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*Digital practices as part of everyday life of the modern
metropolis in the assessments of experts and users*

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Introduction

Relevance of the topic. Digital technologies, penetrating into the daily life of a person, form corresponding ("digital") socio-cultural practices, allowing to record changes in the attitude of users to key technological transformations characteristic of the modern era. Such socio-cultural dynamics manifest themselves most clearly in the conditions of a megalopolis, constituting a specific problematic field for the study of everyday life within the framework of the sociology of culture, requiring separate scientific understanding.

Megacities in Russia and abroad are large sites for the production and implementation of scientific and technological innovations. Modern design of urban space, infrastructure of workplaces and consumption spheres, as well as the social environment for the development and consumption of innovative products are being formed. Key agents introducing innovations into everyday life At the macro level, there are government structures and transnational corporations, at the meso level - various business structures and organizations of different types using innovative solutions, at the micro level - the population as part of territorial communities and microgroups . In 2023, a number of areas for project activities to strengthen technological sovereignty were approved in the Russian Federation ¹. In this regard, information technology has become an important component of the structural adaptation of the country's economy.

The development and implementation of technological innovations exacerbates existing and creates new social problems in the communities in question in the public arenas of the metropolis. Sociocultural factors that hinder and facilitate the spread of innovations are formed at the intersection of the spheres of employment, leisure, consumption, individual and social practices. Moscow and Nizhny Novgorod as modern Russian industrial megacities demonstrate common and different sociocultural specifics of the introduction of digital innovations into everyday social practices.

¹Resolution of the Government of the Russian Federation of 15.04.2023 N 603 (as amended on 02.12.2023) "On approval of priority areas of technological sovereignty projects..." URL : <http://publication.pravo.gov.ru/Document/View/0001202304170025> (date of access: 10.12.2024).

The socio-cultural manifestations of life of almost any resident of a large Russian or foreign city are in an inseparable interdependent interaction with products and technologies created on the basis of advanced scientific discoveries, inventions, and technological innovations. Air purification in an apartment, cleaning with robotic vacuum cleaners, shredding household waste, separate waste collection, ensuring security, means of communication and gadgets, applications for organizing proper nutrition and other technologies that improve the quality of life have entered the everyday life of a person in a modern large city to a much greater extent than in populated areas with a lower concentration of both the population and the achievements of modern technology.

Data from the 2020 All-Russian Population Census indicate an increasing rate of rural-to-urban migration and urbanization processes: the ratio of rural and urban populations has changed (74% and 26% in 2010, 75% and 25% in 2021; since 2010, four new cities with a population of over a million have appeared in Russia)². It is important to note that people choose modern digital technologies quite consciously, based on an assessment of their convenience, ergonomics, suitability for equipping housing, workplaces and the ability to improve the overall quality of infrastructure, including that which meets their collective (family, professional) and individual socio-cultural needs.

Regular analytical reports of large companies using innovative information, communication and digital technologies indicate an increase in the consumption and use of various technological devices by the population, the development of the robotic devices market in Russia, the demand for new means of transportation (electric scooters , segways and other means of individual mobility) in the updated spaces of cities³. According to experts from the ANO "Digital Economy"⁴, the implementation

² Results of the 2020 All-Russian Population Census: materials from the official website of the Federal State Statistics Service. URL : <https://rosstat.gov.ru/folder/56580> (date accessed: 10.12.2024).

³Data-Based Cities: What is Needed to Create Them/ Analytical Report. MSU.2019. URL: https://finance.skolkovo.ru/downloads/documents/FinChair/Research_Reports/Data_Based_City_Report_Full_2019-11_ru.pdf (date accessed: 10.12.2024). SKOLKOVO

⁴ Report "Artificial Intelligence in a Smart City" ANO "Digital Economy" https://files.data-economy.ru/Docs/AI_in_smart_city.pdf accessed: 10.12.2024).

of the "smart city" concept significantly affects the lives of citizens, for example, it increases the quality of life and satisfaction of residents by 10-30%.

Along with this, the coronavirus pandemic has greatly accelerated the processes of introducing distance technologies in education, work, services, and interpersonal communication. Previously very traditional areas of life (for example, intra-family communication) are increasingly difficult to imagine without an element of online interaction, the creation of groups, whose members are relatives and loved ones, on social networks.

Exponential growth of technologies, creating new opportunities for the implementation of traditional socio-cultural practices, is to a large extent a communicative process. Any new technical object, going beyond the laboratory, begins to function in accordance with the needs, capabilities and norms of the receiving group. Diffusion of innovations as the embodiment of cultural dynamics ⁵presupposes their implementation and dissemination in society and, thus, significantly depends on communication networks between members of society and habitulized social practices implemented on the basis of new technological solutions and approaches.

On the other hand, the use of innovative digital products in everyday life exacerbates the problem of access to limited goods and deepens inequality between different socio-demographic groups of the population. The main fault lines remain the same (urban-rural, age, gender differences, wealth, infrastructure), but they become much more obvious against the background of accelerating accumulation of information, the entry of new IT products into the market and their use in everyday life.

The relevance of this study lies in the fact that the socio-cultural and communication aspects of the process of implementation and dissemination of digital practices, having become an integral part of the daily life of a modern resident of a metropolis, at this stage of development of sociological knowledge require a more complete, systemic scientific and theoretical understanding, including due to their

⁵ Rogers E. Diffusion of Innovations. NY: Free Press, 1995; Rogers E., Kincaid L. Communication Networks: Toward a New Paradigm for Research. N. Y. : Free Press , 1980.

underestimated heuristic and practical significance. At the same time, it is necessary to distinguish between the analyzed digital practices in the perception of users and in the perception of experts. This difference in perception forms a special structure of the socio-cultural reception of technological innovations: experts, assessing the level of penetration of digital technologies into the daily practices of users, somehow influence their behavior, forming an information context for the further implementation of innovative solutions and facilitating their renewal within the technological cycle. Ultimately, this allows us to speak about diffusion cultural processes in society in relation to digital practices.

The degree of scientific development of the topic. When assessing the degree of development of the problem under study, it is necessary to take into account several groups of sources. The development of information technology, according to modern authors, leads to radical changes in society (M. Castells , K. Kelly) ⁶. With the spread of the Internet, communication devices and networks, digital inequality in terms of access to these new benefits and technologies is aggravated: data on this are presented in analytical reports of international and Russian research groups, global corporations and non-governmental organizations ⁷. The transformation of social relations and social interaction is predicted in forecasts of the future by such large-scale scientists as M. Castells , D. Rifkin, E. Toffler ⁸. The concept of a new reality is being formed, which can be designated as " infomodernity ", endowed with the characteristics of network forms, including a mobile boundary of social space (frontier), in the case of

⁶ Castells M. *Galaxy Internet. Reflections on the Internet, Business and Society.* – Ekaterinburg: U-Factoria, 2014. Pp. 83-84., Kelly K. *Inevitable. 12 Tech Trends That Shape Our Future* / Kevin Kelly; translated from English by Konstantinova Yu., Mamedova T. – M.: Mann, Ivanov and Ferber, 2017. – 352 p.,

⁷The World Bank Europe and Central Asia Economic Update. Spring 2021. Data, Digitalization, and Governance. <https://documents1.worldbank.org/curated/en/125071619505371712/pdf/Europe-and-Central-Asia-Economic-Update-Spring-2021-Data-Digitalization-and-Governance.pdf>. (Accessed: 25.09.2024)

⁸ Manuel Castells (1996). *The Information Age: Economy, Society and Culture Vol.I : The Rise of the Network Society.* Cambridge MA. Oxford UK: Blackwell Publishers, pp. 5, 198, 410; Rifkin, J. *The Third Industrial Revolution; How Lateral Power is Transforming Energy, the Economy, and the World.* Palgrave MacMillan . 2011. 270 p .; Toffler E. *The Future of Labor.* Interview (09.11.2006). – URL : [http : // gtmarket . ru / laboratory / publicdoc / 2006/2502](http://gtmarket.ru/laboratory/publicdoc/2006/2502) (date of access: 25.09.2024); Toffler E. . *Future Shock* / trans. from English. Moscow: AST, 2004. P. 475.

contacts in virtual reality (A.R. Zenkov, V.V. Lapkin, E.S. Sadovaya, V.A. Sautkina , I.S. Semenenko) ⁹.

An important aspect of the development of the digital society is the delayed reaction of social sciences to the introduction of innovative technologies, reflected in the works of foreign and Russian scientists (D.N. Karpova, P. Marsh, A.S. Proskurina, S.T. Sagitov, K. Schwab, Yu.G. Chernyak) ¹⁰. The culture of the digital society has become the subject of research by Russian scientists in the last twenty years (V.P. Kozyrkov, M.V. Pridatchenko , N.V. Shalyutina , etc.) ¹¹.

The changed nature of interaction between man and machine, new social (non)human actors is currently built on new principles (E.A. Gavrilina, V.A. Kutyrev, D. Norman, I.E. Petrova) ¹². Digitalization of all sectors of life, robotization of various industries and services also presupposes a change in communication between man and machine, as well as a transformation of the essence of man - his cyborgization (A.A. Davydov, D.V. Galkin, N.V. Zilberman, M.Yu. Mitrenina , A.D. Rebrova) ¹³.

⁹Lapkin V.V., Semenenko I.S. "Political Man" in the Face of the Challenges of " Infomodernity " // Polis. Political Studies. No. 6, 2013. P. 64-81; Plotichkina N. , Morozova E. , Miroshnichenko I . Digital Technologies : Policy for Improving Accessibility and Usage Skills Development in Europe and Russia // World E with onomy and International Relations , 2020, vol . 64, no . 4, pp . 70-83. <https://doi.org/10.20542/0131-2227-2020-64-4-70-83> See: Sadovaya E.S., Sautkina V.A., Zenkov A.R. Formation of a New Social Reality: Technological Challenges. - M.: IMEMO RAS, 2019. P. 84.; Digital society - a new format of social reality: structures, processes and development trends: materials of the All-Russian scientific conference XIV Kovalev readings November 12-14, 2020 / Responsible. editors: N.G. Skvortsov, Yu.V. Asochakov . - St. Petersburg: Skifia-print, 2020. - 603 p.

¹⁰Shcherbakov A.P. New Industrial Revolution and Institutional Changes Colloquium -Journal. 2019. No. 13-11 (37). P. 202-205.; Karpova D.N., Proskurina A.S. Sociotechnical Turn in the Study of Digitalization of Society // Power. 2020. No. 1. P. 97-105; Sagitov S.T. Sociocultural Sphere and Development of the Digital Economy // Higher Education in Russia. No. 10, 2019. P. 97-105; Chernyak Yu.G. Digitalization and technologization of public life as a factor in the transformation of the sociocultural sphere of modern society // Sociological Almanac. 2020. Issue . 11. P. 176-183; Schwab K. The Fourth Industrial Revolution. A step-by-step guide to the changes that await humanity in the next 100 years / translated from English. Moscow: Eksmo, 2016.

¹¹See, for example: V.P. Kozyrkov, M.V. Pridatchenko , N.V. Shalyutina . Sociology of Culture in a Digital Society. – St. Petersburg: Aleteya Publishing House , - 2022.

