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# New «connectography»: networks of cities in the global world

## Nueva «connectografía»: redes de ciudades en el mundo global

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**Content**



**ABSTRACT:**
The article is devoted to the study of the transformation of space as one of the fundamental dimensions of human life. First, we analyze sociological theoretical and methodological concepts, which deal with the constitution of new features of society – network society. Second, we consider "connectography" as a new paradigm of the global organization. In our opinion, connectivity changes the nature of geopolitical competition. Smart cities are examined as the basis for effective interaction in conditions of connectivity.
**Keywords:** Connectivity, urbanization, smart cities.

**RESUMEN:**
El artículo está dedicado al estudio de la transformación del espacio como una de las dimensiones fundamentales de la vida humana. Primero, analizamos los conceptos teóricos y metodológicos sociológicos, que se refieren a la constitución de nuevas características de la sociedad: la sociedad de redes. En segundo lugar, consideramos la "conexión" como un nuevo paradigma de la organización global. En nuestra opinión, la conectividad cambia la naturaleza de la competencia geopolítica. Las ciudades inteligentes se examinan como la base para una interacción efectiva en condiciones de conectividad.
**Palabras clave:** Conectividad, urbanización, ciudades inteligentes

# 1. Introduction

A technological revolution of historic proportions is transforming the fundamental dimensions of human life: time and space (Castells, 2002a). Scientific discoveries and new technologies extended boundaries of working time and made possible inter-action and cooperation previously impossible due to great distances. According to Castells, the most important discoveries were made in 1970s: microprocessor was invented in 1971; gene-splicing techniques were discovered in 1973; the microcomputer was introduced in 1975 (Castells, 2002a). These technologies allowed complex work management and coordination, which resulted in unprecedented combination of flexibility and quality of performance, coordinated decisions and their decentralized execution, individualized self-expression and global horizontal communication.

Information and communication revolution started in 1970s and facilitated global processes in the world. The consequences of that revolution transformations affected to varying degrees, all

members of the international community in the socio-political, economic and cultural spheres (Osipova, 2014). Introduction of computer-based manufacturing systems, new transport and communication systems increased connectivity, interdependency and interaction on all social layers and in all areas – economics, politics, culture, science and education (Polyakova, 2015). Consequences of revolutionary transformations changed the life of modern people beyond recognition and made modern social scientists to recognize new features of society.

Society formed due to development of information technology, was recognized as information society (Castells, 1996, 2009; Toffler, 1990). Development of information and communication technologies (ICT) accelerated the globalization and led to emergence of networks, which connected actors in different parts of the world. The digital addiction is worldwide and a frantic race to connect and to catch up takes place at almost all developmental levels (Hassan, 2004). Interaction of agents has greatly increased, and interpersonal communication has been replaced by virtual communication. Today's network systems are able to operate in real time on a global scale. Multitude of simultaneous inter-crossing threads shape the modern society, leaving their global marks in the capital, migration, goods, information, images and communication flows (Vershinina et al. 2015).

## 2. Methodology

The methodological basis of the research is formed by the theory and applied analysis of the "network" society. Modern sociology provides a number of theories analyzing the modern society based on the influence of new information and communication technologies. Van Dijk (van Dijk, 2006) extensively describes theories of information and network societies. According to him, theorists of information society focus their attention on substance of activities and processes in this new society. Network society theorists, on the other hand, speak about transformation of organization forms and (infra)structure of society.

Barney (Barney, 2004) uses the term network society for characterizing "societies that exhibit two fundamental characteristics: The first is the presence in those societies of sophisticated – almost exclusively digital – technologies of networked communication and information management/distribution, technologies which form the basic infrastructure mediating an increasing array of social, political and economic practices… The second, arguably more intriguing, characteristic of network societies is the reproduction and institutionalization throughout (and between) those societies of networks as the basic form of human organization and relationship across a wide range of social, political and economic configurations and associations" (Barney, 2004).

As Hassan points out, there are four principal dynamics or interconnecting "scapes" that need to be made explicit to help us think about how we live in the network society: "Digital Technology", "Digital Capitalism", "Digital Globalization" and "Digital Acceleration" (Hassan, 2004).

