NEW MEDIA AS A FORMATION FACTOR FOR DIGITAL SOCIOLOGY: THE CONSEQUENCES OF THE NETWORKING IN THE SOCIETY AND THE INTELLECTUALIZATION OF THE COMMUNICATIONS

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The perspectives of digital sociology formation through the prism of transformation of new media are considered in the article. We confirm the beginning of the age of intelligent media, which incorporate the network principle of organization of the interactions with the implementations of artifacts (artificial intelligent agents) to communication processes and are the base for the formation of digital environment for human life. Among the main socio-cultural effects of the development of new media we rank the expansion of social reality due to the addition of a "digital dimension" to it, the formation of network culture and actualization of the communicative (and subsequently, network and digital) subjectivity. We consider the network culture from the point of view of the activity approach and define it as a conglomerate of stationary value and normative mechanisms, technological means of implementation and results of network communications. We consider the network culture formation to be a result of the societal networking and it serves as the basis for

subsequent cultural transformations – the rise of digital culture, outlines of which can be traced along with the general digitization and formation of the high-technology digital society. The conclusion, that digital sociology is called to study the laws of social life of a contemporary person integrated into a digital space of new media, is made.

Keywords: *digital sociology, new media, network, digital society, intellectualization, communication.*

Introduction

Over the past decades the world has changed significantly, the rapid development of the information technologies and the ubiquitous computing have actively facilitated this change. A computer, the Internet, a mobile phone, the social networks and other mass communication media have become the essential attributes of everyday life; they formed a new communication environment and have been given the name of 'new media'.

The concept of 'new media' refers to the conceptual innovations in the beginning of the third millennium. It has appeared due to the transfer of the cultural heritage of the mankind into the digital format and due to the convergence of various means of communication. The well-known theorist and practitioner of new media, Lev Manovich observes that the specificity of the new media is that they are not only designed to work with digital data, but also in the fact that their work is controlled by software. Thus, "… new media represents a convergence of two separate historical trajectories: computing and media technologies" (Manovich, 2001:44).

Of course, 'new' media is really 'new' only for their time. First, it was radio, then – TV, from the mid-1990s – electronic technologies, a little later (from about the 2000s) – digital technologies that gradually replaced the analog ones (the first modification of electronic mediators).

As a synonym of new media the term 'computer mediated communications' (CMC) and 'digital media' is often used , focusing attention on the fact that this phenomenon is related to the new ('digital') human environment, formation of which, according to Howard Rheingold, is the basis for the 'new social revolution'(Рейнгольд, 2006: 9). The nature of the new social revolution, from his point of view, is the invasion of the network
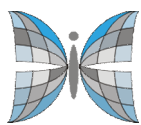
internet technologies into the contemporary life of a person that incredibly modifies the ways of communication, courtship, working and creative activities, competition, sales, management (Рейнгольд, 2006: 9). However, as M. Castells first observed (Кастельс, 2004), the network interactions of the individuals in every sphere of their life emerge and give rise to the network forms of social life, that leads to the formation of the network society or, as it becomes common to say, to the networking of the society, which supposes fundamental transformation of social relationships worldwide.

Thus, new media, identified with the modern communication technologies, are now the major factor in the transformation of social reality, which is a combination of reality and virtuality1. We can say that virtual worlds gradually 'embed' in the reality, as they stop being the place, where a person 'hides' from life, and step by step transform into an instrument of influence on the reality. One of the first striking examples of this not yet very familiar situation is a successful PR-campaign of Barack Obama in the social media (Harfoush, 2009), in particular, in the virtual world Second Life (Cooper, 2009). This PR-campaign laid the foundations of a new (virtual) type of political advertising that is actively used by the contemporary politicians and brings real, not virtual results.

The knowledge generation technologies of and the ways for solving social problems, based on the 'the wisdom of crowds' are definitely new and earlier impossible (before the virtual social networks have appeared). The idea of crowdsourcing, proposed by Jeff Howe in 2006 (Хау, 2012), is gaining rapid popularity, and crowdsourcing technologies are becoming a widely accepted form of organization of projects that are used in many spheres of practical activities today.

Thus, we are witnessing the rise of new forms of social communication and, at the same time, new forms of social interaction. But understanding of the essence, and, what is more, comprehension of the cultural shifts caused by these changes, cannot keep up their rapid spread. It is especially distinct regarding the intellectualization of communications, which is supposed to implement the artificial intellectual agents into the processes of communication, as full members of communication (bots, which are actively used in the social networks can serve, as a vivid example).

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1 Under virtuality, something that is possible, but do not exist in reality, is traditionally meant. The Internet virtual reality refutes this definition, as what is taking place in the Internet now, is affecting the reality (i.e., the online events can change the offline life).

These all demand reflection as to the invasion of new media into the everyday life of the XXI century. In addition, the expansion of new media has demonstrated the need for the revision of the foundations of sociological research methodology, since the current situation is similar to that, developed in the 1930-1950s, when the revolutionary changes in the mass media prompted Paul Lazarsfeld and his colleagues to study the social effects of new (for that time) media that led to the formation of the methodological 'core' of sociology in the second half of the twentieth century (see, e.g. (Девятко, 2010; Кислова, 2012)).

Today, some new (for our time) media has recently emerged and displaced those seemed to be new earlier. Thus, once again it became necessary to revise the methodological apparatus of sociology. And this revision has been already started: the discussions are being held as to the prospects and dangers of using a variety of private and public information scattered in the World Wide Web; as to the methods that can be used by the social scientists to obtain and analyze this information; as to the representativeness, the pros and cons of the online surveys. So, new media is becoming a factor of not only new forms of communication, but also of methodological innovations in sociology, leading to the formation of 'digital sociology' (see (Daniels & Feagin, 2011; Lupton, 2012)), which is intended to be a response to the formation of the digital human environment in the XXI century.

Our goal is to explore new media as a factor of methodological innovations in sociology, as these innovations result in raising the question of appropriateness of the 'digital sociology' development, the methods of which would be adequate to the emerging digital reality. The study of such a kind is not possible beyond the context of the historical development of the media, as this particular context allows to explicate the presence of correlation bonds among technological innovations due to the emergence of new communication technologies, social changes and their theoretical interpretation. In this regard, we will firstly examine the genesis of new media. Secondly, we will analyze the terminological debates as to the interpretations of key concepts (media, new media, social media, etc.), that will allow us to explicate the network essence of new media and focus on social media, emerged due to the wide spread of the Web 2.0 technologies. Thirdly, we will examine immediate prospects of the new media development associated with the development of the 'intelligent' Web 3.0. We will summarize socio-cultural consequences of the network media expansion. And, only then we will discuss the need for and the possibilities of the 'digital' sociology.

1. New Media Genesis

It is known that the term 'media' was first used by Marshall McLuhan to define the means of communication that, in his view, are the 'external extensions of man' (Маклюен, 2007). McLuhan's famous aphorism 'the medium is the message' formed the basis for the further consideration of communication in the light of the tools for its implementation. In this context the study of the genesis of new media is not possible without reference to the history of communication.

The history of media today has six stages that are sometimes called 'the epochs of media history' (Больц, 2011; Больц, 2012).

Each stage is characterized by the dominance of certain means of communication:

1) the epochs of verbal communication, and

2) the epoch of written language, and

3) the print epoch, called 'the Gutenberg Galaxy' by McLuhan (Маклюен, 2007),

4) the epoch of mass media, or 'the McLuhan Galaxy'[1] (Кастельс, 2000),

5) the era of computer technologies, called 'the Turing Galaxy'[2] by Norbert Bolz [Больц, 2011:12],

6) the epoch of Web 2.0 – virtual social networks and the 'networking'of the society (Больц, 2011; Алексаньян, 2012).