¹²See: Gavrilina E.A., Petrova I.E. (In)human sociology and the power of artificial sociality // Monitoring public opinion: economic and social changes. No. 2 (150), 2019. P. 434-438., Kutyrev V.A. Posthuman revolution How the result of the technologization of the human world // Science. Thought. 2017. No. 1 – 3. P. 45-49, Norman D. Design for a Better World: Meaningful, Sustainable, Humanity Centered 376 pp., 2024 Publisher: The MIT Press

¹³Galkin D.V. Foundations of Social Robotics in the Context of Social and Humanitarian Research// Bulletin of Omsk University. No. 2, 2014. Pp. 167-177 Sereidkina E.V. Ethical Aspects of Social Robotics / E.V. Sereidkina // Human. 2020. Vol. 31. No. 4. Pp. 109-127. DOI: 10.31857/S023620070010933-3; Davydov A.A. Social Robotics and systems sociology // Official website of the Institute of Social Sciences of the Russian Academy of Sciences. – 2009; Ignatiev V. I., Spiridonova K. I. The problem of technoanthropic dichotomy of the social robot project: ontosynthesis in communication // Sociology of science and technology. 2023. No. 2. URL: <https://cyberleninka.ru/article/n/problema-tehnoantropnoy-dihotomii-proekta-cotsialnyy-robot-ontosintez-v-kommunikatsii> (date of access: 11/25/2024). Zilberman N. N., Parkhomenko A. A. Ideas about the possible role of a robot in a social status higher than a person (using the example of a debate game) // Humanitarian Informatics . No. 12 , 2017. pp. 40–49; Mitreniina M.Yu. Human capabilities and robotics: who will become the object of creativity ? // Humanitarian Informatics. Vol . 8, 2014. Pp. 17-30 Ghantarjyan , Sargis & Poghosyan, Rima. (2021). Economic aspects of robotization of the social sphere. Chronos :

The concept of “scientization” appears in the works of political scientists and subsequently in the studies of representatives of other areas of social and humanitarian knowledge (F. Nicolas, S. Keller, M. Tsap)¹⁴. Further research into the scientific substantiation of social practices leads to an analysis of the significance of knowledge, the structure of knowledge power and the expertise of a scientist, innovator, advanced user (A.R. Zenkov, A.K. Mamedov, K. Martignano, E.S. Sadovaya, V.A. Sautkina, M. Foucault, A.A. Shirokanova)¹⁵.

It is also worth mentioning a relatively new interdisciplinary direction – “Science and Technology Studies”, STS (English: Science and Technology Studies), which studies the interaction of technology, science and society in the process of socio-cultural development and is represented by the names of W. Baicker, T. Pinch and T. Hughes¹⁶.

STS, “Social Construction of Technologies”, SCOT (English Social) deserves attention in particular. Construction of Technology), recognizing the influence of different user groups in the development of technologies, taking into account cultural, economic and political factors leading to the convergence of production and consumption.¹⁷

economy sciences . 6. 10-17. 10.52013/2712-9713-31-1-2.;_Rebrova A.D. Cyborgization of the human body How implementation of modern innovative technologies // Polytechnical youth journal. No. 2, 2018. Pp. 1 – 7. Vvedenskaya E.V. Neurohacking : ethical and philosophical problems // Man. 2022. Vol. 33. No. 1. Pp. 47-60.

¹⁴Nicolas F. Between “Scientization” and Democratization of Science: The “Politics of Expertise.” // Science as Culture. 2012. Vol. 21. No. 2. pp. 259–263; Keller S. Scientization: putting global climate change on the scientific agenda and the role of the IPCC // Poiesis & Praxis. 2010. Vol. 7. No. 3. PP. 197–209; Zapp M. The scientificization of the world polity: International organizations and the production of scientific knowledge, 1950–2015. International Sociology . 2017. Vol . 33. No. 1. Pp . 3–26. Roberts AN The scientificization of public policy and politics: a new approach to conceptualizing and identifying the phenomenon Politics and Policy. 2023. T. 51. No. 5. P. 726-754.

¹⁵See: Mamedov A.K. Information society: a new ontology of social inequality // Bulletin of Moscow University. Series 18. Sociology And political science . No. 2., 2014. P. 187-198 Ivlev D.V. Analysis of the problem of inequality in the information society Bulletin of the Plekhanov Russian University of Economics . Introduction . Path V science . 2023. Vol. 13. No. 4 (44). P. 30-36.; Martiniano C. The Scientization of Creativity: “Innovate or Die!” // Journal of the Midwest Modern Language Association. 2016 Vol . 49. No. 2. PP . 161–190; Sadovaya E.S., Sautkina V.A., Zenkov A.R. Formation of a New Social Reality: Technological Challenges. Moscow: IMEMO RAS, 2019 Osipova N.G. Digitalization of Social Reality: Key Discussions. Bulletin of Moscow University. Series 18. Sociology and Political Science. 2022;28(3):9-42. <https://doi.org/10.24290/1029-3736-2022-28-3-9-42>; Foucault M. Intellectuals and Power: Selected Political Articles, Speeches and Interviews / Translated from French by B.M. Skuratov, edited by V.P. Bolshakov. — Moscow: Praxis, 2006. Part 3. 320 p. Shirokanova A.A. The Role of Science in the Knowledge Society // Collection of works of the 68th scientific conference of students and graduate students of the Belarusian State University. – At 3 hours. Part 2. – Mn.: Publishing center of BSU, 2013. P. 201.

¹⁶See : Bijker WE, Hughes TP, Pinch TJ (eds.). The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. Cambridge, MA: MIT Press, 2012. R . 470

¹⁷Oudshoorn N., Pinch T. How Users Matter: The Co-Construction of Users and Technologies, Cambridge: MIT Press, 2003.

The above-mentioned direction is also related to the model of the sociotechnical alliance by P. Flichy, ¹⁸formed taking into account the concept of translation by B. Latour and M. Callon . ¹⁹In particular, scientization is considered as a process of connecting an invention and emerging social practices oriented towards its use within the framework of a specific device, a thing that is a full participant in social relations in the process of sociocultural transformations.

Everyday life as a quality of everyday life and an environment for the formation of everyday knowledge is an important subject of study for Russian and foreign scientists (B. Waldenfelds , N.A. Vyalykh, T.D. Martsinkovskaya)²⁰.

Summarizing the consideration of the degree of scientific development of the problem of scientization of everyday life and technologization of the daily activities of a resident of a modern city, we note the need to analyze the cultural transformation of everyday life and identify the role of users of innovative technologies in this.

The object of the study is the socio-cultural space of a modern metropolis, which determines the sphere of interaction between individuals and social groups in the process of using digital technological innovations.

The subject of the research is the process of disseminating information about technological innovations as cultural phenomena that shape the everyday (“digital”) practices of metropolitan residents.

The aim of the work is to reveal the socio-cultural specifics of the spread of technological innovations in the form of digital practices in the conditions of a modern industrial metropolis (using Nizhny Novgorod as an example) taking into account discussions in various public arenas that influence experts and users.

To achieve the stated goal, a number of research **tasks are solved in the work:**

¹⁸See : Flichy P. Understanding technological innovation: a socio-technical approach / translated by Liz Carey-Libbrecht. Cheltenham: Edward Elgar Publishing, 2007.

¹⁹See : Latour B. Science in Action: How to Follow Scientists and Engineers through Society. Cambridge: Harvard University press , 1987.

²⁰See: Waldenfelds B. Everyday Life as a Melting Pot of Rationality/Socio-Logos: Trans. from English, German, French. Moscow: Progress. 1991. Pp. 39-50; Martsinkovskaya T. D. Urban Capital and the Chronotope of the City: A New Look at Urban Everyday Life // Bulletin of St. Petersburg University. Psychology. - V. 11, No. 4, 2021. Pp. 301-311; Vyalykh N. A. Sociology for Everyday Life or Everyday Life for Sociology? / N. A. Vyalykh // Bulletin of the N. I. Lobachevsky University of Nizhny Novgorod. Series: Social Sciences. No. 2 (62), 2021. Pp. 95-102.

1. Systematization of sociological approaches to studying the process of implementation of technological innovations in the urban environment.

2. Identification of the main stages and scenarios for the implementation of (digital) innovative technologies as a process of communication between actors in public arenas at various levels.

3. Disclosure of the socio-cultural specifics of the spread of digital practices in the everyday life of city residents based on expert and user assessments.

4. Definition of socio-cultural factors and typology of user groups based on attitudes towards various digital technologies.

Compliance of the topic of the dissertation research with the requirements of the Passport of the specialty of the Higher Attestation Commission:

The dissertation research was carried out within the framework of the scientific specialty 5.4.6. “Sociology of Culture” and corresponds to paragraph 21 – “Social Parameters of Digital Culture” – of the passport of the specified specialty.

Methodology and research methods.

The main theoretical and methodological approaches used in the study were: the approach of constructing social problems (M. Spector, J. Kitsuse), the concept of mobility (J. Urry) taking into account the main provisions of diffusionism (E. Rogers) to identify the involvement of different-level subjects in the dissemination of innovative technologies.

To determine the attitude of various user groups from among the residents of the metropolis to the process of introducing digital technologies into everyday practices, a survey method was used in combination with in-depth interviews.

The research program includes a content analysis of a series of interviews with residents of megacities, as well as an analysis of program documents regulating the activities of the Ministry of Digital Development, Communications and Mass Media of the Russian Federation from its inception to the present day, analytical reports of large companies and monitoring of sociological agencies dedicated to the scientization of everyday life in large cities of modern Russia. Materials from federal-level media and Internet portals with the expressed opinion of experts on the formation of digital

practices as part of everyday life in a modern industrial megalopolis were selected as expert interviews (50 texts published between 2011 and 2022).

Empirical and informational base of the research:

1. Normative and legal documents governing the implementation of technological innovations in modern Russia at the federal and regional levels: documents of the National Program "Digital Economy", documents on the implementation of priority areas of activity of the Ministry of Digital Development, Communications and Mass Media of the Russian Federation and its subordinate organizations and regional ministries, legislative acts of the Russian Federation on the implementation of artificial intelligence and digitalization of various spheres of production and education; analytical reports of state corporations (Rosnano, Rosatom, Rostec , Roscosmos); large private corporations in various areas of activity (Lukoil, MTS, Magnit, Sber, Alfa-Bank) on the implementation of innovative technologies in the work of companies and the sale of high-tech products (from 2000 to 2024, N = 100).

2. Statistical data on the development of digital technologies and their distribution in households of modern Russia (Russian Statistical Yearbook, 2000–2024 gg., sections “Science and Innovation”, “Information and Communication Technologies”).

3. Author's research: "Technologization of social practices": content analysis of expert interviews (author's and published interviews with employees of city administrations of Russian megacities, representatives of large businesses and knowledge-intensive production, scientific and pedagogical workers of universities and academic institutes, 2011–2022, N = 50); “Scientific innovations in the life of a modern metropolis” (semi-formalized in-depth interviews with users/advanced users/innovators from among residents of Russian cities about the spread of technologies in everyday life (2021–2023, N = 297).

4. Secondary data from research by research groups and departments of the National Research University Higher School of Economics (“Digital Skills of the Population in the Regions of Russia, Institute for Statistical Studies and Economics of

Knowledge, National Research University Higher School of Economics, Moscow, 2022”; “Russian Monitoring of the Economic Situation and Health of the Population, National Research University Higher School of Economics”).

The main hypothesis of the conducted research is that the penetration of innovative technologies into the everyday life of metropolitan residents is determined by socio-cultural factors – both facilitating and hindering their widespread use. The opinions of experts (representatives of commercial IT structures, university science and government agencies) and young people (from among advanced users – metropolitan residents) regarding the effectiveness and importance of information and communication innovations differ significantly.

In 2020–2021, during the coronavirus pandemic, many new aspects of the use of new information and communication technologies were noted by both experts and users. Starting from 2022, there has been an extremely intensive understanding of the need for widespread use of innovations and further development (implementation) of increasingly influential technological capabilities (invasive neurotechnologies, large language models, empathic virtual advisors).

An additional hypothesis is that the typology of user groups undergoes changes in the process of scaling and deepening the inclusion of these technologies in everyday life (both the number of skeptics and optimists is growing), and the main parameters of division are ownership of technologies (their development) and their development as users.

The scientific novelty of the research results is represented by the following elements:

1. Sociological approaches to studying the process of introducing scientific and technological innovations into the life of a modern Russian metropolis have been systematized, taking into account the specifics of their distribution within the framework of the mobility paradigm.

2. Based on the analysis of theoretical provisions and content analysis of publications on user experience in mastering scientific and technological innovations, the time stages and key scenarios of diffusion of digital innovations in modern Russia

at the individual level, in terms of social interaction and at the intersection of these spaces are identified and characterized. At the same time, a systematization of the participation of actors at various levels of social activity on the main public platforms for discussing the problems of implementing innovative technologies is developed.