Social structure of the network society is built around networks, which are activated by digitized information and based on functioning of communication technologies. The structure itself is a network. The world is standing on the verge of radical transformations: "the material foundations of society, space and time are being transformed, organized around the space of flows and timeless time" (Castells, 1996). Networks functioning in unified space of flows, link up the whole world, and at the same time, make people in local spaces more and more disconnected from each other. Negation of time in the networks of the space of flows results in "timeless" time. The end of history, enacted in the circularity of computerized financial flows or in the instant "surgical" wars, overpowers the biological time of poverty or the mechanical time of industrial work (Castells, 1996). The social construction of new forms of space and time develops a global network.

Van Dijk argues: "networks are becoming the nervous system of our society, and we can expect this infrastructure to have more influence on our entire social and personal lives than did the construction of roads for the transportation of goods and people in the past" (van Dijk, 2006).

Network is an aggregate of interconnected points or nodes. Each network has its own specifics. Thus, the elements must be defined separately in each individual case. Networks are agile and open structures capable of dynamic changes. They permeate every aspect of modern social

life: in economics, they shape the global market; in politics, they facilitate solution of social problems. Massive communication networks create homogeneous culture, drug traffic networks facilitate rapid development of organized crime, et cetera. All these networks are very different, but the common element here is their presence in every part of the world, and they have considerable influence over development of social practices. One might say that the world is witnessing the emergence of a new social order (Dobrinskaya, 2016). "After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages, human beings had extended their bodies in space. Today, after more than a century of electric technology, they have extended their central nervous system itself in a global embrace, abolishing both space and time as far as the planet is concerned" (McLuhan, 2003). With the development of the Internet, and with the increasing pervasiveness of communication between networked computers, the humanity is in the middle of the most transforming technological event since the capture of fire (Wellman & Haythornthwaite, 2002).

Modern technologies allow communicating with friends, making purchases, working and making money in any part of the world if person have a computer linked to World Wide Web. Electronic cottage Toffler (Toffler, 1990) dreamed of might be real. These changes were bound to leave their mark on the social space and its perception. City in its traditional sense, common before the age of information, is not necessary anymore, and it quickly loses its relevance. Spatial boundaries fall rather quickly, firstly between cities and suburbs. Internet plays an important role in this process. According to Castells in the "last quarter of the twentieth century, three independent processes came together, ushering in a new social structure predominantly based on networks":

1) needs of the economy for management flexibility and for the globalization of capital, production, and trade;

2) demands of society in which the values of individual freedom and open communication became paramount;

3) extraordinary advances in computing and telecommunications made possible by the micro-electronics revolution. Under these conditions, the Internet, an obscure technology without much application beyond the secluded worlds of computer scientists, hackers, and countercultural communities, became the lever for the transition to a new form of society-the network society-and with it to a new economy (Castells, 2002b).

Scientists now say that globalization reduces the significance of cities, and locale now is not as important as it was in the past. Access to broadband Internet becomes the main indicator of comfortable urban environment: "sitting in a cafe in the center of Saint Petersburg, you make a Skype call to the airline call-center to change the details of your Amsterdam-Boston flight next week. You cannot be sure that your operator is not on Seychelles now, but this does not influence the connection. And, most importantly: the most important part of this communication, the details of your Amsterdam-Boston flight, have nothing to do with either location of the cafe you are sitting in, or location of the call center your operator is working at"(Pachenkov, 2012).

However, the arguments regarding the loss of locale significance were not supported by all scientists. Sassen, in her "Global City", has stated and justified the thesis that the world economy strongly requires particular territorial units, especially for functioning of highly globalized and digitalized sectors, such as finance (Sassen, 1991). This thesis was in conflict with a widely accepted idea in 1991, that the world economy has overcome the territorial limitations and boundaries. The emergent digital oracles of the 1980s argued would be less and less in need of places such as cities (Sassen, 2016). The focus of the experts was on all that was leaving New York; however, Sassen's work on immigration led her to ask what was coming into New York. She found many very fancy but small firms from many different countries (Sassen, 2016). This is why the migration into New York never stops, because the number of workplaces is not decreasing, but growing. Sassen captures the new economic logic, which started to shape within old yet still active and dynamic economy. New processes were not obvious for everyone, but they became much more clear in XXI century. Sassen is now developing the ideas formulated in 1991 in the "Global City".