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[1] We want to emphasize that E. Castells meant the system of mass communications (primarily based on TV) under 'the McLuhan Galaxy', but not 'the Internet Galaxy', the rise of which McLuhan could not imagine, although he is believed to be its 'prophet'

[2] It should be noted that the term "the Turing Galaxy" to refer to the era of computer technology was first used by Wolfgang Coy in 1993, as it was observed by Volker Grassmuck, a German sociologist, focusing his attention on studies of the role of media in the contemporary society (Grassmuck, 1994). However, we refer to Norbert Bolz, as he was the first to identify six stages in the development of media, tracing their history from the beginning to the Web 2.0.
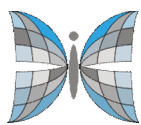
It is impossible to ignore the trend of acceleration in the shifts of the epochs that can be well noticed as every next stage in the historical development of media is much shorter than the previous one. Today we are still trying to comprehend the essence of the epoch Web 2.0, the epoch of social networks, but the mankind has entered the next (the seventh) epoch of Web 3.0 with 'one foot', the epoch of dominance of the 'intelligent environments'3, when computers and the Internet become more and more 'intelligent' and turn to be a natural part of life of an individual in the third millennium. As it is noted by Norbert Bolz, a famous German media theorist of our time, the computer ubiquity is the most important characteristic of the present-day communication bonds, when due to smartphones and laptops people can carry their personal and their work related, concerning their interests and preferences information with them, as well as they can easily share it with others: "A computer that is worn as a dress, serving as an information assistant, that is the direction of paradigm shifts determined by the progressive digitization of our lives" (Больц, 2011: 14).

So, let us analyze the correlation between the technological innovations and the development of media.

The epoch of verbal communication, originated in the prehistoric times, is characterized by the development of rhetorical technique, which did not need any 'external extensions of man'. The invention of writing can be considered the first 'technological' stage in the history of media, as it was needed to use some tools (even the most simple ones – a pen and a sheet of paper), and what is more, writing eventually turned into the form of a printed book.

The technology of printing, having triggered the establishment of the 'Gutenberg Galaxy', was the second stage in the history of media. In fact, the epoch of mass media began since the printed book, but talking about mass media today, we usually mean newspapers, magazines, and most importantly – the radio and TV. These technologies radically changed the usual perception of communication as an interpersonal act in the 'one to one' format, having demonstrated a possibility of another type of communication – 'one to many'.

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3 Today the term 'intelligent environments' is most often used as a synonym for the term 'ambient intelligence', which emerged in the 1990s and became popular due to the development of the so-called Internet of Things. Intellectual environment (in a broad sense) is a new concept to establish the interactions of 'individual-technology-environment', where people are surrounded by intelligent and intuitive interface, embedded in the objects of their daily life (see (Тарасов, 2012: 1)).

It should be noted that today mass media is no longer perceived as 'new' media, since the development of computer technologies, along with the evolution of the Internet have created preconditions for the emergence of really new technologies to deal with information. First of all, it is computer technologies that allowed algorithmization of the processes that were previously considered to be a prerogative of a man, such as thinking, creativity, generation of hypotheses and others. Simultaneously, the discussions regarding the role of computing and the possibilities of computational epistemology in modern science intensified (Vamos, 1991; Thagard, 1998; Hendricks, 2006).

As a result, a conclusion about the formation of a 'new kind of science' was even made (Wolfram, 2002). In the context of media development the given time period, according to H. Bolz, was marked by the formation of the 'Turing galaxy', the galaxy of mechanized (based on computational algorithms) thinking: "As in the days of Goethe the mankind lived in the Gutenberg Galaxy, so now we live in the Turing Galaxy. ...The computer has transformed all the processes of media in the digital processes that is exactly what is meant when speaking of the 'digit', that is, digital media" (Больц, 2011: 12). However, the 'Turing Galaxy' has an inherent potential for the development. The computer technologies, having become the most widespread form of media to the end of the twentieth century, are still developing and, therefore, the 'Turing Galaxy' is changing and transforming.

A transition has been outlined from the algorithmization of the perception and thinking to their 'networking', when the algorithms penetrate into the network interactions (Web 2.0). Then the 'intellectualization' of media technologies increases; these technologies become 'smarter' due to the use of elements of artificial intelligence –the outlines of Web 3.0 become evident, when the intelligent agents, the data mining and other intelligent technologies become ubiquitous and at the same time "invisible" because of their habitualness and dissolution in the network communication routine.

Norbert Bolz in 2007 wrote that the 'invisibility' of the computer is due to its ubiquity and is an important characteristic of modern communication relations. However, today the 'invisibility' and the ubiquity of intelligent technologies, wide spread of which initiates changes of communication, adding the artificial components to them: bots, data mining and others are considered to be more actual.

The main feature of new media distinguishing them from all previous means of communication is that they allow us to
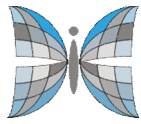
communicate, not only in the format of 'one to one' or 'one to many', but in the format of 'many to many' 4 .Today this form of communication has gained ultimate popularity and has become a precursor of radical socio-cultural changes.

Having postulated the emergence of a new digital generation of media, which is significantly different from the previous ones, it is necessary to expand more on the specific character of new media and to make some conceptual clarification of related terms, such as social media and virtual social networks.

2. New Media Network Specific Character

As we have already noted, new media have emerged as a result of the development of computer technologies and the Internet, and their specific character is determined by their appropriateness for communication in the digital environment. That is why, while speaking of the new media we face a new communicative situation, and when using them we operate in a new communications system. Vin Crosbie in his work "What is New Media?" uses metaphors for explaining the nature of the new media: "Note that the New Medium for communications, like the transportation medium of the sky, is entirely dependent upon technology, unlike the two preceding communications media. Like humans flying with technology, this form of communications can't be done with technology" (Crosbie, 2001 : 5).

In other words, the digital environment that is not designed for the communication of people can be adapted for this purpose with the help of special technologies. This new environment does not cancel all the things that people had previously. It does not prevent us from reading books, listening to the radio or watch TV. It only provides new opportunities, in particular, it allows to join the network communication and realize communication in the format of 'many to many'.

Therefore, Crosby identifies the specific character of new media:

1) individualized messages can simultaneously be delivered to an infinite number of people;

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4 It should be noted that first the well-known expert in the field of Media Management Vin Crosbie in his work "What is New Media?" indicated such a fundamental shift of a communication model (Crosbie, 2001)

2) each of the people involved shares reciprocal control over that content;

3) personal transmission of an individualized message is no longer associated with the limitation 'not more than one person at a time".

Thus new media combine the advantages of interpersonal media with the benefits of mass media, complementing them with new features that were not inherent in either the first or the second media.

However, the observing communication revolution involves a shift from the broadcast to network forms of electronic media. Just the network nature of new media makes the postulation of the 'new epoch' in the development of means of communication, the potential of which has not been yet fully investigated, possible.

Herewith, when speaking about the network nature of new media, it should be noted that the concept 'network' has different interpretations in modern science that makes it difficult to explicate the specific characteristics of the contemporary network media.

Thus, the analysis of the scientific discourse gives an opportunity to highlight at least four equivalent variants of conceptualization of the concept of 'network' in modern science:

1) the 'physical' or 'logistic' one, emphasizing its spatial and geographic aspects;

2) the 'mathematical' or 'logical' interpretation of the network as a computing construct, facilitating the quantitative study of particular networks;

3) the 'functional' interpretation, based on the ontological status of the phenomenon of networks and focusing on the distinctive features of their functioning, and

4) the 'technological' one, inseparably connecting networks with their technological embodiment and subordination to technical standards (see for details (Nazarchuk, 2007; Berdnik, 2012)).