3. The socio-cultural specificity of the development ²¹and implementation of scientific and technological innovations at different levels of social activity (the level of social institutions and organizations) was determined. Based on the results of the factor analysis of the frequency vocabulary of expert interviews, a model of ideas about the process of implementing technological innovations at the macro level was formed (12 factors arranged in descending order of factor loadings) ²².

4. The main socio-cultural factors that facilitate and hinder the introduction of innovations into the everyday social practices ²³of residents of megacities are presented.

Scientific and practical significance of the work is disclosed in the expert-analytical, social, managerial and educational spheres. The results of the work can be used as a basis for expert assessments of the activities of public entities policies. The recommendations developed based on the results of the author's research can also become the basis for effective interaction between large corporations and government authorities in the field of digitalization of the economy and can be included in the scientific and theoretical basis for further institutionalization of the process of implementing digital innovations in megacities.

The obtained results can be used in the development and implementation of academic disciplines. higher education in the sociology of culture, sociology of digital society, as well as in the preparation of new various educational and methodological complexes on the relevant scientific topics. In addition, the study of this topic allows

²¹Lagutin Yu.V. Modern city: a look through the prism of socio-historical memory // *Sociology*. No. 3, 2020. P. 257-262.

²²Lagutin Yu.V. Development of scientific and technological innovations in a modern metropolis // *Izvestia SPbGEU* . No. 4 (136), 2022. P. 194-203.

²³Lagutin Yu.V. Historical and philosophical analysis of the scientization of social practices in a modern metropolis // *Sociology*. No. 5, 2019. P. 63-72.

us to identify and specify the interdisciplinary links of sociology with a number of scientific disciplines, as well as analyze significant empirical material.

Main scientific results (indicating the relevant works of the author of the dissertation):

- theoretical and methodological approaches to understanding the processes of diffusion of technological innovations in a modern industrial metropolis have been systematized, sociological approaches to studying these processes have been systematized, scenarios for the introduction of technological innovations into everyday practices in the period from 2000 to 2024 have been identified and analyzed.²⁴

- an analysis of the socio-cultural specifics of the introduction of technological innovations into the social practices of residents of an industrial metropolis was carried out, the socio-cultural features of this process at various levels of activity of the society of a modern metropolis were studied, and positive and negative effects from the introduction of innovative technologies into social practices at the macro- and microsocial levels²⁵ were identified through the use of expert assessments ;

- the discussion on the implementation of technological innovations in public arenas of industrial megacities is presented and analyzed, and socio-cultural factors in the development of technological innovations in modern Russian society are identified²⁶.

²⁴ See: Lagutin Yu.V. Historical and philosophical analysis of the scientization of social practices in a modern metropolis // *Sociology*. No. 5, 2019. Pp. 63-72 ; Lagutin Yu.V. The modern city: a look through the prism of socio-historical memory // *Sociology*. No. 3, 2020. Pp. 257-262; Lagutin Yu.V. Features of the formation of a metropolis in the era of digitalization // *Medicine. Sociology. Philosophy. Applied research*. No. 4, 2020. Pp. 92-96; Lagutin Yu.V. Study of the process of implementation of scientific and technological innovations in the life of a modern metropolis: general theoretical approaches // *Sociology*. No. 5, 2021. Pp. 211-216; Lagutin Yu.V. Scientization of everyday life in Russian megacities: stages of innovation implementation from 2000 to 2022 // *Big data and problems of society. Collection of articles based on the results of the International scientific conference (Kirov, May 19-20, 2022)*. - Tomsk: Publishing House of Tomsk State University, 2022. Pp. 106-111.

²⁵ See: Lagutin Yu.V. Digital technologies as an instrument of power // *Humanities, socio-economic and social sciences*. No. 4, 2019. Pp. Lagutin Yu.V. Areas of scientization research : understanding socio-cultural transformations and changes associated with the acceleration of innovation processes // *Medicine. Sociology. Philosophy. Applied research*. No. 4, 2021. Pp. Lagutin Yu.V. Reasons for the rejection of scientific and technological innovations by residents of large Russian cities // *Izvestiya SPbGEU* . No. 2 (146), 2024. Pp.

²⁶ See: Lagutin Yu.V. Models and Methods of Communication in the Modern World // *Sociology*. No. 4, 2019. Pp. 266-273; Lagutin Yu.V. Social Identification: Methods, Resources and Opportunities // *Issues of Management*. No. 4, 2018. Pp. 100-106; Lagutin Yu.V. Hipster Urbanism as a Type of Social Thinking // *Bulletin of the St. Petersburg State University of Economics*. No. 5 (119), 2019. Pp. 167-170; Lagutin Yu.V. Scientization of Social Practices in a Big City: Vectors of Social Change // *Sociology*. No. 4, 2021. Pp. 220-227; Lagutin Yu.V. Development of Scientific and Technological Innovations in a Modern Metropolis // *Bulletin of the St. Petersburg State University of Economics*. No. 4 (136), 2022. pp. 194-203.

The provisions submitted for defense:

1. The analysis of the cultural transformation of everyday life and the identification of the role of users of innovative technologies in this necessitates the generalization and systematization of sociological approaches to the study of the process of dissemination of scientific and technological innovations in the modern everyday life of residents of megacities. The process of introducing innovative technologies affects the interests of almost all social groups of modern Russian society and is marked by public discussions at the institutional (government institutions) and organizational (global corporations) levels with the involvement of experts as representatives of various participating actors (the Government of the Russian Federation, Rosatom, Sber, technology portals, regional control centers (RCCs), etc.). Currently, thanks to the introduction of new technological projects at the state level ²⁷, the population of the Russian Federation is receiving increasingly expanding access to the possibilities of using e-government services, which allows them to gain, among other things, access to critically important public arenas for expressing their opinions on the penetration of new information and communication technologies into everyday life. In this regard, the concept of constructing social problems (M. Spector, J. Kitsuse) was chosen as the most significant theoretical tool for analysis. The diffusion approach (E. Rogers) allows us to trace various aspects of the process of dissemination of innovations in its chronology and interaction of actors at different levels. The concept of mobilities (J. Urry) is the most heuristic for analyzing mobilization readiness as a factor in the acceptance/resistance of the diffusion of technological innovations at the individual level in the everyday life of the youth of a metropolis.

2. The process of introducing innovations into the social practices of residents of a modern metropolis has a rich historical and cultural context, starting with the first industrial revolution in Russia and other most developed countries of the world in the 18th–19th centuries. However, fundamental changes in this process occurred in the

²⁷See: Portal of public services <https://www.gosuslugi.ru/>, Electronic government in the Russian Federation <https://digital.gov.ru/ru/activity/statistic/rating/elektronnoe-pravitelstvo-v-rf/>

second half of the 1980s, reaching their peak in our time – after the explosive growth of digital information and communication technologies over the past 10–20 years.

the COVID -19 novel coronavirus pandemic has become an extremely powerful socio-technological catalyst that has accelerated the introduction of innovative technologies and products into the everyday life of the population and has had a significant impact on the socio-cultural practices of megacities .

3. The analysis conducted in the study allowed us to develop a typology of actors involved in the problematization of the introduction of new information and communication (digital) technologies when discussing this issue in various public arenas of modern Russian society:

- innovators and representatives of the scientific community;
- representatives of government agencies (relevant ministries, departments and elements of the infrastructure for supporting and developing innovations);
- public associations and organizations;
- consumers of innovative technologies;
- business represented by manufacturers, distributors and sellers.

The main areas of clash of opinions on the further diffusion of innovations today are:

- traditional media – television, radio, print media – and their versions presented in digital format;
- new media: social networks, information channels in messengers, text, photo and video blogs, as well as online media;
- statements by public politicians within the framework of articulating state interests and program goals;
- the sphere of science and innovation (forums, conferences, analytical publications);
- the area of advertising and commercial communications of manufacturers and trading enterprises focused on the mass introduction and distribution of innovative products;

- consumer communities that initiate an exchange of opinions regarding innovations that are being used and are being prepared for introduction;

- the sphere of mass culture, art and fashion.

4. Analysis of theoretical provisions and content analysis of publications on user experience in mastering scientific and technological innovations made it possible to identify the most significant scenarios for their use in everyday life. The latter include: eliminating information asymmetry in the sphere of consumption of goods and services by providing access to expanded information about them in the online environment; using social networks to find a full-fledged social environment; supporting the most talented authors through online platforms; gamification of social relations based on individual “smart services”; transferring some work operations and consumption to the online space; developing elements of the “sharing economy” (economy) in the space of a modern metropolis.

5. Identification of key areas of construction of social problems associated with the spread of digital technologies in the process of implementation of scientific and technological innovations made it possible to consider the processes of public communication of key agents of innovation diffusion.

The analysis of these processes allowed us to identify two polar points of view on the social consequences of the phenomena under study: (1) optimistic expectations of the positive effects of the spread of digital technologies, giving city dwellers new opportunities to improve their quality of life; (2) anxious concerns (up to “moral panics” and conspiracy theories) regarding new devices and their elements and a conscious refusal and/or limitation of the use of innovative solutions within the framework of individual or collective interaction with other users. All this allows us to say that the topic of introducing technological innovations into everyday urban social practices demonstrates high background and peak activity in the field of public information interaction due to deep penetration into the daily routinized social practices of a resident of a modern metropolis.

6. The diffusion of innovations is the result of interaction between subjects at different levels (through personal communication, advertising, administrative

involvement or coercion). Four groups of users are distinguished based on their attitudes toward various digital technologies: skeptics, cautious majority, enthusiastic innovators and selective innovators.

The following socio-cultural factors are identified as the dissemination of innovative technologies in the everyday life of Russian citizens: digitalization of interpersonal communications; digital socialization (appropriation of a convenient environment), overcoming the spiritual-innovative imbalance.

Digitalization of communication in its various forms has been revealed in maintaining personal (family, friendly, neighborly) contacts and institutional interactions (especially during the pandemic) based on the use of digital technologies. Defining the content of the digital socialization factor, one can name the degree of development of various lines of digital products that provide users with more comfortable living conditions. Finally, the factor of spiritual and innovative imbalance affects the disturbances of the cultural background that technological innovations bring both at the macro level and in personal communication of metropolis residents.

The city of Nizhny Novgorod, chosen as the object of the author's analysis, is a megalopolis located near the capital regions (Moscow, St. Petersburg), competing with other large industrial cities with a population of over a million (Kazan, Yekaterinburg, Perm) and demonstrating the implementation of technological innovations typical for industrially developed cities with a population of over a million in Russia.

Testing the research results held at the international scientific and practical conferences “Lomonosov Readings – 2020” (Moscow State University, 10.28.2020), “Lomonosov – 2020” (Moscow State University, 11.11.2020), Lomonosov Readings – 202” (Moscow State University, 04.27.2021), “Big Data and Problems of Society” (Kirov, 05.19-20.2022).

The results of the work were presented in the form of reports at meetings of the Department of Industrial and Applied Sociology of the Faculty of Social Sciences of the Lobachevsky State University of Nizhny Novgorod.

The main results on the topic of the dissertation are presented in 13 scientific publications with a total volume of 6.8 pp (personal contribution 6.8 pp), including 12

articles (6.3 pp) published in journals recommended by the Higher Attestation Commission under the Ministry of Education and Science of Russia.

Structure of the dissertation research. The dissertation consists of an introduction, two chapters, a conclusion, a bibliographic list of 189 titles, four appendices. The total volume is 186 pages. The factual basis of the research is given as of September 2024.

Chapter 1. Theoretical and methodological approaches to the study of the processes of diffusion of technological innovations in a modern industrial metropolis

This chapter presents a systematization of theoretical approaches applicable to the study of innovation diffusion processes in a modern metropolis and forming the basis of the theoretical and methodological basis for scientific understanding of digital practices as an integral part of the daily life of a large city in the context of the assessment of these practices both by the expert community and directly by the users themselves. At the same time, the systematization of scientific approaches presented in this part of the work is supplemented by an empirical examination of the phenomena and facts of social life that correlate with the problematic field of study.

