for citizens' taxes, cyber-states will win, which will become invariant with respect to the territories in which citizens are located. Today, millions of people are

migrating around the planet, according to business or climate preferences and the comfortable seasons. Human mobility is the second essential argument in favor of the emergence of the institution of cyber-citizenship. Trend of obliterating interstate borders is the third physical argument for the formation of cyber-statehood. The fourth argument is related to the axiom of cyber-physical interaction: no in cyberspace means, no in physical space. It means: if e-states (monitoring and management) are not in the cyberspace, then it does not exist at all. If a person is not in the cyberspace, then he is not in the physical world.

III. DOMINATION OF CLOUD MANAGEMENT OF THE PHYSICAL WORLD

Thus, cyber processes and phenomena uniquely become dominant and leading (master) in the competitive struggle between the cyber and physical (slave) worlds. This axiom is the innovation foundation, on which all-state institutions, including the presidential apparatus, parliament, ministries, municipalities and universities should be built.

To preserve the state in the physical space, it is necessary to create cyber-statehood (digital monitoring and cloud management) with the number of officials, carriers of corruption, close to zero. E-infrastructure and the effectiveness of the state are determined by the system of relations between citizens, which is formed by law. The system of monitoring and management of citizens is a key component, on which the state competitiveness on the international market and the quality of life of citizens depend.

Power and people, positioned in cyberspace, form cyber social computing. The first one acts as a controlling mechanism, the second one acts as the executive mechanism, which creates products and provides services. The metric of power measurement is the level of profit from the export of products and services to ensure the life quality of people. The metric of people's measurement is the level of income due to the sale of their labor, quality products and services on the market.

To verify computer systems except for costly design errors, there are cloud services, which simulate control actions and determine the state or response of the system. Such simulators are practically absent in the government, where the cost of error of the leader is measured in billions of dollars and millions of lives.

The model for cloud analysis of regulatory actions generated by the political elite can be represented by the following structure of Boolean variables, where each of them has a positive (1) or negative (0) value according to the metric of the three main components: the life quality of citizens, the export of products, morally-investment attractiveness of legislation:

$$Y = F(X_1, X_2, \dots, X_i, \dots, X_n).$$

Arguments in the above functionality are regulatory actions in the following fields of human activity: economics, politics, finance, legislation, languages, culture, sociology, history, religion, science, education, industry, and personnel. Evaluation of the quality of regulatory actions

is initially carried out by attracting experts, and then the experience of the intelligent functioning of the cloud service taking into account the spatio-temporal history of solving similar problems is already used. The essentiality of regulatory actions is determined by taking a Boolean derivative with respect to a given functionality variable that forms relationships:

$$\frac{dF}{dX_i} = F(X_1, X_2, \dots, 0, \dots, X_n) \oplus F(X_1, X_2, \dots, 1, \dots, X_n) = \{0, 1\}.$$

The derivative is also a Boolean function that provides the conditions for the implementation of the regulatory action. If such conditions exist: $dF/dX_i \neq 0$, then the regulatory action is significant for the state. The essentiality can be negative or positive, depending on the value of the variable: $\{0, 1\}$. The model of cloud analysis of regulatory actions is scaled to state structures and private enterprises with any level of detail. Thus, a correctly synthesized analytical model of relations in the state can predict socioeconomic, political, financial, linguistic, religious, historical, scientific, educational and other collisions as a reaction to incompetent regulatory actions. It is also true that the analytical model of relations is capable of demonstrating positivism and the feasibility of the proposed intelligent regulatory action in a given metric of social values.

For instance, the project involves two people, who interact in accordance with a logical function: $Y = x_1 x_2 \vee x_2$. The derivative with respect to the first variable gives the result:

$$dY/dx_1 = (0x_2 \vee x_2) \oplus (1x_2 \vee x_2) = 0.$$

This means that the first person is unnecessary and insignificant for the project, so there is no condition for its activation. On the other hand, the second person is important to the project, which is confirmed by a derivative that is equal to $dY/dx_2 = (x_1 0 \vee 0) \oplus (x_1 1 \vee 1) = 1$. This means that any regulatory action or activity of the second person will immediately change the state of the project, which determines its significance for implementation. If the derivative of the control function $f(x) = \bar{x}_2 \bar{x}_3 \vee x_1 x_2 x_3$ is equal to $df(x)/dx_1 = (\bar{x}_2 \bar{x}_3 \vee 0x_2 x_3) \oplus (\bar{x}_2 \bar{x}_3 \vee 1x_2 x_3) = x_2 x_3$, means: to perform the actions from x_1 variable, it is necessary to fulfill the conditions defined by the components correspond to the variables $x_2 x_3 = (11)$.

IV. FROM THE AUTHORITARIANISM OF OFFICIALS TO THE CYBER MANAGEMENT OF THE UNIVERSITY

If there is a component (officials) that does not create products, then it must constitute a minimal part of the main actuator. For example, service and management in a digital system on a chip takes up no more than 10 percent of the total area of the system. Naturally, the model of social computing is scaled to private and public enterprises, including universities. Computing of private companies is an uninteresting topic. If the management is incompetent, there is no profit, the private enterprise ceases to exist, and the former employees replenish the human resources market.

Computing of state enterprises by the example of a university is an extremely interesting topic, where all the laws of government, science and economics are easily violated, through "wise" leadership and state funding from the Ministry of Education and Science of Ukraine, which falls from the sky to everyone who wants to obtain it:

1) The executive mechanism of 600 scientists and teachers, which create scientific products and provides educational services, has 1,400 service personnel, including more than a hundred people in the management apparatus, where there is not a single specialist with an MBA. The main rule is not managing the number, but the skill. Universities do everything on the contrary, realizing management by the number of incompetent officials. So, the number of unproductive forces (70%) in the university is 2.33 times higher than that of academic teachers (30%). In Karlskrona University, Sweden, the number of students is 5000, the teachers are 600 people, service, and management staff is 200 people or 25 percent.