Corporations ask for benefits because they have false idea that if they do not get them, they

will easily leave the city. But Sassen thinks that labor division between the key financial centers made them not always interchangeable, so the competition between them is not as high as thought to be. She thinks that threats to leave the city in case of rejection of benefits made by corporations is nothing more than a bravado. Corporations need cities as much as cities need them (Sassen, 2016). Significance of global cities in the modern world is increasing, they become the main manufacturing sites of the post-industrial society. Global cities are irreplaceable for transnational corporations, because the cities can offer corporations a set of highly professional services at minimal cost. Global cities strive to be highly specialized in serving the particular set of global markets and global companies: New York controls coffee, London controls platinum, and Shanghai, a much more influential financial center, now controls the copper market (Sassen, 2007).

Therefore, it deals not only with single global cities, but their network: In reality, the organizational component of modern global economy is a network of about forty large and small global cities, where it is located and constantly renewed (Sassen, 2007). Economic chances of global cities become less and less dependent of their national economies. In transnational urban networks, the largest business centers are starting to gain special importance, but these systems have no such concept as a separate global city. This is the key distinction between global cities and the world or capital cities of former empires.

Sassen's ideas are starting to find acceptance and development among other authors. For example, American political scientist Khanna marks increasing connection between cities due to development of various networks: transport, energy, communication, etc. He says that the modern world evolves from geography to "connectography" (Khanna, 2016a).

According to the results of theoretical and methodological analysis, significant sociological discourse fields of the cities functions transformation and constitution of new urban civilization were highlighted (Vershinina, 2017).

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# 3. Results

Humanity stands on the verge of global connectivity revolution. Within the next 40 years, the world will create an infrastructure that has never existed in 4 thousand years (Khanna, 2016a). As Hassan points out, "the planet is wired. Hundreds of thousands of kilometers of undersea fibre optic cable connect the continents with invisible digital garlands of superthin glass and plastic. This digital network has no originary point and no terminus; it has no beginning and no end: its logic is connection upon connection, upon connection" (Hassan, 2004).

Using an organism as a metaphor, Khanna compares our planet with a human body, where transport system acts as a skeleton, electric, petroleum and gas networks represent cardiovascular system, whereas Internet cables, satellites, cellular networks and data centers are the elements of nervous system. Thus, relocation, energy distribution and information exchange are facilitated by spreading infrastructural matrix. These exact conditions allowed to formulate a new social order with two key components — connectivity and functional geography (connectography), acting as organizing principles of life in societies of XXI century, representing the global network civilization.

Basic factors of manufacture and exchange, such as money, technology, people and goods, are more and more easily transferred over national boundary limits; therefore, national governments have less and less means to regulate these flows and to influence the economics by political instruments. Even the most powerful national governments cannot be recognized as a supreme and sovereign power anymore, neither outside, nor inside their borders. However, decreasing independence of national governments does not necessarily mean that sovereignty as it is falls into decay (Hardt & Negri, 2000; Sassen, 1996).

Khanna describes the modern social order using the term "connectivity". The de jure world of political borders is giving way to the de facto world of functional connections (Khanna, 2016a).

He says that, first of all, connectivity replaces the segregation as a new paradigm of the global organization. Modern societies undergo fundamental transformational processes, due to which the functional infrastructure becomes the real representation of how the modern world works. Borders of national countries as of elements of political geography lose the significance, which they had in societies of XIX and XX centuries. According to the scientist, the world map should have not only borders of national countries, but also megacities, road and railway systems,

pipelines, Internet cables and other tokens of the global network civilization.

For another thing, connectivity creates possibility for redistribution of political authorities: empires break, and the power is partly transferred from capital cities to periphery and those major cities of a country that strive to autonomy in financial and political aspects. This condition becomes the reason of a closer cooperation within newly formed unions and alliances, which, along with other formations, use resources to facilitate their functioning in new conditions.