It is advisable to begin the systematization of theoretical approaches to the study of the process of introducing technological innovations into the everyday life of the population of modern Russian megacities with an analysis of the representation of this issue in public arenas at different levels.

1.1. Systematization of sociological approaches to the study of the diffusion of technological innovations in a modern industrial metropolis

E. Toffler in his work “Future Shock” notes the high variability of the technological environment and the increasing speed of updating socially significant information in the life of a modern person, which determine the shock effect on a specific individual and shape his social behavior: “Between a society that selectively suppresses technological advancement and a society that blindly seizes the first opportunity that comes its way, sharp differences will quickly arise.

Even sharper differences will develop between a society in which the pace of technological development is moderated and guided to prevent future shock, and one in which the masses of ordinary people are deprived of the ability to make rational decisions. In the former, political democracy and large-scale participation are feasible; in the latter, powerful pressures lead to political rule by a tiny technological and

managerial elite. In short, our technological choices will decisively shape the cultural styles of the future."²⁸

In turn, M. Castells, examining similar issues, notes the fundamental transformations in the organization of production, employment and social interaction in general, which, in the context of the development of the information society and related technologies, is acquiring a network character: “for the first time in history, the basic unit of economic organization is not a subject, be it individual (such as an entrepreneur or an entrepreneurial family) or collective (such as the capitalist class, a corporation, a state). The unit is a network made up of a diverse set of subjects and organizations, constantly modified as networks adapt to the environments and market structures that support them ²⁹”.

The above ultimately forms the “spirit of informationalism”, which is a new cultural code, while emphasizing that, despite its ephemeral nature, it represents an effective force for everyone involved in network interaction through the exchange of information.

The process of introducing new technologies into society is studied within the framework of diffusionism (E. Rogers ³⁰), which considers innovations as "data" transmitted from inventors to social groups using various communication channels. According to this approach, the process of technology adaptation in society is built linearly, along an S-shaped curve, and goes through several stages of acceptance: from early users to the majority and is eventually accepted by those lagging behind.

The key mechanisms in this case are recognition, interest, evaluation, testing and recognition, expressed in the stages of slow growth due to the first consumers, rapid growth due to the early majority, and saturation due to the late majority. An important parameter of the spread of innovations in the social environment is the interaction of

²⁸Toffler E. Shock of the future / Trans. from English M.: AST, 2004. P. 475.

²⁹ Castells M. (1996). The Information Age: Economy, Society and Culture/ Vol.I: The Rise of the Network Society. Cambridge MA. Oxford UK: Blackwell Publishers. P. 198.

³⁰ See: Rogers E. Diffusion of Innovations. NY: Free Press, 1995; Rogers E., Kincaid L. Communication Networks: Toward a New Paradigm for Research. N. Y.: Free Press, 1980.

individuals based on the exchange of information and the transmission of experience in using innovative products.³¹

In turn, J. Urry, within the framework of the mobility paradigm, notes the importance of the heterogeneity of the social environment and social experience in the effective development of new technologies. Thus, the perception of innovations in everyday use will be significantly influenced by the use of the Internet and social networks, the level of coverage of the advantages of innovations in the media, personal experience and social connections, as well as the socio-demographic characteristics of the recipients.³²

The general theoretical framework for subsequent theoretical and empirical examination of the phenomena and facts of social life is the constructionist approach to social problems, which, in contrast to objectivism, allows for the study of mobile, unstable and not always recognized phenomena.

Since the emergence of theoretical justification by M. Spector and J. Kitsuse and in the 1970s,³³ this approach has found application in many areas of social knowledge: from demography and sociology to politics.³⁴ At the same time, constructionism, due to its mobility and flexibility in the formulation of the research question, also gives rise to resistance from those who are not ready to admit the existence of the identified problem within the framework of the struggle to form an “agenda” (setting), as understood by M. McCombs and D. Shaw.³⁵

³¹See: Baranovsky S., Puzyrevskaya A. Theory of modeling the diffusion of innovations // Science and Innovations. No. 10, 2018. P. 31-35, Blessing M. (2024). Diffusion of Innovations: How Adoption of New Technology Spreads in Society . 10.1007/978-3-031-60267-2_1.

³²See: Urry, J. Mobility / Translated from English. Moscow: Praxis, 2012. 576 p., ditto: Sociology beyond societies. Types of mobility for the 21st century. / Translated from English. Moscow: Higher School of Economics, 2012. 336 p. , Neidhöfer, G. , Ciaschi, M. , Gasparini, L. et al . Social mobility and economic development. J Econ Growth 29, 327–359 (2024). <https://doi.org/10.1007/s10887-023-09234-8>

³³ See : Spector , M. Kitsews J. Construction of social problems // Contexts of modernity-II: Actual problems of society and culture in Western social theory : anthology / compiled and general editor S. A. Erofeev. 2nd ed., supplemented and revised . Kazan: Kazan University Press, 2001. P. 160-163; Spector M., Kitsuse J. Constructing Social Problems. Menlo Park, CA: Cummings, 1977,

³⁴See: Polach, D. (2010). Social problems from a constructionist perspective. The Journal of Social Policy Studies, 8(1), 7–12. Phillips, M.J. Towards a social constructionist, criticalist , Foucauldian-informed qualitative research approach: Opportunities and challenges. SN Soc Sci 3, 175 (2023). <https://doi.org/10.1007/s43545-023-00774-9>

³⁵See: Dyakova E.G., Trakhtenberg A.D. Agenda and the information society: sociological essays. Moscow; Yekaterinburg: Cabinet scientist, 2019. Pp. 7-40.

In contrast, a constructionist researcher, based on the analysis of a large number of cases (case study), related to the problem, undertakes “putting forward claims-claims” (claim making, which involves a series of research activities aimed at broad public discussion and solution of the problem.

As noted above, the general theoretical basis for all related problems is the theory of the information society (E. Toffler), the concept of the network society (M. Castells), the theory of diffusion of innovations (E. Rogers), the approach to constructing social problems to identify the involvement of actors in the problematization of the introduction of innovations into everyday life (J. Kitsuse, M. Spector) taking into account changes in modern societies (J. Urry).

The author has carried out a preliminary historical and philosophical analysis of the scientization of social practices in the modern city (conducted as part of a separate study and is not presented in this review)³⁶.

In general, the systematization of sociological approaches made it possible to identify the following research areas.

A. Understanding the socio-cultural transformations associated with the development of the information society and the knowledge society with their subsequent cultural and political implications.

B. Consideration of changes associated with the acceleration of innovation processes focused on the consumption practices of modern man, arising from the cult of invention and the technologization of everyday life.

V. Analysis of various aspects of interaction between residents of a metropolis and the changed social environment against the backdrop of the implementation of the “smart city” concept, taking into account the nature of interaction between the main social actors: citizens, government bodies and businesses.

G. Determination of vectors of social changes in the future, taking into account changes in human interaction with technical means/technical environment.³⁷

³⁶See: Lagutin Yu.V. Historical and philosophical analysis of the scientization of social practices in a modern metropolis // *Sociology*. No. 5, 2019. P. 63-72

³⁷See: Lagutin Yu.V. Study of the process of introducing scientific and technological innovations into the life of a modern metropolis: general theoretical approaches // *Sociology*. 2021, No. 5. P. 211–216.

Each of the identified research areas is in turn divided into several research questions that are interconnected and influence the nature of the construction of social problems associated with the main problem - the spread of innovations in the everyday social practices of a resident of an industrial metropolis - and intersecting with several important themes brought to life by the general process of technologization of the economy and scientific research.

As for specific sociological approaches, within the identified research areas they can be presented in the form of Table 1.

Table 1

**Systematization of research approaches to studying
the problem of diffusion of innovations in a modern metropolis**

Problem area	Cross-cutting themes			
	Implementation of artificial intelligence and decision-making algorithms	Development of creativity and new digital competencies	Changing human consciousness	Changing social interactions of social groups
A. Understanding the socio-cultural transformations associated with the development of the information society and the knowledge society with their subsequent cultural and political implications	Analysis of human-machine relationships using user experience analysis through case interviews and questionnaires	Assessing the “digital divide” as perceived by people and authorities: summarizing opinions and statements in the public space	Assessing the level of stress in the process of interaction with a changing technological environment	Analysis of macrotrends in changing interactions between social groups and actors under the influence of technological innovations using statistical and correlation analysis

<p>B. Consideration of changes associated with the acceleration of innovation processes aimed at the consumption practices of modern man, arising from the popularity invention and technologization of everyday life and everyday life</p>	<p>Analyzing the automation of everyday life through the generalization of social media ratings</p>	<p>Assessing the level of adaptation and transformation of user experience in the long term through in-depth interviews and focus groups</p>	<p>Analysis of free time budgets of metropolitan residents, research using digital culture level testing</p>	<p>Participant observation of representatives of various social groups in the process of using technologies in everyday life: stratification of social communities, classification of social practices</p>
<p>V. Analysis of various aspects of interaction between residents of a metropolis and the changed social environment against the background of the implementation of the concept of a “smart city”, taking into account the nature of interaction between the main social actors: citizens, authorities and businesses</p>	<p>Smart Home Technologies in the Context of Smart City Development: Analysis of Advanced Technologies (Market Offerings) and Scenarios for Their Application (Consideration of Marketing Message Rhetoric)</p>	<p>Study of subjective perception of the new technological environment in terms of opportunities/threats and readiness, study of indices and ratings of development of “smart cities”</p>	<p>Expert survey on the reflection of individual interests and needs in regulatory acts</p>	<p>Exploring New Opportunities for Collaborative Action in Smart Cities: In-Depth Interviews with Urban Activists</p>
<p>G. Determination of vectors of social changes in the future, taking into account changes in human</p>	<p>Content analysis of forecasts regarding the development of artificial intelligence and its impact on</p>	<p>Analysis of prospective requirements for the competencies of the person of the future (Atlas of new professions, analysis of job postings,</p>	<p>Assessment of the probability (expert survey using the scenario method) of the introduction of social</p>	<p>Survey of experts on issues of future social interaction and its mediation by modern technologies</p>

interaction with technical means / technical environment	people's daily lives	offers of retraining courses)	control practices of individuals in the near future (“social rating”)	
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Source: developed by the author.

The sociological approaches and methods indicated in Table 1, as applied to the topic under consideration, allow us to cover most of the phenomena and facts of human interaction with innovations at the everyday level and will be further used in organizing and processing the results of the empirical part of the study.

The above general theoretical approaches allow us to formulate a special approach to examining the degree of study of research areas A, B, C and D and the specific social problems associated with them. The main focus will be on scientific works that take into account the social conditions of Russian cities, but also mention will be made of important studies aimed at universalization and horizontal connections of the world's megacities, considered in the context of the development of global cities and the connections between them, implemented without significant influence of national states.

First of all, we note the noticeable futurological component in the works devoted to the objective and life world of the person of the future. Thus, a number of researchers note the probability of the complete disappearance of physical interaction between people and even mediated by technical means.³⁸

At the same time, people and “smart machines” will be able to become equal partners who will have to build interactions on new principles that differ from the “user/owner – thing” dichotomy.³⁹

Design, according to E. Dunn and F. Raby, will play an even greater role in designing not only the behavior of citizens in the present, but also in the future, which will inevitably affect the development of political systems and the political sphere.⁴⁰

³⁸ See: Urry D. How looks like future ? / translated from English by A. Matveenko. Moscow: Delo, 2018. Pp. 218-220.

³⁹ See: Norman D. Design of Things of the Future / trans. from English. M: Strelka Press, 2013. P. 141-143.

⁴⁰ See: Dunn E., Raby F. Speculative World / trans. from English. Moscow: Strelka Press, 2017. Pp. 203-206.