2) Furthermore. Six hundred teachers are divided into two categories: constructively working (10%), producing almost all the scientific products of the university and passive (90%) in the creativity of teachers, which constitute an absolute majority. Thus, the number of scientists who really create a university through their own results is only 3% of its size.

3) Why? The history of the question is trivial for understanding. In the USSR, the concentration of active scientists in technical institutes was at least 30 percent. Consequently, the degradation of science and education has occurred over the past 26 years of the country's recent history. Mechanisms for achieving this result are interesting. The complete absence of a metric evaluation of scientific and educational work led to an equalization of the salaries of the active and passive scientists. As a consequence, the active scientist passes into the category of passive ones – a salary remains independently of results, or leaves the university and moves to private companies. The higher school in both cases raises the degree of scientific passivity, incompetence and ignorance. To survive in the conditions of a secret long-term state program aimed at the destruction of higher education; passive university teachers have a card-blanch to withdraw money from students' pockets in the amount of 5+ million per year. This is not so little, if we compare the annual budget of state funding for the entire university's science that is 6 million. But that's not all.

4) I would like to believe that students are a future productive power of the country. It is not interesting to say that the number of valid students entering the first year is not more than 50 percent. The main question after the systematic 26-year-old destruction of scientists of higher education: who teaches now students? A teacher who does not know the subject, reads lectures from Wikipedia, does not engage in science, does not give the student new knowledge, but at the same time qualitatively and professionally, under the guise of leadership, takes bribes. Thus, if you divide 60 real scientists into 7 faculties, then it will be about 10 people at each faculty worthy of students'

attention. The survey of the group of fifth-year students gave more minor results. They counted 5 teachers, the knowledge they use and consider mathematically and technologically modern.

5) Who is to blame? The metric is understandable, the higher the leader, the more expensive the cost of his incompetent decisions. The salary curve of the professor began in 1991 with \$20 and ended in 2013 with \$1000. In 2014, the salary predictably and systematically collapsed. Today it is 300 dollars with all the wraps. Lowering scientists, as well as the entire population of the country, is a natural process that is the result of the incompetence of the political elite (President, Parliament, Government, Ministry of Science and Education), which created two types of metric relations in the society. The first ones are called conceptual for the ruling political elite, where relations are built on monetary signs with an indecent number of zeros. The last ones are morally patriotic, created solely for the use of the people, which exclude the concepts of money signs as much as possible. Therefore, in exchange for money, the political elite, especially for the people, issues moral incentives, diplomas, and, most importantly, the metric of patriotism. One of the great ones said: "If the state does not have money to pay its subjects, it remembers patriotism." Read - if the leader of any level is talentless in management, he finds external enemies, objective circumstances and calls people to work for free.

6) What not to do? Revolutions always omit the people and the economy for dozens of years. Previously, they could be attributed to political, socioeconomic ignorance of the elite. Today, it turns out, nothing has changed. The level of cyber culture of the people is much higher than the country's political elite. Indeed, the consequences of the 2014 February revolution were predictable and obvious even to the tenth grade. We continue to live according to the statement of the famous figure: "The political elite with the \$ 1M + qualification cannot be the country's intellect, because there are all far from the best". These incompetent in the management officials, pass each other the power wheel not of a car or an airplane, but of a whole state, with a common and permanent goal for the elite – legitimate robbery of millions patriotic citizens in the short period of their stay in power.

7) What should do? To create scalable metric relations in society, valued by monetary symbols by the quantity and quality of labor, which is called capitalism. To create legislative moral relations in society, tolerant of history, culture, languages, religions, which is called humanism. Reduce to 25 percent the cost of government administration and public services through the introduction of cyber governance. Proceeding from the axiom that the state is always a bad owner, generating corruption, to develop legislation for transparent privatization of state property, including universities. The market competition of legally equal private and public universities in 3-4 years will solve all problems of reincarnation of science and education. Who could initiate constructive transformations? Inside the country, there is no such leader with an understanding of the innovative processes of cyber-statehood. External: President of the United States, Chancellor of

Germany? But why should they have a prosperous country? Citizens' answers to the last question (Facebook) are interesting: "Because they could sell us their products. Beggars do not have money and do not buy anything." It's terrible that we see ourselves as buyers, not sellers. The quality of citizen life is above all – an axiom for the political elite. It is achieved if, and only if, we begin to produce and sell to the whole world good quality products. There is doubt that Europe and/or America will be delighted with this. But in the market of goods and services, there is tough competition and every one for himself.

V. CONCLUSION

1) The cyber-physical structure of cloud governance by citizens is proposed on the basis of four Internet-technologies for monitoring public opinion and prompt informing.

2) The structure of the innovative cyber-physical model of state regulation is shown, which is characterized by the primacy of cloud services for high-quality servicing of citizens.

3) A model of a moral cyber-state, which is invariant with respect to the citizens' residence place, forms of ownership and social status of citizens, is described.

4) The analytical model of relations in state structures

that simulates socioeconomic, political, financial, linguistic, religious, historical, scientific and educational and other conflicts in response to regulatory influences is presented.

5) A comparative analysis of the bureaucratic and cyber-physical management structure of the university is presented using the example of the university, as well as the ways of transforming higher education by creating cyber-physical metric relations in academic fields.

6) The directions of future research are related to the creation of an intelligent cloud service for regulatory action simulation based on the logical infrastructure of monitoring and management in order to predict positive or negative socioeconomic consequences.

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