New media theorists (for example, George Gilder, Mark Poster, Sherry Turkle, Bruce Owens, Vin Crosbie, Henry Jenkins, W. Russell Neuman, Lev Manovich), talking about new media network nature, usually have in mind the proper specificity of the network principle of organizing interactions in the digital space, which is a new (and
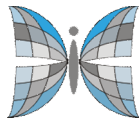
not yet quite habitual) field of social communication. However, on the whole, they relate this specificity entirely to technical innovations and the emergence of the Internet. In other words, the media researchers act on the premise that the social interactions, taking place due to the automated communication networks and being involved in the framework of network technological standards, inevitably follow the network logic. It means free dissemination of personal content among an unlimited number of people without spatial and temporal limitations, while combining various forms of media messages (text, video, sound, etc.).

It should also be noted that in the framework of media studies the concepts of 'network' and 'social network' currently have only technological perception and understood just like a software platform, online service or web site that mediate the communication among people, organize it according to the network principle and enable the intensification of social interactions. Thus, these concepts are merged into one – the virtual social network. In contrast to media studies, in sociology the concept of social networks arose independently from the technological development, so in the sociological environment the identification of social networks with virtual social networks was initially perceived as a profanation. However, apart from the sociological discourse, this identification has already been indicated and we must take this fact into account.

So far the debate as to the reasons for allocation and conceptualization of new or network media have abated, and generally the latter are defined as a combination of interactive communication technologies and digital means for delivering information, where the Internet is a key mediator.

The modern media researchers are primarily interested in the spread of a new communication model ('many to many') and its influence on the change of the ways, by which people prefer to interact with each other. In this regard, the analysis of social media as a part of new media communications becomes more and more popular. The concept 'social media' is associated with the mediation of human communication by means of different network and mobile technologies; all that provides unlimited possibilities for communication and turns it into an interactive dialogue. In fact they are online environments used to diversify and facilitate social interactions, such as an exchange of content: e.g. thoughts, experience and other relevant media data.

Andreas Kaplan and Michael Haenlein define social media as follows: "Social Media is a group of Internet-based applications that build
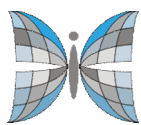
on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (Kaplan, 2010 : 61). Thus, social media are special services that are a technical basis for cooperation and joint solutions of common problems (Hansen, 2011).

At present six types of social media are accepted:

1) collaborative projects (for example, Wikipedia);

2) blogs and microblogs (for example, Twitter);

3) content communities (for example, YouTube);

4) social networking sites (for example, Facebook, VKontakte);

5) virtual game worlds (e.g., World of Warcraft);

6) virtual social worlds (e.g. Second Life) (Kaplan, 2010).

Most of the media services can be integrated on a platform of a social network; that is why, we can more often meet a synonymous use of the terms 'virtual social networks' and 'social media'. The emergence and wide dissemination of this kind of software services (i.e. social media) gave good reasons for modern researches to proclaim Web 2.0 a new stage in the media development.

3. Web 2.0: The Societal Networking and Apology for Collective Intelligence

Web 2.0 is a stage of the development of the World Wide Web, where new media, in particular virtual social networks have become not only the key factor in the transformation of the communications, but have also caused many types of 'network effects'. That is why Norbert Bolz and other researchers of new media began to talk about Web 2.0 as an epoch of network media or an epoch of networking (Больц, 2011).

Networking (merging to form a network or connecting to a network) is a qualitatively new stage in the development of media that enables wide dissemination of the new form of communication 'many to many' and causes multiple social changes. Networking of the society is a process of the network society formation, which, according to M.

Castells, is a specific form of the social structure that can be defined by empirical research as a specific characteristic of the modern times. However, we will only focus on one of the aspects of networking – on dissemination of virtual social networks and the analysis of their social effects.

First, we should stress that the world is already covered overall by social networks. It is clearly seen on the map of social networks, regularly updated by the Italian analyst Vincenzo Cosenza that demonstrates which of the social networks is the most popular in a particular country. But in the context of our study we are not interested in the popularity of certain social services or competition among them, but we are rather concerned with the fact that almost everywhere in the world we can connect to the Internet, all the countries are covered by the networking process, social networks are everywhere where people are (see Fig. 1). Thus, we can with confidence conclude that networking has achieved a global scope, has become widespread.
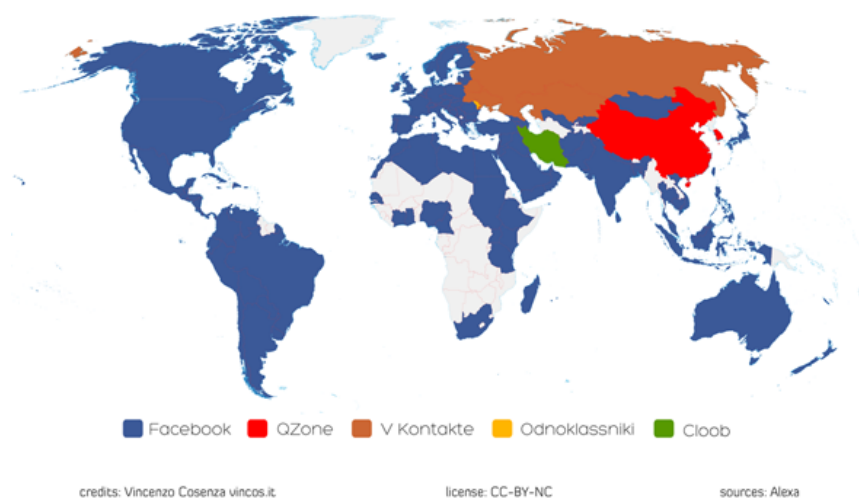

Fig. 1. World map of social networks. Source: (Cosenza, 2012)

The results of various sociological and marketing research also indicate the growing popularity of the virtual social networks. For example, the results of the research of GfK Ukraine Research Company have demonstrated rapid growth of the Ukrainian Internet audience, which size was already more than 15 million people in 2012. That is, every third citizen of Ukraine is already connected to

the World Wide Web. While in 2012, it was social networks that became the most popular service both in the world and in the Ukrainian Internet, for the first time being ahead of e-mail. At least 8.5 million Ukrainians have accounts in social networks. The dynamic of considerable growth of social networks users is worth being paid attention to: in 2009 they were 26% of the total Internet audience, in 2010 – 35%, in 2011– 47%, in 2012 – 56% (Вышлинский, 2012).

Young people, especially students, actually 'live' in social networks. The results of the research of V.N. Karazin Kharkiv National University first-year students, conducted in late 20115, showed that almost all first-year students use the Internet (99%), 95% of them are registered in social networks, among those 67% are registered in several social networks at a time. The responses to the question "How often do you use social networks?" were the following: 3 – 4 times a month – 7%, 3 – 4 times a week – 21%, almost every day – 44%, several times a day – 28 %. This distribution speaks for itself; the importance of virtual communication in the lives of our students is evident (Кислова, 2012).

What have the rapid spread of social networks and their growing importance in modern life brought us? Uppermost it should be noted that the information in social networks converts from the goal into means: the main thing is not the information itself but the fact of communication about the information. The classic McLuhan's formula 'The Medium is the Message' describes the mass media epoch; in the epoch of Web 2.0 this formula is transformed into the following: "The Communication is the Message" (Rantanen, 2005: 143).