Moreover, connectivity changes the nature of the geopolitical competition: struggle for territory becomes less important than the struggle for connectivity. Competition for connectivity becomes the struggle for global supply chains, energy markets, industrial production, financial flows, technology, knowledge and skills. Therefore, there is a transition from competition between systems (capitalism vs communism) to competition within the same common system of global logistic chains. New infrastructural alliances are formed: they connect with each other physically; they can cross geographical borders via partnerships in logistics.

Khanna concludes that connectivity is the key factor of fundamental transition to more complex, global systems (Khanna, 2016b). Economies become more and more integrated, population becomes more mobile, virtual reality coexists with physical reality; climate change exerts influence over the life of modern people. Therefore, connectivity makes the world more complex and unpredictable, but on the other hand, makes it more stable. Connectivity becomes the "destiny" of the modern world by defying the traditional political geography and demonstrating the benefits of the functional geography. This new connectographic perception of the world becomes the key characteristic of the global network civilization.

Connectivity displays itself in intense urbanization processes and extensive spreading of technology. It is facilitated by the corresponding infrastructure. As a result, connectivity is the driving force of the global economic development. It is obvious, that the best investments in modern world are those made to create opportunities for connectivity, concludes Khanna.

Connectivity is the foundation of social mobility and economic stability. Cities with vast transport network have advantage and can adapt more quickly in uncertain and unpredictable conditions of the modern world. Due to powerful infrastructure, critical situations are resolved much more easily. Therefore, connectivity is a fundamental factor of development on the level of city, country and the whole world.

The world is more connected than ever, but the nature of its connections has changed in a fundamental way. The amount of cross-border bandwidth that is used has grown 45 times larger since 2005. It is projected to increase by an additional nine times over the next five years as flows of information, searches, communication, video, transactions, and intracompany traffic continue to surge. In addition to transmitting valuable streams of information and ideas in their own right, data flows enable the movement of goods, services, finance, and people. Virtually every type of cross-border transaction now has a digital component (James Manyika, Susan Lund, Jacques Bughin, Jonathan Woetzel, Kalin Stamenov, 2016).

Connected world is becoming real because of devolution processes, says Khanna. This means that transferring of power from a central government to subnational (state, regional, or local) authorities "drive toward a connected destiny". Cities and provinces have become a driving force of devolution in XXI century. This is due to the fact that cities no longer need their national capitals to filter their relations with the world (Khanna, 2016a).

Khanna calls planetary urbanization a twin of connectivity (Khanna, 2016b). Cities are the infrastructure that defines the world the best. At 2030, more than two thirds of the world population will live in cities. Every week, there are at least a million new people moving into cities, worldwide (Musa, n.d.). By 2050, the United Nations (UN) is expecting that 6 billion people will be living in cities; furthermore, cities consume about 70% of the global energy use; as a result, the strain on resources and the magnitude of challenges that cities face is phenomenal ('The New Urban Agenda - Habitat III', 2016). One of the development strategies of modern cities striving to become smart cities is to implement power saving technologies. According to Toffler, due to industrial opposition to nature, increasing population, harmful technologies, insatiable need for expansion, industrial civilization has done more harm to environment than any of the previous ages, which made the problems of environmental pollution and consumption of resources in industrial society more acute than ever: "Never

before did any civilization create the means for literally destroying not a city but a planet. Never did whole oceans face toxification, whole species vanish overnight from the earth as a result of human greed or inadvertence; never did mines scar the earth's surface so savagely; never did hair-spray aerosols deplete the ozone layer, or thermopollution threaten the planetary climate" (Toffler, 1990). However, apparently, the time of industrial cities is passing.

Rifkin is one of the first who has drawn attention to the significant transformations taking place in the society and affecting its foundations (Artemova, 2012). He gives an example of a next-generation city. It is Utrecht, a city and the capital of the province in Netherlands. According to him, Utrecht made a decision to become the vanguard of European Union in the third industrial revolution by becoming the first province of the biospheric era (Rifkin, 2011). In thirty years, government of Utrecht wants to decrease carbon dioxide emissions to zero without slowing the economic growth. This task is relevant for all modern cities. Cities of the world accommodate about half of the world's population, but they consume 70% of the world's energy and responsible for most of the emissions into atmosphere (The state of city climate finance 2015). Experts say that cities of the world must inevitably become the key grounds for building models of sustainable development, which assumes the care for the environment (Vershinina 2016). Utrecht can become an example for other cities. It is no wonder that one of the most popular concepts of urban development today is the concept of a smart city, which is closely connected to modern ICT, energy saving, and, therefore, care for the environment.