A separate issue is the future change in the nature of social connections (personal, business, cultural) due to the development of the digital economy and new forms of interaction based on distributed computing (“blockchain”). The general mood of researchers considering this issue is associated with the emergence of new opportunities for democratization and the implementation of the most viable principles of social utopias⁴¹.

Finally, speaking about the future of everyday life and the role of information technology in it, one cannot fail to mention the problem of the post-human and its partial or complete fusion with cybernetic organisms (cyborgization)⁴².

At the same time, the prospect of transhumanism and a departure from currently accepted ethical norms and rules is becoming quite tangible and is capable of influencing decision-making by government officials and IT businesses.

Summarizing the above with regard to the prospects for the development of technologization of everyday human activity in the future, it becomes possible to identify two poles in assessing the prospects, opportunities, threats, risks and limitations associated with the continuation of trends that emerged in the last third of the 20th century and at the beginning of the 21st century: techno-optimism and techno-pessimism⁴³. The presence of such clearly expressed positions allows a modern researcher to form his own vision of the issues under consideration depending on the nature of the social phenomena and practices being analyzed.

A. In relation to understanding the socio-cultural transformations associated with the development of the information society (information economy) and the knowledge society, works deserve attention, the authors of which identify the general

⁴¹ See: McAfee E., Brynjolfsson E. *Car, platform, crowd: our digital future* / trans. from English. Moscow: Mann, Ivanov and Ferber, 2019. Pp. 278-279; Vinya P., Casey M. *The Truth Machine. Blockchain and the Future of Humanity* / trans. from English. Moscow: Mann, Ivanov and Ferber, 2018. P. 272-275.

⁴² See: Rebrova A.D. *Cyborgization of the human body How implementation of modern innovative technologies* // *Polytechnical youth journal*. 2018. No. 2. P. 1-7; Kutyrev V.A. *Posthuman revolution How the result of the technologization of the human world* // *Science. Thought*. 2017. No. 1-3. pp. 45-49. Grinin, L., Grinin, A., Korotayev, A. (2024). *Introduction: Between Human and Post-human Revolutions, or What Future Awaits Us?*. In: *Cybernetic Revolution and Global Aging. World-Systems Evolution and Global Futures*. Springer, Cham. https://doi.org/10.1007/978-3-031-56764-3_1

⁴³ See: Khalin V.G., Chernova G.V. *Digitalization and its impact on the Russian economy and society: advantages, challenges, threats and risks* // *Management Consulting*. 2018. No. 10. Pp. 46-63, Khalin V.G., Chernova G.V. *Digitalization and its impact on modern economic convergence - a methodological aspect* // *Management Consulting*. 2020. No. 8. Pp. 78-87

basis for changing the socio-cultural paradigm of human existence, namely the total dissemination of science and the cult of scientific knowledge, the penetration of technologies emerging within the framework of the R & D cycle (or R & D – Research and Development) into social everyday life. In a number of works, such changes are designated by the term "scientization", which is also applicable to the study of other social phenomena.⁴⁴ At the same time, F. Nicolas contrasts this concept with the democratization of scientific knowledge, its movement towards accessibility and partial desacralization of the figure of the scientist-expert, driven by the desire for the common good.⁴⁵

The figure of a scientist-innovator with obvious inclinations of a businessman, who also has a high level of creative potential and is more in demand both in the present and in the future, deserves special attention, which contributes to the formation of a new social hierarchy and requirements for the level of technological competence against the background of a deepening "digital inequality".⁴⁶ Another separate topic is the spread of the cult of creativity and invention. It, together with the uneven distribution of institutional factors of scientific development (the system of state support for innovation, the availability of a technological base for their implementation, market infrastructure and consumers of innovative products) leads, according to K. Martignano, to a further strengthening of the authority of scientific knowledge and frustration of people striving to be creative ("scientification of creativity").⁴⁷

⁴⁴ See, for example, works that problematize scientization of the political sphere and political rhetoric in the context of the development of technocratic thinking: Keller S. Scientization : putting global climate change on the scientific agenda and the role of the IPCC // *Poiesis & Praxis* . 2010. Vol. 7. No. 3. PP. 197-209; Zapp M. The scientificization of the world polity: International organizations and the production of scientific knowledge, 1950–2015. *International Sociology*. 2017. Vol. 33. No. 1. PP. 3-26.

⁴⁵ See : Nicolas F. Between "Scientization" and Democratization of Science: The "Politics of Expertise." // *Science as Culture*. 2012. Vol. 21. No. 2. pp. 259-263. Christensen T, Læg Reid P. Special Issue on The Scientization of Public Decision-Making Processes – the Relevance for the Handling of the COVID-19 Pandemic. *Public Organiz Rev*. 2022;22(2):215–21. doi : 10.1007/s11115-022-00632-x. Epub 2022 Apr 22. PMID : PMC 9027013.

⁴⁶ See: Mamedov A.K. Information society: a new ontology of social inequality // *Bulletin of Moscow University. Series 18. Sociology and political science*. 2014. No. 2. P. 187-198. Orekhov A. M., Chubarov N. A. Digital inequality and digital justice: socio-philosophical aspects of the problem // *Bulletin of RUDN. Series: Philosophy*. 2024. No. 1. URL : <https://cyberleninka.ru/article/n/tsifrovoye-neravenstvo-i-tsifrovaya-spravedlivost-sotsialno-filosofskie-aspekty-problemy> (date of access: 11/25/2024).

⁴⁷ See : Martiniano C. The Scientization of Creativity: "Innovate or die!" // *Journal of the Midwest Modern Language Association*. 2016. Vol . 49. No. 2. P p . 161-190.

The above points allow us to return to the well-known theoretical construct of M. Foucault “knowledge as power” and, in general, include some of the problems under consideration in the context of the development of a post-industrial society, which presupposes the expansion of the social functions of scientific knowledge as a response to technological challenges.⁴⁸

Finally, it is worth highlighting the works that problematize various aspects of social transformation under the influence of technologization and digitalization: the transfer of experience to the younger generation and the dissemination of unverifiable (“opaque”) decisions made by a group of technocrats based on the results of scientific research;⁴⁹ the need to study “social digitalization” – changes in social relations under the influence of digital technologies;⁵⁰ overcoming the “cultural lag”, expressed in the imbalance of growing scientific knowledge to the detriment of morality and culture as the main regulators of human behavior in society.⁵¹

Thus, the problem of introducing innovations into public relations in the context of the formation and development of the information society and information (digital) economy has received fairly comprehensive coverage in domestic and foreign scientific literature, which allows us to consider the degree of development of this area of research as sufficient for further specification in the process of constructing social problems.

⁴⁸See: Sadovaya E.S., Sautkina V.A., Zenkov A.R. Formation of a new social reality: technological challenges. Moscow: IMEMO RAS, 2019, Digital society — a new format of social reality: structures, processes and development trends: materials of the All-Russian scientific conference XIV Kovalev readings November 12–14, 2020 / Responsible. editors: N.G. Skvortsov, Yu.V. Asochakov . — St. Petersburg: Skifia-print, 2020. — 603 p . Osipova N.G. Digitalization of social reality: key discussions // Bulletin of Moscow University. Series 18. Sociology and political science. 2022;28(3):9-42. <https://doi.org/10.24290/1029-3736-2022-28-3-9-42> ; Shirokanova A.A. The role of science in the knowledge society // Collection of works of the 68th scientific conference of students and graduate students of the Belarusian State University. - In 3 parts. Part 2. - Mn.: Publishing center of BSU, 2013. P. 201.

⁴⁹See: Chernyak Yu.G. Digitalization and technologization of public life as a factor in the transformation of the socio-cultural sphere of modern society // Sociological Almanac. 2020. Issue 11. Pp. 176-183.

⁵⁰Karpova D.N., Proskurina A.S. Sociotechnical turn in the study of digitalization of society // Power. 2020. No. 1. P. 97-105.

⁵¹See: Sagitov S.T. Sociocultural sphere and development of the digital economy // Higher education in Russia. 2019. No. 10. Pp. 97-105. Dmitrieva T.V. Digitalization as a factor of sociocultural changes in Russia // Social and humanitarian knowledge. 2023. No. 7. URL: <https://cyberleninka.ru/article/n/tsifrovizatsiya-kak-faktor-sotsiokulturnyh-izmeneniy-v-rossii> (date of access: 11/25/2024).

B. Analyzing the changes associated with the acceleration of innovation processes focused on the consumption practices of modern man, the authors of scientific publications focus on the following topics:

Firstly, the key process associated with the diffusion of innovations into everyday life is currently considered to be the transition to the Fourth Industrial Revolution (Industry 4.0), the main characteristic of which is not the mass production of identical goods, but the maximum adaptation of production activities to the needs and characteristics of a specific consumer (“customization”). In this regard, one can note the fundamental works of P. Marsh and K. Schwab,⁵² who generally positively assess the growing role of the consumer who values the technological side of consumer goods. At the same time, it is noted that in fact, the user is alienated from the devices he uses: their complexity has increased so much that not only independent repair is difficult, but also advanced customization and use for other purposes. This aspect, in particular, is central to the work “The End of Ownership” by A. Perzanowski and J. Schulz, who note that the technologization and scientization of household devices leads to the fact that the conditions of their use are determined through legal procedures (user agreement) by developers, and not by owners, who are no longer considered as such.⁵³

Another important aspect of the diffusion of innovations is the prevalence of the design component in the development of new products, based on scientific research into user behavior and usage scenarios.⁵⁴ Industrial design, as researchers note, has become a separate scientific field at the intersection of psychology, sociology and anthropology and is capable of becoming a source of innovation in itself.⁵⁵ Concentrated in the concept of “design thinking”, this perspective on the interaction

⁵² See: Marsh P. *The New Industrial Revolution. Consumers, Globalization, and the End of Mass Production* / translated from English by A. Sholomitskaya . Moscow: Gaidar Institute Publishing House, 2015; Schwab K. *The Fourth Industrial Revolution. A Step-by-Step Guide to the Changes That Await Humanity in the Next 100 Years* / translated from English by A. Sholomitskaya. Moscow: Eksmo, 2016.

⁵³ See: Perzanowski A., Schulz J. *The End of Ownership: Personal Property in the Digital Economy* / trans. from English by E. Lebedeva. Moscow: Delo, 2020.

⁵⁴ See: Sazonova M.V. Commercialization of the results of intellectual activity within the framework of the development of the concept of creative industry "4.0" // *Moscow Journal of Economics*. 2021. No. 1. P. 464-671, Harper G. (2024). Natural knowledge and the creative industries. *Creative Industries Journal*, 17(3), 293–294. <https://doi.org/10.1080/17510694.2024.2423485>

⁵⁵ See: Verganti R. *Design-Driven Innovation. How to Change the Rules of Competition Through Radical Semantic Innovations* / trans. from English by N. Edelman; under scientific ed. by A. Krylova. Moscow: Delo, 2018. Velmisova D. V. Value-Semantic Prerequisites for the Development of Employee Innovativeness // *Telescope*. 2021. No. 3. URL:

of technical means and humans leaves the latter with little freedom in decision-making if each of their actions is calculated, tested and algorithmized. Thus, L. Suchman speaks of fundamental changes in the interaction of humans and machines, noting: “the task is not to attribute agency to people or things, but to consider the forms of materialization of subjects, objects and relations between them as a result - more or less long-lasting and controversial - of current socio-material practices .”⁵⁶

Along with the above-mentioned aspects of limited use and the integration of design as a result of scientific activity into people's everyday lives, it is worth noting the point related to the change in the balance of property rights and ownership. Since intellectual property plays a significant role in modern high-tech devices, a modern person can feel surrounded by powerful corporations ready to sue for any act of unauthorized use of a thing.⁵⁷

The use of modern technologies in modern life, as noted above, forces us to perceive the surrounding reality in a new way. The most significant trends in this regard, researchers mention gamification (the introduction of game logic and dynamics into everyday social practices using personal devices and applications) and the partially related quantification of social and individual activity - that is, the desire to take into account and evaluate any significant or seemingly significant actions: sports, eating behavior, travel, reading, learning foreign languages. The latter trend, however, as S. Hong notes, has a significant historical background, which has only intensified due to technological development.⁵⁸

The connection between gamification and quantification is especially strong in the formation of ratings and other forms of social competition and comparison. However, what is common in these processes is an attempt to regain some of the lost

<https://cyberleninka.ru/article/n/tsennostno-smyslovye-predposylki-razvitiya-innovatsionnosti-rabotnikov> (accessed: 25.11.2024).