The goal declared by social media is to create opportunities of unlimited communication, open access to knowledge and to the cultural heritage of the humanity. It should be noted that in the late XX century, communication has become one of the most important human values; even the search for a new methodology of social cognition was under the theme of communication (e.g. N. Luhmann, J. Habermas, and their followers, supporters of the concept of communicative society). Of course, the World Wide Web has evolved independently of the theoretical search of sociologists, but its evolution has given rise (and is still giving rise) to social artifacts

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[5] This study was conducted in the period from October 24 to November 8, 2011, by the Research Institute for Social and Humanities Research together with the School of Sociology of V.N. Karazin Kharkiv National University. All first-year students were surveyed (except the absent ones and foreign students), N = 1002.
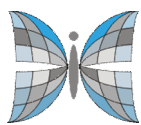
that eventually turn into the usual attributes of existence in the modern world.

Pondering the changes that are taking place, Norbert Bolz observed: "The greatest promise of the future is that, after the stages of archaic tribal community and modern 'alienation' we are on the threshold of a new form of communal life: Web 2.0 being an organized neighborhood based on electronic networks. The true meaning of networks, therefore, is not in the processing of information, but in the development of communities. The tribes of volunteers come instead of the great masses of people. Facebook, MySpace and YouTube are impressive examples of how the 'social graphs' are arising; and they arise from the answers to the simplest question: Who do you know and who knows you? Here is hidden an absolutely new potential of political relations, which gives the leading idea, communication platform, where the common interests and the need for recognition are united. In social networks, the energy of protest turns into a production of social capital – networking instead of rebellions" (Больц, 2011: 4).

It is known that the development of Web 2.0 is primarily due to the change in the concept of interaction with users who have become prosumers and are capable to influence the World Wide Web, making changes to its informational content. At this stage of the Network 'everything has become available to everybody' (texts, films, music, ways of self-expression, etc.). That is why Web 2.0 is often called the social Internet, and the related services are called social media.

Tim O'Reilly, the author of the term 'Web 2.0', explaining the essence of this stage of the development of the World Wide Web, said: " ... the real heart of Web 2.0 is *harnessing collective intelligence*. The world of Web 2.0 can be one in which we share our knowledge and insights, filter the news for each other, find out obscure facts, and make each other smarter and more responsive. We can instrument the world so it becomes something like a giant, responsive organism" (Linden, 2006). Thus, the network principle of organization of communications in Web 2.0 has caused the specificity that distinguishes Web 2.0 from the previous stages of the Internet development, and from the other media types: due to the association of 'many to many' an opportunity to use the collective intelligence, the 'wisdom of the crowd' has been provided that has become the basis for the emergence of new communication technologies, for example, such as crowdsourcing.

Toby Segaran, explaining the essence of the collective intelligence, pointed out: "People have used the phrase collective intelligence for decades, and it has become increasingly popular and more important with the advent of new communications technologies. Although the expression may bring to mind ideas of group consciousness or supernatural phenomena, when technologists use this phrase they usually mean the combining of behavior, preferences, or ideas of a group of people to create novel insights. Collective intelligence was, of course, possible before the Internet. You don't need the Web to collect data from disparate groups of people, combine it, and analyze it. One of the most basic forms of this is a survey or census. Collecting answers from a large group of people lets you draw statistical conclusions about the group that no individual member would have known by themselves. Building new conclusions from independent contributors is really what collective intelligence is all about" (Segaran, 2007: 2).

Collective intelligence is the emergent property arising from the collaboration and competition of many individuals and is expressed as a consensus in decision-making, as the knowledge, born due to the interaction of the data, information, knowledge kept in the minds of different people having united to solve a problem.

For the emergence of collective intelligence, as noted by James Surowiecki, four conditions must be satisfied:

1) the diversity of opinion (on the basis of private information from each member), and

2) independence (i.e. the possibility to have own opinion without pressure from others);

3) decentralization (the presence of special and local knowledge), and

4) aggregation (the mechanism that converts a lot of different opinions into a collective opinion and/or decision) (Шуровьески, 2007).

Collective intelligence is inseparably linked with the culture of participation, resulting from the spread of technology Web 2.0. Thus, Henry Jenkins says there is an inseparable link of media convergence, participatory culture and collective intelligence, accentuating that this trinity is the basis of the convergence culture we see today. As for the collective intelligence, its essence is described by H. Jenkins as follows: "In a culture which some have
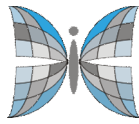
described according to information overload, it is impossible for any one of us to hold all of the relevant pieces of information in our heads at the same time. Because there is more information out there on any given topic than we can store in our heads, there is an added incentive for us to talk amongst ourselves about the media we consume. This conversation creates buzz and accelerates the circulation of media content Consumption has become a collective process and that's what I mean by collective intelligence. None of us can know everything; each of us knows something; we can put the pieces together if we pool our resources and combine our skills…. Collective intelligence can be seen as an alternative source of media power. We are learning how to use that power through our day to day interactions within convergence culture. Right now, we are mostly using collective power through our recreational life, but it has implications at all levels of our culture. … the play of collective meaning-making within popular culture is starting to change the ways religion, education, law, politics, advertising, and even the military operate» (Jenkins, 2006).

It should be noted that at the beginning of Web 2.0 the role of the Internet was to focus on the provision of communication among people and, therefore, collective intelligence was considered to be a product of human intellectual activity. But in recent years the Internet has become much more than just a communication facility. It turned into a source of knowledge, a person to talk to, and an opponent. As a result there is a new kind of collective intelligence, which includes along with the people some electronic assistants (intelligent agents), whose artificial intelligence equally to human intelligence is involved in the generation of new knowledge. Collective intelligence (according to the opinion of the researchers of the Center for Collective Intelligence from Massachusetts Institute of Technology) is "… people and computers be connected so that collectively they act more intelligently than any individual, group, or computer has ever done before" (Malone, 2006). The intellectualization of the World Wide Web, which has become a symbol of the next stage of its development – Web 3.0, is based on 'intelligent' media, and is inseparably linked with the formation of man-machine intelligence, which we will discuss later.

In Web 2.0 social media and their most famous type – virtual social network – became a platform for crowdsourcing, due to the ability to ensure the participation of a large number of people without space and time limitations. Crowdsourcing (here, 'crowd' is a large number of people and 'sourcing' is the 'use of resources') in fact consists of a series of different methods to solve socially significant problems by

many volunteers that coordinate their activities with the help of new media.

The important advantage of crowdsourcing technologies is their relatively low cost, speed, the ability to collect large numbers of people. And the activity, which is carried out online (i.e., in the virtual space), has a very real and tangible results offline (in reality).

Crowdsourcing has demonstrated how people freely (i.e., without compulsion) interacting in a virtual space and pursuing their own (often selfish) goals, can be useful to each other and can provide a benefit for all others, solving problems that seemed unsolvable, finding a way out of the desperate situations. Thus, crowdsourcing created background for the birth of a new kind of team spirit, which is sometimes called collectivism of 2.0, which is an association of individuals (perhaps selfish) to solve common problems.

4. Web 3.0: intellectualization as a factor of new media development

Web 3.0 could be defined as: "Web 3.0, a phrase coined by John Markoff of the New York Times in 2006, refers to a supposed third generation of Internet-based services that collectively comprise what might be called 'the intelligent Web' — such as those using semantic web, microformats, natural language search, data-mining, machine learning, recommendation agents, and artificial intelligence technologies — which emphasize machine-facilitated understanding of information in order to provide a more productive and intuitive user experience" (Spivack, 2006).