Today, the most recognized components of smart cities are:

smart management (efficient cooperation of various authorities, rapid response system to needs of population, increased quality of state services by implementation of electronic government, etc.);

population (new education technologies providing equal access to knowledge for people of all social levels);

environment (new energy saving technologies);

mobility (intelligent transport systems);

economics (new opportunities for business, first of all via various e-commerce forms);

quality of life (high-quality health care, social services and building automation) (Steinert, Marom, Richard, Weiga 2011).

The UN studies a smart-city approach that makes use of opportunities from digitalization, clean energy and technologies, as well as innovative transport technologies, thus providing options for inhabitants to make more environmentally friendly choices and boost sustainable economic growth and enabling cities to improve their service delivery ('Annex New Urban Agenda Quito Declaration on Sustainable Cities and Human Settlements for All', 2017). However, it would be wrong to think that a smart city depends solely on technology innovations. A city can only be smart if the investments were made into the human and social capital, as well as areas traditional for most of the cities, such as transport and IT. Experts warn to not to be distracted by a purely technological component of the urban development and to remember that technology is made for people and not otherwise ('Technological revolution. Agenda for urban management', 2016). It means that a smart city assumes not only development of modern technology, but also helps people fulfill their potential in various areas, which would increase the quality of life. From the European Commission's point of view, smart city is a place where the traditional networks and services are made more efficient with the use of digital and telecommunication technologies, for the benefit of its inhabitants and businesses ('Smart Cities', 2015). Smart cities are cities showing complex sustainable development. Analytics of PricewaterhouseCoopers (PwC) see the complex approach as the main distinction between smart cities and other cities: Smart Cities arise when the different components of a city's "living experience", such as housing, transportation, and health and education, are examined together, as parts of a larger overall unit ('Smart cities: From earthen walls to smart grids', 2012). Often, urban authorities try to solve problems in individual areas. However, in smart cities, all problems are approached as complex urban problems, because all components of the city are closely interconnected and are parts of the same networks.

# 4. Conclusions

In conditions of increasing competition, cities strive to not only introduce new technologies as quick as possible, but also pay a lot of attention to their "symbolic capital", their international image. City ratings based on various areas became quite a popular source of information. Authorities of many cities strive to earn higher ranks in ratings they consider the most important for them. Smart cities also compete with each other.

One of the most influential ratings of smart cities is the rating of Juniper Research. Experts pay much attention to the city's "smart" capabilities, with particular focus on their use of smart grids, smart traffic management and smart street lighting, alongside aspects such as technological capability and social cohesion, among others. Large attention is also paid to implementing environmentally positive projects, despite excelling in areas such as technological capability and a willingness to engage with citizens through open data. Some 40 metrics are evaluated, covering technology, transport, energy, open data and economy. In 2015, the leader was Barcelona, followed by New York, London, Nice and Singapore ('Barcelona Named "Global Smart City – 2015"', 2015). Last year, the first position was taken by Singapore, which was among the top five before. Barcelona came in second, London third, San Francisco and Oslo won over Nice and New York by displacing them out of the top five ('Singapore Named "Global Smart City – 2016"', 2016).

Intelligent Community Forum (ICF) proposes another rating. This organization is a global network of cities and regions, which mission is to help communities use information and communications technology (ICT) to create inclusive prosperity, tackle social and governance challenges and enrich their quality of life ('About ICF - Intelligent Community Forum', 2017).

However, according to the authors of this rating, being a smart city is insufficient. City must have smart people, so the forum proposes to create strategy from smart city to Intelligent Community, which differs much from the former. Smart Cities are about saving money, becoming more efficient and delivering better service to the taxpayer, Intelligent Communities find vision-driven, community-based, technology smart solutions to their most urgent problems ('From Smart Cities to Intelligent Communities - Intelligent Community Forum', 2017). They adopt technology but do not make it their focus, Intelligent Communities use the digital tools of that network to enhance the connections that have always made cities work. The efforts must be made not only to create an innovative ecosystem, but also to fulfill social needs, to develop the workforce able to succeed in the area of knowledge. Otherwise, the benefits of smart cities cannot become the property of their inhabitants.