⁵⁶See Suchman L. Reconfiguration of human-machine relations: plans and situational actions / trans. from English by A.S. Maksimova; edited by A.M. Korbut. Moscow : Elementary forms , 2019, Fox J., Gambino A. (2021). Relationship development with humanoid social robots: Applying interpersonal theories to human–robot interaction. *Cyberpsychology , Behavior , and Social Networking* , 24(5), 294–299. <https://doi.org/10.1089/cyber.2020.0181>

⁵⁷Greenfield A. Radical Technologies: The Structure of Everyday Life / trans. from English by I. Kushnareva . Moscow : Delo , 2018. P. 375-376.

⁵⁸Hong S. Scientizing Everyday Life, Rationalizing Eating Habits: The Rise of Nutrition Science in 1910s-1920s Japan // *Uisahak* . 2018. Vol . 27. No. 3. Pp . 447-484.

control a person has over his life and the objects and devices that surround him. By turning a device into a source of organized data, a person can interact with⁵⁹ a technologized everyday environment with less psychological costs.

An important aspect related to the diffusion of innovations leads researchers to the statement of the finiteness of life and the exhaustibility of the main human resource - time.⁶⁰ At the same time, there is an increasing density of interaction between modern people and other people and devices, which forces us to re-examine the issue of time management, minimization of information noise and, ultimately, “digital detox”.⁶¹ The latter, in turn, becomes an innovative strategy for user interaction with a scientized everyday environment, but does not solve the problem radically and is easily commodified by IT corporations through special applications for abandoning applications or accounting for time spent on them. We also note the presence of a large number of publications noting the potentially harmful impact of high-tech devices on the behavior and cognitive processes of both children and adults, which, however, does not go beyond the traditional alarmist rhetoric about any new technology over the past century: from the telephone, radio and television to the first versions of a personal computer and portable mobile devices.

V. The urban issues of the problem under consideration dictate the need to consider various aspects of the interaction of residents of a modern metropolis with a changed social environment against the background of the implementation of the concept of a “smart city”, taking into account the nature of the interaction of the main social actors: citizens, government bodies and businesses.

⁵⁹Burlachenko A.V. Gamification as a game mechanism that triggers psychological behavioral reactions both in the business environment and in everyday life // *Problems of modern economy*. 2013. No. 16. P. 130-135; Godvan D.F. Gamification. Application of game systems in business // *Business education in the knowledge economy*. 2019. No. 2. P. 28-31; Konstantinova E.S., Grishan M.A. Gamification . Typology of players and mechanics // *New generation*. 2017. No. 11. P. 57-62. Arlt F., Arlt HJ. *Gamification of Life and the Gaming Society*. Springer Cham. 2023. P. 123

⁶⁰Weissman J. *Time is running out: the acceleration of life under digital capitalism* / trans. from English by N. Eidelman. Moscow: Publishing House Delo RANEPА, 2022. P. 304.

⁶¹ Shaev Yu.M. Information redundancy and digital detox in the context of the ontology of communication // *Humanitarian vector*. 2018. Vol. 13. No. 2. P. 23-28; Soloviev D.N., Belous P.E. Media asceticism as a phenomenon of digital culture // *Philosophical problems of information technology and cyberspace*. 2014. No. 2 (8). P. 77-92. Mirbabaie M., Stieglitz S., Marx J. Digital Detox. *Bus Inf Syst Eng* 64, 239–246 (2022). <https://doi.org/10.1007/s12599-022-00747-x>

“Smart city” (Smart City) – a city with developed information systems, including communication and information technologies with the Internet for effective management of urban infrastructure.⁶² The main goal of implementing the concept of a “smart city” is to improve the standard of living of residents with the help of solutions based on information technology. With all the diversity of approaches to the study of "smart cities" and the research activities underlying them, we will limit ourselves to considering those elements of infrastructure or related phenomena that directly affect the daily life of people and sustainable social practices that allow us to construct current social problems.

First of all, we note the obvious psychological costs associated with both life in a big city and the use of information technology: this is, first of all, an increased level of stress associated with the transition from a comfortable environment of virtual interaction to real public spaces, as well as the problem of increasing isolation in one’s own world and worsening loneliness as a result of the development of unsuccessful scenarios of socialization in the conditions of a metropolis.⁶³

The inner contour of the “smart city” associated with individual housing brings us to the problem of the "Internet of things" and, in the limit, the "smart home" as a set of objects connected into a single network and controlled by a special algorithm and/or artificial intelligence depending on the tasks formulated by the user. Currently, a positive attitude towards this class of everyday life technologies prevails in scientific literature, the main argument being convenience, environmental friendliness and psychological comfort, “seamless” interaction with the technical environment and invisible infrastructure outside the “smart home”.⁶⁴

⁶²See: Townsend E. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia* / trans. from English by A. Sholomitskaya . Moscow: Gaidar Institute Publishing House, 2019; Akimova O.E., Volkov S.K., Khryseva A.A. The concept of "smart city": evolution, elements and form of implementation // *Theoretical Economics*. 2020. No. 6. P. 55-63; Picon A. *Smart Cities: a spatialised Intelligence*. L.: Wiley, 2015. *Smart Urbanism: Utopian Vision or False Dawn?* / Ed. by S. Marvin, A. Luque-Ayala and C. McFarlane. – L.: Routledge, 2016, *Smart Cities Concepts, Practices, and Applications* (Eds.: Kumar K., Saini G., Nguyen DM, Kumar N., Shah R.) 2024, CRC Press, P.329

⁶³Adli M. *Stress in the Big City* / translated from English by Yu. Bryanceva , M. Isaeva. Moscow Urban Forum , 2019; Kleinenberg E. *Life solo. New social reality* / trans. from English. Moscow: Alpina non-fiction, 2014.

⁶⁴Yudina M.A. *Internet of Things: Problems of Social Expertise* // *Communicology* . 2017. Vol. 5. No. 2. Pp. 50-67; Kibakin S.V. *From anthropocentrism to the sociology of things and digital sociology* // *Digital sociology*. 2019. Vol. 2.

The external contour of the “smart city” is determined by state policy and the policy of city authorities in interaction with representatives of business structures interested in the growth of the service economy and greater user involvement in digital social transactions. Based on this, the central research problem in this regard is the problem of developing digital services, on the one hand, increasing the convenience of their use, and on the other hand, strengthening the trends associated with the disunity of people and the formation of emotional dependence on high-tech devices for everyday use.

In existing reviews and ratings of smart city technologies, the emphasis is placed on user convenience, rather than on the possible negative consequences of interaction (often addictive) with a system that adapts to the needs and requirements of the user.⁶⁵

In this regard, the development of a sharing economy, which demonstrates a high dependence on the scale of the territory and is implemented in the conditions of a megalopolis with the lowest costs and with the obligatory use of information technologies (car sharing, kick sharing, daily rental of housing, etc.), deserves special attention.⁶⁶

It is also worth considering the invisible and unnoticeable side of the existence of a “smart city” – the collection and use of “big data” (Big data) about people and inanimate objects in the process of their daily interaction, regardless of location.⁶⁷ The

No. 1. Pp. 10-16, Chimarov S.Yu., Markova O.S. Theoretical and legal paradigm of the Internet of Things (IoT) in the context of the information society of the 21st century. *Law and State: Theory and Practice*. 2024. No. 8 (236). Pp. 52-54.

⁶⁵Digital Life of Russian Megacities. Model. Dynamics. Examples // Institute for Emerging Market Studies, Skolkovo Business School (IEMS) [Electronic resource]. 2016. Access mode: https://iems.skolkovo.ru/downloads/documents/SKOLKOVO_IEMS/Research_Reports/SKOLKOVO_IEMS_Research_2016-11-30_ru.pdf (accessed: 25.09.2024), Pyankova S. G., Zakolyukina E. S. Digitalization in the Socio-Economic Development of Regions and Cities // *Russia: Development Trends and Prospects*. 2023. No. 18-2. URL: <https://cyberleninka.ru/article/n/tsifrovizatsiya-v-sotsialno-ekonomicheskom-razvitii-regionov-i-gorodov> (date of access: 25.11.2024), Khamitov R M., Knyazkina O V. Digital transformation of the urban environment as a means of improving the quality of life // *Competence*. 2023. No. 5. URL: <https://cyberleninka.ru/article/n/tsifrovaya-transformatsiya-gorodskoy-sredy-kak-sredstvo-povysheniya-kachestva-zhizni> (date of access: 25.11.2024); IQ Index of Cities, Ministry of Construction of Russia [Electronic resource] Access mode: <https://minstroyrf.gov.ru/press/minstroyrossii-predstavil-pervyy-indeks-iq-gorodov/> (date of access: 09/25/2024); Smart cities Ranking of European medium - sized cities . – Vienna University of Technology , 2017 [Electronic resource] Access mode: http://www.smart-cities.eu/download/smart_cities_final_report.pdf (date of access: 09/25/2024), IMD Smart City Index 2024/ Report . URL : <https://www.imd.org/smart-city-observatory/home/>

⁶⁶Munger M. *Tomorrow 3.0. Transaction Costs and the Sharing Economy* / trans. from English by Yu. Kapturovsky ; edited by S. Shchukina . Moscow: Publishing House of the Higher School of Economics, 2021.

⁶⁷Data-driven cities: from concept to applied solutions. Moscow: PWC , 2016, Ivanov S. A et al. The concept of building a digital twin of a city // *Bulletin of SUSU. Series: Computational Mathematics and Informatics*. 2020. No. 4. URL:

general opinion is the recognition of the great potential of using “big data” to optimize city management through the prevention of social cataclysms (predictive analysis) and more effective planning of future development (strategic analysis).⁶⁸

At the same time, the implicit, hidden and non-public nature of collecting data on the lives of city residents (often without their informed consent), justified by concern for their safety and comfort, on the one hand, increases the psychological discomfort from the awareness of the presence of an “all-seeing eye”, and on the other hand, it can increase illegal activity associated with the desire (and acquisition of the necessary competencies) to bypass surveillance and information collection systems, up to “ techno-Ludditism ”. Therefore, a possible solution may be “the active involvement of citizens in the process of forming a holistic picture of the life of the city: messages on services on issues of improvement, the work of housing and communal services organizations, information on offenses, traffic jams and accidents, the consequences of natural disasters and emergency situations”.⁶⁹

The above-mentioned aspect, connected with the awareness of one's passivity and helplessness,⁷⁰ allows us to highlight another important point in the social practices of metropolis residents, caused, among other things, by the technologization of

<https://cyberleninka.ru/article/n/kontseptsiya-postroeniya-tsifrovogo-dvoynika-goroda> (date accessed : 25.11.2024); Analytical Report 4: Open Data in Cities // European Data Portal [Electronic resource] . 2016. Mode Access : https://www.europeandataportal.eu/sites/default/files/edp_analytical_report_n4_-_open_data_in_cities_v1.0_fial.pdf (date accessed : 24.09.2024); Analytical Report 4: Open Data in Cities // European Data Portal [Electronic resource] . 2020. Access mode: https://data.europa.eu/sites/default/files/edp_analytical_report_n4_-_open_data_in_cities_v1.0_final.pdf

⁶⁸ Elhoseny H., Elhoseny M., Riad A.M., & Hassanien A.E. A framework for big data analysis in smart cities // International Conference on Advanced Machine Learning Technologies and Applications. 2018. pp. 405-414; Mergel I., Rethemeyer R., Isett K. Big Data in Public Affairs // Public Administration Review. 2016. No. 76. PP. 928-937; Sarker MNI, Hossin MA, Frimpong ANK, & Xiaohua Y. Promoting information resource management for e-government through big data approach // Proceedings of the 2018 International Conference on Information Management & Management Science. 2018. pp. 99-104. Davies C. Big Data Analytics for Smart Cities. 2024. International Journal of Computing and Engineering 6(1):14-29

⁶⁹ Afanasyev K.S., Stepanova E.S. Possibilities and Limitations of Using Big Data Analysis to Optimize City Management Processes // Digital Transformation of Public Administration: Proceedings of the International Scientific and Practical Conference on September 25-27, 2019 / Under the general editorship of S.N. Bolshakov. St. Petersburg: Leningrad State University. Pushkin, 2020. Pp. 135-142. Moskvitina N.V. Digital Transformation of Public Administration // Sociology. 2021. No. 4. URL: <https://cyberleninka.ru/article/n/tsifrovaya-transformatsiya-gosudarstvennogo-upravleniya> (date of access: 11/25/2024). Federal project "Digital Public Administration" of the national program "Digital Economy of the Russian Federation". URL : <https://digital.gov.ru/ru/activity/directions/882/> Kholodenko Yu. A. Digital transformation of public administration: opportunities and risks // Bulletin of Moscow University. Series 18. Sociology and political science. 2022. No. 3. URL : <https://cyberleninka.ru/article/n/tsifrovaya-transformatsiya-gosudarstvennogo-upravleniya-vozmozhnosti-i-riski> (date of access: 11/25/2024).