Web 3.0 – the Intelligent World Wide Web – is replacing Web 2.0, and its specificity is determined by the intellectualization of the existing services, which includes extensive use of intelligent agents and data mining. It should be noted that the 'intellectualization' in the context of information technology has the meaning, radically different from its interpretation in psychology. The process of introducing the elements of artificial intelligence (AI) in the information technology, which allows to perform technological operations in a manner that is perceived by a person as 'reasonable' is meant under the intellectualization of information technology (see, e.g. (Башмаков, 2005; Кислова, 2009).
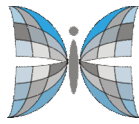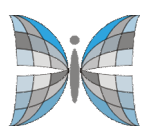
As for the intellectualization of communication technologies, it provides the incorporation of the data mining techniques and intelligent agents directly into the communication process. Thus, the internet search engines act 'reasonably' as due to the use of the data mining techniques, they 'understand' the user requests, seeking the regularities (patterns) in one's 'surfing' in the information space of the web. This allows the search engines to arrange a list of search results, in accordance with the previous requests that contain latent information about user preferences that makes possible to 'guess' the goal of a user and to 'provide' the user with the certain information, to suggest performing the certain actions. By the way, all types of modern online advertising and online marketing are built according to this principle.

Today the Internet has many different intelligent agents, and their number is constantly increasing and along with people they become equal communicants. A striking example of this is the information bots (short for 'robot'), used in some chats to emulate natural communication.

Thus, the intellectualization of communication implies that the media transform from a communication tool into the tool of analysis and communication. Media are becoming able to analyze the information recipient. This gives us the right to say that the media environment itself transforms from the communication tool into a 'participant' of the communication process.

In this context, one can not forget the works of Bruno Latour, who long before the emergence of Web 3.0 had realized the need to involve in the focus of attention of sociologists, non-humans, having influence on people, their social relations, and even stimulating the emergence of new kinds of sociality. So, thinking about what is missing in modern sociology, B. Latour wrote: «To balance our accounts of society, we simply have to turn our exclusive attention away from humans and look also at nonhumans. Here they are, the hidden and despised social masses who make up our morality. They knock at the door of sociology, requesting a place in the accounts of society as stubbornly as the human masses did in the nineteenth century. What our ancestors, the founders of sociology, did a century ago to house the human masses in the fabric of social theory, we should do now to find a place in a new social theory for the nonhuman masses that beg us for understanding» (Latour, 1992: 153). This view of the social relations is of particular relevance in the era of Web 3.0, where 'normal mechanisms' have acquired 'intellectual' property. They influence what (i.e. what data or

information) will be the basis for our further discussion. Therefore, they also influence what result of the collective mind will be.

Thus, the intellectualization of the World Wide Web gives rise to the beginning of a new stage in the development of the media – the beginning of the era of 'smart' media (Intelligent Media). At present these media are in a very early stage of their development. Unfortunately, they primarily attract attention on the part of business structures; their heuristic potential has not been fully realized by social researchers. What is meant by intelligent media? While answering this question, we suggest a definition proposed by the CustomScoop company: "Media Intelligence is the process of gathering all the data available through Social Media and News Media outlets and analyzing the data to allow for better business decision making" [CustomScoop]. As we can see here, Intelligence Media is understood more as media intelligence search, as a monitoring of the information content of the media resources. However, it is due to the pragmatic goals of the business and does not limit the ability of other intelligent media application.

The representatives of computer science dealing with the development of intelligent media represent them as intelligent agents to help users find information that satisfies their interests and needs (Wittig, 1999). Developing this idea, at present intelligent media are considered by the developers of intelligent systems to be the basis of intelligent man-machine collective mind. In this context, the problem of 'understanding' in the process of 'communication' of humans and 'artifacts' (nonhumans) is of primary importance. So, Toyoaki Nishida observes: "One of the major problems that might hinder the construction of the knowledge society on the information network is what I call the understanding and communication bottlenecks, which might be caused by the limitation of human cognitive capability. ... I present Communicative Intelligence as a step towards solving the understanding and communication bottleneck by inventing communicative artifacts that enable people and artifacts to interact with each other in a natural fashion. I focus on conversational communications in particular, for conversation is the most natural means for communication. I believe that making conversation-rich community contributes a lot to resolve the understanding and communication bottlenecks. Intelligent media technology aims at inventing communicative artifacts which allow people and artifacts to interact with each other in a natural fashion and thereby enable conversation-rich knowledge society" (Nishida, 2005). And in his further publications he already raises the question of the 'socialization of the artifacts', which is actualized due to their

even more total involvement in the communicative processes of Web 3 (Nishida, 2007).

Summarizing all mentioned above, we emphasize that Norbert Bolz identified six epochs of media history, having called the latter one the 'Networking Era'. We can state the beginning of the seventh era of the media history – the era of intelligent media when communication is mediated by artificial intelligence, when social interactions in the digital environment include artifacts as full communicants.

5. New Media Socio-Cultural Effects: Formation of Network Culture and Actualization of Network Subjectivity

The distinctive features of new media considered above, as well as the perspectives of their further development connected with the emergence of essentially different ways of realization of communicative activity, cause the necessity to analyze the socio-cultural consequences of such transformations. First of all new the principles of social space functioning caused by wide circulation of network logic of realization of communicative activity are of prime interest.

Primarily they comprise the network forms of the cooperative organization of social subjects, which change an entangled hierarchy of vertical relations, and, as a matter of fact, represent new, unknown earlier, models of the sociality. The changed conditions of communication, and due to the fact that other means of homeostasis development have emerged, also cause transformation of the subjectivity, when the communicative component or communicative subjectivity now become the determining factor. Let us expand more on these new principles of the society functioning, initiated by the ubiquitous dissemination of network media.

At present, the new forms of sociality and the integrating or disintegrating role of new media in the society are the most debatable problems among sociologists. At the same time, on the one hand, many researchers express their apprehension as to the growth of individualism, social isolation, mere escape of the modern people from the reality into a virtual one and 'the end of the social'. Thus, M. Castells asserts that the more the information flows are being intensified and the virtual networks are being disseminated the less

considerable the influence of the local social context is going to be. The author constructs his theory of the network society, relying to a large extent, on the conception of the network individualism (Castells, 2000).

Another researcher, the noted Canadian sociologist Barri Vellman, studying the evolution of the social communities, observes that in the contemporary society the processes of gradual liberation of individuals from the influence of the social systems (groups, local and industrial communities) become more active. The author also asserts that a new model of sociality in our society is characterized by the network individualism (see, (Wellman, 2003; Zhao Wellman; 2011)). Similar tendencies are noted by the sociologist Zigmunt Bauman in his work "Individualized community", as well (Bauman, 2002). Author states the 'emptiness in the agora' – the place, where citizens would discuss social problems, 'the place of the meetings, disputes and dialogue between the individual and the common, the private and the social' (Bauman, 2002:137).

On the other hand, with the development and the ubiquitous dissemination of new media it becomes evident that the virtual Internet space with its social networks, diaries and blogs is the place for meeting of the modern network individualists. It turned out that social media, which create a high activity of the network users, on a large scale, encourage the self-organizing.

At the same time the communicative space arising on this basis, is perceived by individuals as the space of genuine freedom, unlimited neither by the state, nor by the boundaries, or distances. Concerning that, it is hardly possible to say about 'the end of the social', it is rather a question of dying out of some obsolete forms of the social and their replacement by new ones.

In other words, it is not the social that is approaching its end it is our former understanding of it. Many modern researchers of socio-cultural effects of new media point out to the fact that the network society is not a society of isolation, but a 'hypersocial' society, based on a different quality network type of sociality, the so-called collectivism 2.0, which in due course promises to be transformed into the collectivism 3.0.