Every year ICF chooses the most Intelligent Community of the year. An international academic team of Analysts reviews data about cities, scores each one on dozens of factors, and produces a quantitative ranking of the candidates. 21 semi-finalists are chosen in autumn, seven finalists are chosen in winter, and the winner is announced in summer. The top Intelligent Communities are not the most advanced technology centers, the most wired cities or the fastest growing economies in the world. They represent models of economic and social transformation in the 21st century ('The Top7 Intelligent Communities of the Year', 2017). They are charting new paths to lasting prosperity for their citizens, businesses and institutions.

In February 2017, seven finalists were announced in this year's rating, and Moscow was among them for the first time ('The Intelligent Community Forum Names the Top7 Intelligent Communities of 2017 - Intelligent Community Forum', 2017). The winner will be announced in June, but in any case, it is a great success for Moscow to be among finalists. According to the report of ICF, "the administration of Mayor Sergey Sobyanin has invested large amounts of money and political capital in a vision for Moscow as an attractive location for knowledge-based businesses, a center for learning and a city where government exists to serve the people as efficiently and transparently as possible. Deploying digital technologies to serve those ends, Moscow is turning one of the world's megacities into an Intelligent Community" ('Moscow - Intelligent Community Forum', 2017). European cities were not always among winners: Glasgow in 2004, Stockholm in 2009 and Eindhoven in 2011 ('Intelligent Community of the Year', 2017).

Technologies develop with a constantly increasing speed. Not so long ago, the Internet of Things (IoT) was only a surprising and questionable concept. In 2017, ICF, held a series of events, one of the discussion points at which was the Internet of Cities. The institutors insist that the true revolutionaries of the digital century are not things but human beings applying knowledge to accomplish things both practical and visionary. They focus, not on the

connections among machines, but on the connections among people in a specific place on Earth – the place called home – which are enabled and empowered by information and communications technology (‘The Internet of Cities’, 2017).

Connectography became a new paradigm of the global organization. Cities traditionally were the network hubs, where talent, commerce, investment, learning and creativity converged to produce civilization. They were the centers of power and commerce and ultimately the seeds from which nations grew as roads and canals, highways and railways – the network technologies of the day – gradually expanded (‘The Internet of Cities’, 2017). Nowadays ICT overlays the physical network of roads and rails with a digital one in our cities and towns. That digital network connects organizations, individuals and devices in the Internet of Things.

There is a need for a city-wide smart, secure, and resilient transformation. Technological transformation is one option that governments can rely on to mitigate many of the risks and challenges they are facing (Musa, n.d.). Conditions of new effective connectivity is based on smart cities. Cities learn from each other to build with zero emissions, to implement group usage of electric cars. Major cities of China have quotes for number of cars on their roads. In many cities of the West, the youth does not even want to drive a car anymore. Cities are a part of the problem, but they are also a part of the solution. Cities can make the world more environmentally stable, fairer, and the connection between cities can make the world friendlier. Connectivity is an opportunity for a long-term stability.

Hassan argues, “from these global “backbones”, regions, countries, cities, businesses, universities, government bureaucracies, regional governments, district councils, communities and individuals link to the network through their own growing local telecommunications systems. The fibre optic system that girds and criss-crosses the planet is of course augmented and made still denser through wireless communication, satellite links, cable systems and the standard-issue copper wire telephone link that brings the Internet and network connectivity to, potentially, almost everywhere” (Hassan, 2004).

Connectivity is the new meta-pattern of modern age. Like liberty or capitalism, it is a world-historical idea. One that gestates, spreads, and transforms over a long timescale and brings about epochal changes (Khanna, 2016a). Each day, hundreds of millions of people connect to Internet and work with people they have never met. More than a billion of people cross borders each year, but in a coming decade this number will grow to three billion. People do not only create the connection, they impersonate it. The global network of the civilization became a new map of the world. Map of the world, where, as Khanna argues, “geography is not a sentence”. The future has a new and more encouraging slogan: “connection is a destiny” (Khanna, 2016b).