⁷⁰ Vilovatykh A. V. Manipulation of social behavior in the digital environment // Scientific journal "Discourse-Pi". 2020. No. 2 (39). P. 149-164.

everyday activities and social relations. We are talking, first of all, about the technological possibilities for effective self-organization and joint activities of people in the urban space by means of publicly available information technologies and related devices. For example, about neighborly interaction within an apartment building (groups in social networks), unification around citywide (district) problems by means of electronic interaction and coordination of activities, as well as about interaction with authorities on issues of forming a comfortable urban environment.⁷¹

A separate area for the development of counter-civic activity within the framework of the reaction to the introduction of innovations into everyday life is urban farming and gardening, demonstrating both reliance on traditional agricultural and innovative technologies. According to a number of authors, this format of joint activity can serve as a basis for overcoming most of the negative phenomena associated with the technologization of the life of a modern metropolis resident.⁷²

Summarizing the consideration of approaches to the analysis of problems on the topic of the study related to the urban dimension of life of social groups and individuals, we note an element that runs like a red thread through all publications, namely, artificial intelligence and the prospects for its use. Noting the current insufficient level of its penetration into people's everyday life, the issues of its development and influence on the relations “man – machine”, “man – thing” and “man – man” should rather be attributed to the sphere of the near or distant future.

⁷¹Polischuk L. To wait for the authorities or to chip in ourselves: social capital in the life of the city // Incentives. Paradoxes. Failures. The city through the eyes of economists. / Ed. V. Auzan. Moscow: Stelka Press, 2015. Pp. 112-135; Federal project "Formation of a comfortable urban environment" of the national project "Housing and urban environment". URL : <https://minstroyrf.gov.ru/trades/natsionalnye-proekty/natsionalnyy-proekt-zhilye-i-gorodskaya-sreda/>, Smirnova I.N. "Living nearby": Neighborly relations in the urban space // Bulletin of the Ivanovo State University. Series : Natural , public science 2016. No. 1. P.56-63 ; Lozano E. Density in communities, or the most important factor in building urbanity. In: Larice M., Macdonald E. (eds) Urban design reader. Second edition. London; New York: Routledge, 2013. Pp. 399-414; Ilyina I. N. , Ovdenko E. N. City development V period COVID-19 pandemic . Research on the agenda of the forum "Strong ideas for a new time". Moscow: Agency for Strategic Initiatives, 2020. Brednikova O. E. Neighborhood in a Russian big city: time and place of neighborly communications // Journal of Sociology and Social Anthropology. 2023. No. 1. URL : <https://cyberleninka.ru/article/n/sosedstvovanie-v-rossiyskom-bolshom-gorode-vremya-i-mesto-sosedskih-kommunikatsiy> (date of access: 11/25/2024).

⁷²Guseva A. V. Agriculture and urbanization: Japan's experience in preserving multifunctional urban landscapes // Academia . Architecture and construction. 2013. No. 2. P. 90-94; Montgomery C. Happy city. How urban planning changes our lives. Moscow: Mann, Ivanov and Ferber, 2019; Ngumbi E. Growing Urban Agriculture // Stanford Social Innovation Review . 2017. Winter. pp. 17–21; Owen D. Green Metropolis: Why Living Smaller, Living Closer, and Driving Less Are the Keys to Sustainability. NY: Riverhead books , 2011. Technologies of the Future. Russia remains a country of techno-optimists who trust the technologies of the future. VTsIOM report. 2023. URL : <https://wciom.ru/analytical-reviews/analitycheskii-obzor/tehnologii-budushchego>

G. The latest research area on the problem of the spread of digital innovations in a modern metropolis is associated, first of all, with the definition of vectors of social changes in the future, taking into account changes in human interaction with technical means / technical environment.

In works devoted to the material and life world of the person of the future, the futurological component is very noticeable. As we have already noted, a number of researchers predict the probability of the complete disappearance of physical interaction between people, including even mediated by technical means,⁷³ when people and “smart machines” can become equal partners on new principles, different from the relationship in the form of “user / owner – thing”.⁷⁴ Design will have to play an increasingly important role, designing the behavior of people in the present and future and influencing the development of the political sphere.⁷⁵

As for the changing nature of social connections and relationships due to the development of the digital economy and new forms of interaction based on the development of blockchain technologies, most researchers focus their attention on the emergence of new opportunities for democratization, as well as the implementation of a number of viable principles of social utopias.⁷⁶

A separate topic related to reflections on the future of everyday life and the role of IT is the problem of the “posthuman” and its full or partial fusion with cyberorganisms (cyborgization).⁷⁷ At the same time, the prospect of transhumanism and departure from currently accepted ethical norms and rules is becoming quite tangible and capable of influencing decision-making by representatives of the authorities and the information technology business.

⁷³Urry D. What does the future look like? / trans. from English by A. Matveenko. Moscow: Delo, 2018. Pp. 218-220.

⁷⁴Norman D. Design of things of the future / trans. from English. M: Strelka Press, 2013. P. 141-143.

⁷⁵Dunn E., Raby F. Speculative world / trans. from English M.: Strelka Press, 2017. pp. 203-206.

⁷⁶McAfee E., Brynjolfsson E. Machine, platform, crowd: our digital future / trans. from English. Moscow: Mann, Ivanov and Ferber, 2019. P. 278-279.

⁷⁷See: Sokolova M. E. Cyborgization of man: the social and legal dimension // Social innovations and social sciences. 2022. No. 4 (9). URL: <https://cyberleninka.ru/article/n/kiborgizatsiya-cheloveka-sotsialno-pravovoe-izmerenie> (date of access: 11/25/2024).; Kuttyrev V. A. Post-human revolution as a result of the technologization of the human world // Science. Thought. 2017. No. 1-3. Pp. 45-49.

Summarizing the consideration of the degree of scientific and expert development of the problem of technologization of everyday activities of a resident of a modern megalopolis , we note the need - due to the mobility and relevance of the issues under consideration - for a constant scientific search and reconfiguration of research approaches within the framework of interdisciplinary analysis. The presence of competing positions of “techno-optimism” and “techno-pessimism” in assessing ongoing processes ⁷⁸not only speaks of the complexity and ambiguity of the problem, but also requires the development of an approach that assumes a flexible response to changes occurring with the object under study. New research data and results obtained with the help of this approach will ultimately contribute to more substantiated and practically significant conclusions and recommendations.

1.2. Diffusion of technological innovations in Russian megacities: scenarios for implementation in everyday practices (2000–2024)

Based on the conducted systematization of the processes of implementation and dissemination of innovations in a modern metropolis and approaches to its study, it becomes possible to determine the main stages and scenarios for the implementation of advanced scientific achievements in the form of applied technologies into the everyday life of city residents, influencing the individual perception of typical problems associated with interaction with other people in the space of a metropolis. At the same time, the division and partial diffusion of personal and public space becomes a key topic when considering the trends in the technologization of everyday life over the past two decades.

The starting point was chosen to be between the 1990s and 2000s for a number of reasons.

⁷⁸ Technologies of the future . Russia remains a country of techno - optimists who trust the technologies of the future. VTsIOM report. 2023. URL : <https://wciom.ru/analytical-reviews/analiticheskii-obzor/tekhnologii-budushchego> ; Polovnikova N.A. , Nikolikhina S.A. Digitalization in Russia: Problems and Prospects / International Journal of Humanities and Natural Sciences. 2022. No. 11-4 . URL : <https://cyberleninka.ru/article/n/tsifrovizatsiya-v-rossii-problemy-i-perspektivy> (accessed: 25.11.2024) .

Firstly, information technologies oriented towards commercial use of the Internet receive significant support from investors and recognition from the financial sector during this period, which saw the development and implementation of technological innovations as an opportunity to create new markets and models of consumer behavior. Despite the subsequent normalization of the business environment after the so-called "dot-com boom" (the excitement in the financial markets caused by the significant revaluation of shares of companies oriented towards business models using the Internet and registered in the ". com " domain), innovations oriented towards the resident of a modern metropolis have proven their relevance and viability.⁷⁹

Secondly, in popular culture at the turn of the 1990s and 2000s, images of the future associated with the use of virtual reality technologies, artificial intelligence, "smart" assistants (robots and microrobots) and devices, partial cyborgization, as well as mediated presence at any point on the globe (and in space) through information and telecommunications networks, are spreading (not least due to the introduction of new technologies of 3D modeling and digital image processing) in everyday interactions. In connection with this role of cinema as a social visionary, we can mention such films as "The Matrix", "Existence", "The Thirteenth Floor" and others, which made it possible to convey ideas from philosophical treatises and science fiction to the general public.⁸⁰

Thirdly, the spread of the Internet and information technologies has significantly diversified the sources of socially significant information, undermining the monopoly of television and the printed press, which allows us to talk about a new configuration of forces in the civil-political sphere. During this period, nation states are taking their

⁷⁹ Tolkachev S.A., Popov A.K. Formation of financial bubbles at the growth stage of the economic system // Bulletin of the Financial University. 2015. No. 2. pp. 84-95, Kochetkov E.P., Anisimova A.S., Gubliya E.B. Financial bubbles as a factor in the emergence of a new technological revolution: development of an analysis methodology // Bulletin of the Moscow City Pedagogical University. Series: Economics. 2023. No. 1 (35). URL: <https://cyberleninka.ru/article/n/finansovye-puzryi-kak-faktor-vozniknoveniya-novoy-tehnologicheskoy-revolutsii-razvitiye-metodologii-analiza> (date of access: 11/25/2024).

⁸⁰ Take the Red Pill: Science, Philosophy, and Religion in The Matrix / Translated from English; edited by G. Yefetta . Moscow: Ultra. Culture, 2003; Mironov V.V., Sokuler Z.A. Longing for True Being in Digital Culture // Bulletin of Moscow University. Series 7. Philosophy. 2018. No. 1. Pp. 3-22, Maltseva A.V., Povidysh A.V. Metauniverses in Tourism: Will Simulation and Simulacrum Replace Life Experience. Modern Cities and Social Management in Russia and China. Collection of Articles from the XIX Russian-Chinese Sociological Conference. St. Petersburg, 2023. Pp. 209-216.

first steps in regulating the activities of transnational corporations, including in the field of information technologies, and are also developing the first versions of measures related to a targeted policy for the development of electronic interaction between government, business and citizens. Such actions indicate, first of all, that the Internet and information technologies have passed the stage of "toys for geeks" and have become an object of interest for government bodies due to their widespread use and potential integration into everyday social practices.⁸¹

Finally, we cannot fail to mention the “Y2K Problem” – a complex of mass semi-apocalyptic expectations from the unpreparedness and/or inability of computers programmed to perceive the year designation in the format of the last two digits to cope with the transition from 1999 (the last two digits are “99”) to 2000 (the last two digits are “00”, as in 1900), which could cause a failure of all electronic systems and a potential shutdown of life support infrastructure in cities. This problem, actively discussed in a mass format throughout the second half of 1999, allowed the issues of the impact of computer technologies and the scientific research that initiated their emergence on the sustainability and quality of life of an ordinary person to be moved to the center of the world agenda.⁸²

As noted above, the main stages of technologization of everyday practices of modern city residents unfolded in the space of individual consumption (personal space at home, in a car, at work) and within the framework of sustainable social practices and options for social interaction (public spaces and objects, including virtual ones), as well as at the boundaries of these spaces and in the zones of their interpenetration and mixing. In this regard, individual elements of the innovative everyday environment receive different embodiment and application in personal and public space depending on the stage under consideration.