It is necessary to note that such sociality is based on the grounds of a different quality, in contrast to the types known earlier, which are traditionally analyzed within the framework of the dichotomy of 'collectivism-individualism'. The network sociality is relative, because it is not the integration of all individuals lies in its base, but
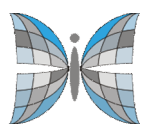
the selection of those who are identified as 'friendly' against the background of 'others'. We believe that today ontology of the social being, penetrated by network media, is formed on the basis of the distinctions, instead of the unity, therefore a new type of sociality should be considered now through the prism of the communications and the communicative community, based on the uniqueness of personal views and beliefs.

So, the transformation of the model of sociality caused by wide dissemination of network media, leads to the formation of the specific communicative background of the involvement of an individual in the social relations, and also to the rise of alternative mechanisms of socialization and the determination of identity. The changed communicative conditions advance new claims: the constant development of an individual, the improvement of the communicative skills and abilities, the enhancement of own boundaries, the pluralization of individual attitudes and life styles.

In this context the problem of the formation of social subjectivity is put forward, in the formation of which the communicative processes and communicative activities have always played the key part. Namely the qualitative transformation caused by the intensification of the communications, transforms the presence of active communicative principles into the determining factor of the formation of social subjectivity, which implies the implementation of the independent, purposeful, responsible activities influencing other social subjects. At the same time it is to be noted that in the terms of wide circulation of the network logic of realization of communicative activity, on the basis of the application of new technological means of communication, wide opportunities for popularization of own evaluation grounds, dissemination of the information (including obviously false information) among big masses of people, manipulations of the public opinion develop. The internal value estimations and cultural and ethical norms of each social subject, according to which the information will be eliminated, will be accepted or will be disseminated, become more important than the truth or the reliability of one or another notion. Therefore we believe that the processes of socialization, the search for identity and the involvement of an individual into the full of value social life (i.e. the formation of social subjectivity), occurring in the conditions of the information-communicative expansion and the ubiquitous dissemination of network media, should be built on the basis of the formation of communicative subjectivity, which is such an attribute of a social subject (an individual or a group), which makes it to be the source of communicative activities, and is displayed in the purposeful activity, aimed at the information exchange, as well as at
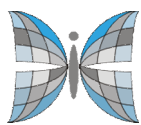
the establishment, development, maintenance of social relationships and interactions due to the objective (external) and subjective (internal) means of realization of communicative activities.

Thus, mastering of the latter implies the elaboration and/or adoption of value-regulatory mechanisms of realization of such an activity (i.e. internal or subjective means), as well as free use of technological means of its implementation (i.e. external, objective means). As a matter of fact, in the contemporary reality it is considered to be necessary to form network subjectivity, since the communicative activities, which are the basis for social interaction, are even more often realized due to the network media-technologies according to the new reasons and value controls of their realization.

Therefore, ontology of the modern social (socio-cultural) life is formed in the changed communicative environment on the basis of the new network forms of sociality. The normal functioning of the latter implies the formation of network subjectivity – such an attribute of a social subject, which makes it to be the source of communicative activities, and is displayed in the purposeful activity, aimed at the information exchange, as well as at the establishment, development, maintenance of social relationships and interactions in the conditions of the network communicative space, on the basis of a new value-regulatory matrix and network media-technologies.

The considered above changed functioning principles of the social space, initiated by the transformation of communications and the network logic penetration into the social processes, urge many researchers to make suggestions of deep cultural shifts, which are developed in the formation of network culture. As a rule, scientific comprehension of a new phenomenon takes place from the external to the internal, i.e. it begins from the fixation in the environment and the enumeration of the external attributes distinguishing it from other phenomena of the same type.

Then the embedding into the general system of knowledge takes place, resulting in comprehending the nature, the internal structure, and the reasons for the rise and the principles of the development of the phenomenon under study. The process of scientific comprehension of the phenomenon of network culture, which is today at the stage of the distinguishing and enumeration of the main attributive characteristics, manifestations, properties and the artifacts of this new for us culture follows this way. So, the noted Western theorist of the network society M. Castells in his global research "Information age: economy, society and culture "(Кастельс, 2000) analyzes the peculiarities of the new culture and points out its
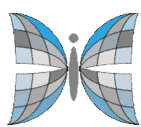
characteristic features: the leading role of the network media-technologies, the interactivity of the subject, the transferring of the processes of symbolic exchange to the virtual space.

The Russian researcher L. Nurgaleyeva, following M.Castells, considers the network culture through the prism of the historical process and correlates it with the new network method of social interaction, the experience of which defines the modern objective reality as something different from the previous historical epochs. Examining modern transformations from the standpoint of axiological approach, the author outlines the main ethic patterns of the network culture, defining the latter as the 'occurrence of values in global electronic environment' (Нургалеева, 2004). In the opinion of L. Nurgaleyeva, to the characteristic features of the new ethical system, formed on the basis of the actual experience of relations in the network society, it is possible to refer the following: the 'decentration of an individual and the social medium', which causes the loss of identity of an individual and the ethics of the 'network individualism' emerges; the formation of dominant values and interests, as a result of the change of spatial-temporal characteristics, regardless to the past and the future on the timeless scale, as well as without orientation to the official ethical authority; the shift to the sphere of non-material values – the priority of possessing material values yields to the power of symbolic forms, the development of ideal domains and new images; the increase of the role of the marginal formations and non-traditional cultures, since the latter possess a specific potential for adaptation and reproduction; the presence of diverse forms for knowledge presenting on the basis of the hypertext reality.

O. Astaphyeva in the article 'The Synergetic discourse of the modern information-communicative processes' also observes the transformation of social in general and individual value guidelines, of means and forms of communication among people. At the same time the network culture phenomenon reflects a specific system of structural interactions in culture of the information society, 'developing naturally and spontaneously on the basis of different levels during the contacts of people – their nonlinear interactions' (Астафьева, 2010). The prevalence of the virtual-mythological consciousness above the knowledge is characteristic for a new culture. The author notes, as well, that the designated phenomenon is considerably broader than the 'network communicative space', formed due to the Internet.

The philosopher and culture expert I. Dokuchayev (Докучаев, 2012) also puts forward a hypothesis of existence of a new 'network' type

of culture and allocates traditional, creative and network types of culture. In the opinion of the author a unique synthesis of the society and an individual – the social network becomes the subject of network culture. The social network is a society; however, it is substantially differentiated and consists not from the members carrying social values, but from the quasi-personalities aspiring to independence and uniqueness of their own valuable thesaurus. The social network has its own values, but they are indefinite and varied. I. Dokuchayev considers the 'global performance' to be the main artifact of the new culture. The 'involved indifference', which is realized by means of the involvement of an individual to the public and simultaneously removed (due to its sacralization, virtualization, and so on and so forth) action is a paradox sense of such a performance.

Completely agreeing with the external manifestations, specific properties and characteristic features of network culture listed above, we will try to reveal the specific features of the given phenomenon and to conceive principal causes of its occurrence. We will make a start from the necessity to define, primarily, the closest generic type of the phenomenon under study, and then to reveal its specific difference.

So, as a generic concept, allowing to distinguish network culture from the phenomena of another class, we allocate the culture in its activity based comprehension, i.e. as the way of activity, covering all non-biologically produced means and mechanisms of human activities. Hence, the human suprabiological activity is the system forming attribute of any culture, the factor of its rise and development. In our case, the network communicative activities or the network communications of social subjects are the generating basis of network culture, determining its specific difference.

It is possible to refer the following to the specific properties of the latter: electronic mediation; the decentering regulation of the communication flows; spatial-temporal compression and multichannel parallelism, extended by the opportunities of the subject in the processes of essence formation and symbolical use. Therefore, network culture is a subsystem of general culture in the society, and it appears, in the most overall view, as a way of realization of communicative activities of social subjects in the conditions of intensification of the contemporary information space and ubiquitous dissemination of the network media-technologies. The category 'method of activity' includes internal subjective means of activity (i.e. value-regulatory controls of the network communications), external objective means of the realization of

activities (i.e. network media-technologies), as well as its products (i.e. the results of the network communications of social subjects expressed in the formation of new types of sociality, communicative subjectivity, etc.).