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## Bibliographic references


About ICF - Intelligent Community Forum. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/about_icf .

Annex New Urban Agenda Quito Declaration on Sustainable Cities and Human Settlements for All. (2017). Retrieved from http://habitat3.org/wp-content/uploads/New-Urban-Agenda-GA-Adopted-68th-Plenary-N1646655-E.pdf .

ARTEMOVA, T. (2012). The notion ‘access’ in the sociological theory by Jeremy Rifkin. *Sociology*, (3), 84–96.

Barcelona Named ‘Global Smart City – 2015’. (2015). Retrieved 16 September 2017, from https://www.juniperresearch.com/press/press-releases/barcelona-named-global-smart-city-2015 .

BARNEY, D. D. (2004). The network society. Cambridge: Polity. Retrieved from https://books.google.ru/books/about/The_Network_Society.html?hl=ru&id=NkmM5GkaTIgC .

CASTELLS, M. (1996). The rise of the network society: The Information Age: Economy, Society and Culture: Volume I. Massachusetts and Oxford: Blackwell. https://doi.org/10.2307/1252090

CASTELLS, M. (2002a). The Informational City: Economic Restructuring and Urban Development. Oxford: Blackwell Publishers.

CASTELLS, M. (2002b). The Internet galaxy: reflections on the Internet, business, and society.

Oxford University Press.

CASTELLS, M. (2009). Communication Power. Oxford University press. https://doi.org/10.1080/13691180903390885 .

DOBRINSKAYA, D. E. (2016). Sociological understanding of internet: theoretical approaches to the network analysis. *Moscow State University Bulletin. Series 18. Sociology and Political Science*, 22(3), 21–38. https://doi.org/10.24290/1029-3736-2016-22-3-21-38 .

From Smart Cities to Intelligent Communities - Intelligent Community Forum. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/from_smart_cities_to_intelligent_communities .

HARDT, M., & NEGRI, A. (2000). Empire. Harvard University Press. Retrieved from https://books.google.ru/books/about/Empire.html?hl=ru&id=UMePAAAAMAAJ .

HASSAN, R. (2004). Media , Politics and the Network Society. Open University Press. Retrieved from https://books.google.ru/books?id=8NTEHaN_MEIC&dq=intitle:media+inauthor:hassan&hl=ru&source=gbs_navlinks_s.

Intelligent Community of the Year. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/ic_of_year .

MANYIKA, J., LUND S. et al. (2016). Digital globalization: The new era of global flows |. Retrieved from http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows .

KHANNA, P. (2016a). Connectography: mapping the future of global civilization. New York: Random House.

KHANNA, P. (2016b). How megacities are changing the map of the world | TED Talk | TED.com. Retrieved from https://www.ted.com/talks/parag_khanna_how_megacities_are_changing_the_map_of_the_world .

MCLUHAN, M. (2003). Understanding media: the extensions of man. Gingko Press. Retrieved from https://books.google.com.tr/books/about/Understanding_Media.html?hl=ru&id=m7poAAAAIAAJ .

Moscow - Intelligent Community Forum. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/moscow .

MUSA, D. S. (n.d.). Smart City Roadmap. Retrieved from https://www.academia.edu/21181336/Smart_City_Roadmap .

OSIPOVA, N. G. (2014). Inequality in the era of globalization: essence, institutions, regional specificity and dynamics. *Moscow State University Bulletin. Series 18. Sociology and Political Science*, (2), 119–141. Retrieved from http://vestnik.socio.msu.ru/jour/article/view/29 .

PACHENKOV, O. (2012). Urban public space in the face of modern challenges: mobility and 'abuse of publicity'. *New Literary Observer*.

POLYAKOVA, N. L. (2015). New theoretical perspectives in sociology at the beginning of the 21st century. *Moscow State University Bulletin. Series 18. Sociology and Political Science*, 21(2), 29–46. https://doi.org/10.24290/1029-3736-2015-0-2-29-46 .

RIFKIN, J. (2011). The third industrial revolution: how lateral power is transforming energy, the economy, and the world. Palgrave Macmillan. Retrieved from https://books.google.ru/books?id=3CRDRvBCt_oC&dq=editions%3AvCHgUpsFuEMC&hl=ru&source=gbs_book_other_versions .

SASSEN, S. (1991). The global city: New York, London, Tokyo. Princeton University Press. Retrieved from https://books.google.by/books?id=6Bm-QgAACAAJ&hl=ru&source=gbs_book_other_versions .

SASSEN, S. (1996). Losing control?: sovereignty in an age of globalization. Columbia University Press. Retrieved from https://books.google.ru/books?id=B90JAQAAMAAJ&dq=1.%09S. Sassen%2C Losing Control%3F Sovereignty in an Age of Globalization (Columbia University Press%2C New York%2C 1996).&hl=ru&source=gbs_book_other_versions .

SASSEN, S. (2007). Seeing Like a City. In R. Burdett & D. Sudjic (Eds.), The endless city: the urban age project by the London School of Economics and Deutsche Bank's Alfred Herrhausen Society (p. 510). London, New York: Phaidon. https://doi.org/10.2752/175470710X12593419555883 .

SASSEN, S. (2016). The Global City: Enabling Economic Intermediation and Bearing Its Costs. *City & Community*, 15(2), 97–108. https://doi.org/10.1111/cico.12175 .

Singapore Named 'Global Smart City – 2016'. (2016). Retrieved 16 September 2017, from https://www.juniperresearch.com/press/press-releases/singapore-named-global-smart-city-2016 .

Smart Cities. (2015). Retrieved 16 September 2017, from https://ec.europa.eu/digital-single-market/smart-cities.

Smart cities: From earthen walls to smart grids. (2012). Retrieved 16 September 2017, from www.pwc.com/cleantech.

STEINERT, K., MAROM, R. et al. (2011). Making cities smart and sustainable. Retrieved from http://www.slideshare.net/ceobroadband/global-innovation-index-2011.

Technological revolution. Agenda for urban management. (2016). Retrieved 10 September 2017, from http://mosurbanforum.ru/results .

The Intelligent Community Forum Names the Top7 Intelligent Communities of 2017 - Intelligent Community Forum. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/icf_names_the_top7_intelligent_communities_of_2017 .

The Internet of Cities. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/internet_of_cities.

The New Urban Agenda - Habitat III. (2016). Retrieved 16 September 2017, from http://habitat3.org/the-new-urban-agenda/ .

The state of city climate finance. (2015). Retrieved 16 September 2017, from http://www.citiesclimatefinance.org/wp-content/uploads/2015/12/CCFLA-State-of-City-Climate-Finance-2015.pdf .

The Top7 Intelligent Communities of the Year. (2017). Retrieved 16 September 2017, from http://www.intelligentcommunity.org/top7 .

TOFFLER, A. (1990). The Third Wave. New York: Bantam Books.

DIJK, van J. A. (2006). The network society: social aspects of new media. Sage Publications. Retrieved from https://books.google.ru/books?id=b7ktTPViIYMC .

VERSHININA, I. A. (2016). 'Smart' cities: prospects for the emergence and development in Russia. *Moscow State University Bulletin. Series 18. Sociology and Political Science*, 22(2), 163–175. https://doi.org/10.24290/1029-3736-2016-22-2-163-175.

VERSHININA, I. A. (2017). Localization of the global economic system in global cities. *Moscow State University Bulletin. Series 18. Sociology and Political Science*, 23(3), 58–76.

VERSHININA, I., KORKIYA, E., MAMEDOV, A., & PANICH, N. (2015). The Identity of Migrants in a Modern Megacity: Applied Aspects. *Research Journal of Applied Sciences, Engineering and Technology*, 11(9), 1036–1040. https://doi.org/10.19026/rjaset.11.2146.

WELLMAN, B., & HAYTHORNTHWAITE, C. A. (2002). The Internet in everyday life. Blackwell Pub. Retrieved from https://books.google.ru/books/about/The_Internet_in_Everyday_Life.html?hl=ru&id=Agemw3yIfCIC .

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