Thus, on the basis of the stated above, it is possible to prove that the phenomenon of network culture is caused by the change of the leading type of communicative activities and, reflects a new value-regulatory matrix of communicative activities, which arises and is realized due to the network-media technologies. The introduction of the concept 'network culture' in the thesaurus of modern science is associated with the necessity of the conceptual characteristics of the network forms of communicative activities of the social subjects and the comprehension of the new cultural phenomena, which have arisen on this basis.

Summarizing the comprehension of the socio-cultural effects of the ubiquitous dissemination of new media, it is possible to state their powerful transforming potential in the social processes, which has initiated the rise of the network type of sociality, has deduced the importance of the communicative subjectivity of individuals and its network forms, as well as has enabled the transformation of the leading method of the realization of communicative activities, the rise of network culture and the change of the society functioning logic.

6. New Media + Sociology = Digital Sociology

The idea of the necessity to develop digital sociology 'soars in the air'. The researchers, using analytical tools, embedded into new media, note that in the modern conditions the format of sociological research changes (see (Wynn, 2009; Neal, 2010; Lupton, 2012; Casilli, 2012; Orton-Johnson & Prior, 2013; Carrigan, 2013)). It inevitably results in the necessity to reflect the consequences of methodological changes in sociology caused by the expansion of the new ways of comprehension of the social reality. In this context, the statement made by John Holmwood (John Holmwood): "Sociology is a discipline that has to be 'achieved', or continually re-invented, in new circumstances" (Holmwood 2010: 649), acquires a specific relevance.

The logic of justification the necessity to form digital sociology is evident. The rapid development of digital media, which are a technological basis of a new (digital) environment of human existence, has provoked the necessity to reflect the 'new social reality', which arose due to the enhancement of the social reality on

the account of the incorporation of 'digital dimension'. It resulted in the emergence of the concept 'digital society', which has come in use to designate the highly technological society, where information and communication digital technologies are used everywhere: at work, at home, on holiday. Thus, the digital society is the phase of the development of the information society caused by prevalence of the digital technologies. According to this logic digital sociology is sociology of the digital society.

Let us point out that the term 'digital sociology' has only recently been articulated in the sociological discourse. Due to this reason, there are distinctions in the interpretation of its intrinsic characteristics and there is no exact definition.

Let us turn to the reasons of the emergence of digital sociology, its allocation of as a sub-discipline within sociology. The first of them is the revision of the methodological basis of sociological research, which started due to the expansion of new media almost into all the domains of the vital activities of a modern individual that cardinally changed a traditional perception of the social reality, expanding it towards the virtual online world. As a result, the sociological research gradually began to shift from the offline into the online, and the methods of sociological online-research began to assume ever greater importance.

Due to that, along with the adaptation of the traditional methods of receiving sociological information (a survey, an interview, an observation, etc.) the search for the opportunities of the digital environment incorporation for data acquisition as to the diverse social phenomena began. This point, as we believe, is the key one in the historical context of the development of the methods of sociological research. At present its value has not been well realized yet, however, it does not diminish the importance of the emergence of a new criterion of classification for the methods of sociological research, according to which they are differentiated as 'digitized' and 'digital'.

Under the 'digitized' (or 'virtual') methods the methods of sociological research are meant that were transferred from the traditional reality (offline) into the Internet virtual reality (i.e. in online) and were adapted to the online specific character of sociological research, conducted in the Internet. The 'digital methods' are the methods, which were initially developed for the 'digital environment' (see (Rogers, 2009)), so they cannot be used without new media. The ontological distinction of the 'digital' and 'digitized' methods of sociological research is based on these

concepts. The digitized sociological methods 'operate' in two worlds: the 'digital' one and the 'real' (physical) one. The digital methods only operate in the 'digital' online world; they cannot be transferred into the offline one.

It should be noted that the 'digitizing' of the traditional sociological methods is an urgent task but it has not been yet solved up to the end. The problems of the representativeness of the sampling in the Internet-surveys, the characteristics of the meeting of online focus groups, the specific character of the content-analysis of the Internet content and other are actively discussed at present. However, the sociologists cannot confine themselves to these methods, as the digital environment of human life dictates its terms, forces to use the methods induced by its specific character. The 'cultural analytics' by L. Manovich, based on the use of the variety of Google analytical opportunities can serve as an example (Manovich, 2007). As one more example, the digital anthropology by D. Miller and H. Horst, presenting the methodology of research in modern digital practices, as well as the interrelation of the 'human' and 'digital' loci of the life of an individual in the digital age, can be considered (Miller Horst). This list tends to be infinite, but we will confine it to the works of B. Latour (for example, (Latour, 2011; Latour & Rogers, 2012; Latour, et al, 2012)), where the interrelation of the development of the digital methods of social cognition with the formation of digital sociology is explicitly demonstrated. At the same time, according to B. Latour, sociology, on the whole, and digital sociology, in particular, are not either purely the academic knowledge, or simply the empirical science, but the tool of transformation and primarily the transformation of the sociological thinking, and then the social reality itself.

It would seem that the emergence of the digital methods should merely expand the research wealth of the sociologists, adding new opportunities to the traditional ways of the receiving sociological information, at the same time not having changed the methodology of sociological research. However, we observe the opposite state of matters. Moreover, the digital reality turned out to be so specific that it itself has become the subject of the research interest for sociologists.

The second factor of the formation of digital sociology is the dissemination of the new types of secondary sociological information and the activation of the implementation the methods of 'mining' into practice of sociological analysis. If earlier as the secondary information the results of the previous sociological research were only used, then at present the opportunity to use the

diverse indirect information for the purposes of the sociological analysis is proved: the data being the digitized results of various population censuses, the results in the research of the dynamics of economic indexes, etc. (for more detail, see (Savage Burrows, 2007)).

At the same time the specific attention is paid to such a type of secondary information, as 'digital by-product data', under which the data accumulating in the digital space as a by-product of daily practices and cultural interactions is meant (see, for example, (Beer, 2012)). The data generated by the Internet users during their 'digital life activity' are meant: online-purchasing, viewing the profiles of the friends in the social networks, browsing the certain Web pages, etc. The attention of the marketers has already been drawn to these data for quite a long period of time as they use them for the construction of the profile of the consumers and the organization of the contextual advertising. At present such data are used by the sociologists for the research in various social phenomena (He, 2012; Lupton, 2013).

As Zeyi He observes, a researcher of social aspects of Web 2.0, the deconvolution of the daily digital records provides a communication map, which as if the thread of Ariadne leads a researcher across the digital labyrinths of the World Wide Web. The digital data as to our being in the digital reality are the source of the latent information about us: who we are, what we have done, what we want and why. These data stimulate better understanding of our society and our nature, in particular (see (He, 2012)), and their processing requires a wide implementation of the technologies of the intelligent data analysis (or the data mining), as the 'road map' have wide scopes and hide the 'information nuggets' in the mass of the 'information gibberish'.

The third reason for the formation of digital sociology is the crisis of empirical sociology, caused, first of all, by the crisis of the method of public opinion survey. As, we have already noted earlier, the formation of the digital reality as a part of the social reality, the forthcoming of a great number of digital data, which can be used as the secondary sociological information, caused the necessity to use the specific methods of research in the digital environment and the analysis of the digital data. However, as Andrew Abbot observed, sociology turned out to be absolutely unprepared to solve the problems mentioned above (Abbott, 2000: 298). Thereupon, he predicted that the most important task of empirical sociology in the forthcoming 50 years would be the problem of the use of the digital data as the basis for sociological research, as well as the development of the appropriate 'digital' methods of their analysis. Mike Savage and Roger Burrowz, in their turn, postulated the coming
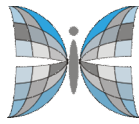
of the crisis of empirical sociology, which they connected with the minimization of the importance of the random sample surveys along with the forthcoming of a great number of digital data in an indirect way reflecting the diverse social processes. Thus, they call to look in a new way at the descriptive research and to involve the heuristic potential of the data secondary analysis in full, focusing on the indirect evidence and "collateral digital data", as new sources for sociological information (Savage & Burrows, 2007).

The fourth factor for the formation of digital sociology is the 'digital revolution in social theory'. Bruno Latour focuses attention on the fact that the use of the digital methods of analysis towards digital (including digitized, as well) data opens new perspectives in the formation of sociological theories (Latour, 2011; Latour & Rogers, 2012; Latour et al, 2012). He insists: "The true digital revolution in social theory is to open a way whereby it is possible to study the individuals and their aggregates without relying at any point on two levels, without accepting any discontinuity where the individual action disappears mysteriously into a sui generis structure" (Latour, 2011: 809).

The Australian sociologist Debora Lapton, provoking discussions regarding digital sociology, puts forward a question: "What is digital sociology? Why is the term not commonly used, when the terms 'digital anthropology', 'digital cultures' and 'digital humanities' have been employed for some years?" (Lupton, 2012: 3). She believes that such a situation is connected with the certain stagnancy of the sociologists, not hastening to use new (proper social) media in the research practice, and outlines the circle of the problems, which, in her opinion, narrow the domain of digital sociology: "Professional digital practice: using digital media tools for professional purposes: to build networks, construct an e-profile, publicise and share research and instruct students. Sociological analyses of digital media use: researching the ways in which people's use of digital media configures their sense of selves, their embodiment and their social relations. Digital data analysis: using digital data for social research, either quantitative or qualitative. Critical digital sociology: undertaking reflexive and critical analysis of digital media informed by social and cultural theory" (Lupton, 2012: 5).

We are very much impressed by enthusiasm of Lupton in advancing new tools of sociological analysis; however, it is impossible to agree with the fact that she narrows 'digital sociology', first of all, to the new ways of communication, provided by digital media. In search for the answer to her question, we draw an analogy. Under the terms of 'economical sociology', 'political sociology', 'information sociology'

and other sociologies it is accepted to designate special sociological theories (in accordance with R. Merton interpretation). Their formation usually began with the allocation of the specific character of the object and the subject matter of these branches of sociological science and only then the allocation of the specific methods of the acquisition and analysis of the information.

The formation of digital sociology infringes the traditional algorithm. We have specific digital methods, digital data, but we do not have special 'digital theory'. We believe that for the development of digital sociology along with the activation of the efforts on advancing the digital methods in sociological research it is necessary to initiate discussions regarding the purposes, the object and the subject matter of this new branch of sociology. At present it is too early to talk about 'digital sociology' as special sociological theory. Unfortunately, today those who call themselves as 'digital sociologists', are mostly so fascinated by the new (digital) methods that at times they forget about sociology. Yet, there is no doubt that the new methods should be advanced and introduced into practice in sociological research. We are fascinated by their opportunities, as well, and we believe that at the present stage of the technological development the use of the digital methods in sociology is urgent, as the changed (digitized) world is difficult (if, at all possible) to study in an old way. But if to be only focused on the methods, then the point is not the formation of a new sociological branch – digital sociology, at all, but the enhancement of the wealth of sociological methods. This enhancement is definitely necessary, and it has already been initiated. However, the term 'digital sociology' still assumes the development of special sociological theory.

In our opinion, digital sociology has the potential for the transformation into a special sociological discipline and in due course it will most likely justify this status. However, to make it true the discussions should not be only limited by the specific character of digital methods in sociological research and the opportunities of their use for the analysis of certain social phenomena. These discussions should include, as well, the specification of both the object and the subject matter of digital sociology.

We believe that digital sociology is called to research the laws of social life of a modern individual integrated into the digital space, created on the basis of new media. The object of digital sociology is a digital society as a new socio-cultural reality. The subject matter of digital sociology is social relationships, arising in the digital environment, digital social life, including the diverse social
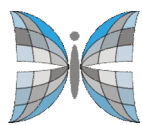
phenomena, arising in the digital environment, as well as their interrelation with the 'real' social reality.

The digital environment (new and not yet completely studied world) from the futuristic fib actually has already turned into the everyday life of the XXI century. This environment became an integral part of social reality and simultaneously a factor of drastic social changes. Such phenomena, as digital culture, digital divide, digital identity, digital socialization, digital subjectivity, etc., at present arouse interest, but not surprise. From the sphere of fantasy they have been transferred to the everyday life of a modern individual. Thus, it is possible to draw a conclusion that probability of the development and the implementation of digital sociology is quite comprehensive. Nevertheless, should it exist or not depends on our joint efforts, as we have already had the experience "to forget" sociologies that have not been completely advanced (for example, cybersociology or information sociology, which were removed to the second place by Internet sociology).

Summarizing the stated above, let us emphasize that even if digital sociology do not become special sociological theory, the discussions regarding it are quite useful. Moreover, the digital methods in sociological research, most certainly, in the near future will take a notable place in the research wealth of sociologists.

Conclusions

1. The emergence of the digital technologies caused a new stage in the development of the human civilization – the digital age, which is characterized not only by the transition to the digital data carriers, but also by the fact that social reality has expanded due to the rise of the new (digital) dimension. At present we 'live' simultaneously in two worlds: the traditional real (physical) world and the digital world, which, in spite of its ephemerality, much more actively influences the events of the real world. Therefore, the research of the specific features of the digital reality and the characteristics of its influence on the 'physical' social reality are actualized.

2. The digital social reality is a generation of new media, it is inseparable their part and parcel. Therefore, the research of the digital social reality is closely connected to the research of new media, to the analysis of the heuristic potential of the analytical tools of Web 2.0 and Web 3.0, as well as the comprehension of the socio-cultural consequences of the development of the Internet-technologies.

3. New (i.e. digital) media are based on the network principle of organization of communicative interactions, which is the basis for the network culture formation. We consider network culture from the standpoints of activity based approach and define it as the conglomerate of value-regulatory mechanisms, of technological means of realization and the results (effects) of network communications. In this context the research of communicative (and subsequently network and digital, as well) subjectivity is of particular relevance. The formation of network culture is considered to be the result of the networking in the society and serves as the basis for the subsequent cultural transformations – the rise of digital culture, the outlines of which can be seen along with the ubiquitous digitization.

4. The intellectualization of communications, occurring in web 3.0, is a factor, which will allows to differentiate network and digital cultures in the future. We suppose that their main difference is that the importance of the artifacts (artificial intelligent agents) is actualized in digital culture. The consequences of this process have been not yet researched and need to be comprehended and corrected.

5. We consider digital sociology as sociology of a highly technological digital society. Its rise is due to the technological development and the emergence of new media, which have fundamentally changed the traditional considerations of social reality and social interaction. Digital sociology is called to investigate the maxims of the digital society, but not just to use / to propagandize new (digital) methods for research in the social phenomena.

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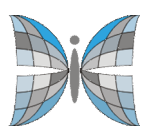Kaplan A M, Haenlein M (2010) 'Users of the world, unite! The challenges and opportunities of social media', Business Horizons, 53 (1), 59-68. Available at: http://openmediart.com/log/pics/sdarticle.pdf

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