It should also be noted that the stages presented below primarily characterize periods of the most active public discussion or active construction of a social problem,

⁸¹ See: Kuznetsov S. *Feeling the Elephant: Notes on the History of the Russian Internet*. Moscow: New Literary Review, 2004, Ivanov R.E., Khakhina A.M. *The Internet in the USSR and Russia: Milestones in History. Notes of a Scholar*. 2020. No. 2. P. 166-168.

⁸² Frunze A. “Problem 2000” and your path to success // *Components and technologies*. 2000. No. 2. P. 3-4.

generally corresponding to the stages of recognition and interest, as interpreted by E. Rogers. At the same time, due to the limited volume of public arenas, certain innovations gradually gave way to subsequent ones, without losing supporters and innovative potential for transforming everyday life as a whole.

In a generalized form, the stages of implementation and scenarios for using elements of technologization of everyday life discussed below can be presented in the form of Table 2.

Table 2

Chronology and scenarios for the implementation of technological innovations in the life of a modern metropolis

Name and time limits of the stage		Use cases for technological innovations		
		Personal space / individual consumption	Public spaces / social interaction	Combination of personal and public space / personal consumption and social interaction
1	Development of communication capabilities of computer technology (2000-2007)	Effective search for information about objects in the “real” world in order to purchase necessary goods and services / Scenario 1.1	Development of flash mobs and smart crowd technologies in coordinating mass events and activities / Scenario 1.2	The emergence of aggregators of online advertisements for goods for sale and services provided / Scenario 1.3
2	Implementation of mobile technologies and the formation of sustainable practices of digital content consumption (2002-2009)	Using the Internet to Find Books, Movies, and Other Information in Digital Form / Scenario 2.1	Development of social networks to find the most suitable social environment / Scenario 2.2	Development of the use of search services for employees and potential partners for personal relationships / Scenario 2.3
3	Creating opportunities for creativity and sharing its results using high-tech devices (2007-2015)	Using personal devices for creative expression (video recording, photography) / Scenario 3.1	Crowdsourcing as a way to create information resources and solve social problems / Scenario 3.2	Supporting the most talented authors with the help of special platforms, developing charity platforms / Scenario 3.3

4	The spread of “smart assistants” (smart gadgets) and “wearable electronics” (wearable electronics) (2011-2017)	Formation of an industry for “tracking” health parameters, consumption, financial behavior, use of individual elements of the “smart home” / Scenario 4.1	Development of “mobile cartography” and cartographic services that allow for the correction of socially significant information / Scenario 4.2	Data exchange and gamification of individual and social practices, coordination of efforts of individual consumers of limited resources / Scenario 4.3
5	Development of distance technologies in the sphere of work, study and other forms of social interaction (2013-2019)	Transferring some work to an individual space, developing delivery services and professional services / Scenario 5.1	Development of electronic government services within the framework of resolving individual life situations, development of electronic assistants and helpers within the framework of social interaction / Scenario 5.2	Formation of an environment for the exchange of work operations, rethinking the educational environment in the context of the development of “ edutainment ” (as a combination of education and entertainment) / Scenario 5.3
6	Generation and processing of “big data”, development of “smart city” infrastructure (2016-present)	Engaging citizens in full digital interaction with the corporate sphere and with government bodies by providing personal data and information on social microtransactions in exchange for a high level of individualization of service and consumption / Scenario 6.1	Development of approaches within the framework of coordination of social actions and construction of predictive models of social behavior, use of geographic information systems within the framework of grassroots civil initiatives / Scenario 6.2	Development of models of economy of sharing of housing, cars, clothes and other resources, as well as individualized formats of mass production and consumption / Scenario 6.3

Source: developed by the author.

Let us repeat that individual stages arise against the background of the preceding ones and in the background continue to actualize certain tendencies of the spread of innovations after the emergence and development of subsequent stages of technological development in the sphere under consideration. The years of the greatest activity within the framework of a particular stage and perception are indicated as time frames.

Below we will consider the options for implementing in the space of a modern metropolis the scenarios for the introduction of technological innovations presented in Table 2 in their interrelationships over the specified chronological periods. In this case,

the main attention will be paid to the innovative component of each stage in the context of urban development and the transformation of social practices of city dwellers.

It should also be borne in mind that the scenarios for the implementation of the innovations under consideration within the framework of everyday behavior and interaction of residents of megalopolises fully correspond to the structure of the perception of any innovations by individuals and groups of people according to the model of diffusion of innovations by E. Rogers and the diffusion model by Frank Bass.

⁸³According to the specified approaches in the perception of innovations and the scientific research and technological component embodied in them, the following groups of recipients are formed (in brackets, based on empirical studies of markets for innovative products, the approximate share of each group is presented) ⁸⁴:

1. “Innovators” (about 2.5% of all potential users) are individuals who strive to be the first to try out new products and technologies, including within the framework of “prestigious consumption”, which allows them to stand out and form the image of a “techno geek” or “techno enthusiast” - a person who is ready to accept new products, services or opportunities without hesitation. Each representative of this group, due to its small size, has a limited influence on representatives of other groups, but a more tangible influence on other innovators. In addition, it is worth noting the experimental nature of the innovators' activities, since the probability that the innovation they support will not find further support among representatives of other groups is quite high, which allows us to evaluate this role model within the framework of the term “novelty for the sake of novelty”.

2. “Early adopters” (about 13.5%) – individuals with significant social capital, a willingness to broadcast their preferences through various media channels, and other members of society who listen to their opinions. Playing the role of members of society setting new guidelines for socio-cultural development for representatives of other

⁸³See: Khasanov A.R. Evolution of theories of new product launch // *Business Strategies*. 2016. No. 1 (21). P. 24-28; Moore J.A. *Crossing the Chasm: Marketing and Selling High-Tech Products to the Mass Consumer* / Translated from English. Moscow: Williams Publishing House, 2006.

⁸⁴See: Baranovsky S., Puzyrevskaya A. Theory of modeling the diffusion of innovations // *Science and Innovations*. 2018. No. 10. Pp. 31-35; Blanutsa V.I. Spatial diffusion of digital innovations: trends, problems and prospects of empirical research. *Spatial Economy*. 2021. Vol. 17. No. 4. Pp. 118-142.

social groups, early adopters are able to adapt unusual technological solutions that do not always correspond to previous experience to the needs and expectations of ordinary people.

3. The “early majority” (about 34%) is the most preferred group of individuals for producers and developers of innovative technologies, following the models of consumption and use of new products, services and opportunities broadcast by early followers. The time lag required for the emergence of the early majority group allows creators of new technological implementations to eliminate shortcomings based on the feedback received in the process of their use from innovators and early followers. Representatives of the early majority allow us to talk about the success of innovations, ensuring the completion of the R&D cycle and the initiation of new scientific research and development.

4. The “late majority” (around 34%) are individuals who are initially skeptical of any innovations and do not want to follow the imperatives of fashion and changeability in their preferences of mass behavior. However, social pressure in the work or personal sphere forces representatives of this group to perceive and use innovative products and services. In addition, legislative requirements or economic reasons can have a significant impact, for example in the case of individual entrepreneurs or other actors operating in a highly competitive environment or subject to significant administrative regulation.

5. “Laggards, or conservatives” (about 16%), sometimes referred to as “retrogrades”, unite heterogeneous individuals with different motivations, demonstrating different scenarios of innovation perception: from obvious and unambiguous denial (“technoluddites”, “analog fundamentalists”) to creative processing of elements of new technological solutions within the framework of bizarre and unforeseen options for use and their adaptation to their unique and non-standard needs and ideas. In the latter case, we are talking about a reconfiguration, unconditionally accepted by representatives of other groups of the set of elements of innovative technology and the launch of a new cycle of scientific research. It should

also be said that the group of laggards often appears as an important source of individual cases for representatives of the technological expert community.

It should be noted that the increase in the number of supporters of using a particular technology embodied in a specific user solution only at an early stage depends on the marketing efforts of the manufacturer, relying later on recommendations and social connections within the framework of interpersonal communications. Social practices and scenarios for the introduction of new technologies are a natural result of the exchange of opinions and interaction of individuals, including with the use of innovations that serve as a subject of communication. Thus, within the framework of the stages of actualization in the mass consciousness of certain technological innovations and scenarios formed on the basis of their use considered below, it is possible to identify key actors (users characterized by different levels of involvement in the process of perceiving innovations, according to the classification of E. Rogers; government bodies implementing information and innovation policy; corporations interested in developing and bringing innovative products to market), as well as communication channels and methods of forming public opinion based on the dissemination of information and the exchange of experience based on personal and impersonal (virtual) interaction.

Stage 1. Development of communication capabilities of computer technology (2000–2007). This period is characterized by the transition to the perception of a computer as an entry point to the Internet with its capabilities for unlimited interaction and search for necessary information of a scientific, entertaining, and everyday nature. The transition to HTML 4 (a standardized language for hypertext markup of documents for viewing web pages in a browser), further development of Internet browsers and search engines, along with the development of hardware – the emergence of full-fledged portable computers, PDAs (pocket personal computers), mobile phones with Internet access – provided previously unseen communication capabilities to a resident of a large city, making his daily life more intense and complete.⁸⁵ Further development

⁸⁵ Malseed M, Wise D. Google. A Breakthrough in the Spirit of the Time / Translated from English. Moscow: Eksmo, 2007; Arutyunov V.V. On Modern Mobile Computer Platforms // Bulletin of the Moscow University of Finance and Law.

within this stage of previously existing online marketplaces, ad services, messengers (desktop and mobile) allowed the residents of the metropolis to feel like inhabitants of a "global village", where everyone, if they do not know each other, at least have the opportunity to communicate, sell, buy or make an appointment. Based on this, the most representative within this stage were the following scenarios for the implementation and use of technological innovations in the life of the Russian metropolis, identified on the basis of the prevailing format of their use (individual, collective or mixed).⁸⁶

Scenario 1.1. Elimination of information asymmetry in the sphere of consumption of goods and services by providing access to extended information about them. Internet trade and the emergence of sites duplicating information about objects presented in the physical space of the city have made it possible to make a more informed choice based on comparison and determination of the optimal mode of interaction with them.⁸⁷ Within the framework of this scenario, the emergence of the ability to independently search, compare and verify information is regarded by a resident of a megalopolis as the achievement of another degree of freedom in the management of personal resources.

Scenario 1.2. Coordination of actions in the physical space of the city using stationary and mobile devices. The possibilities for prompt interaction and coordination of actions using portable devices with an Internet connection have allowed residents of megacities to organize interaction in the urban space with great effect for various purposes: artistic and entertainment (flash mobs and happenings with the participation of previously unknown people gathering in a designated place through coordination in the Internet space), civil (organization of mass non-violent actions with

2013. No. 3. P. 172-178, Han B. et al. Assessing the effect of digital platforms on innovation quality: mechanism identification and threshold characteristics // Humanities and Social Sciences Communication. 11, 951 (2024). <https://doi.org/10.1057/s41599-024-03465-9>

⁸⁶Lagutin Yu.V. Scientization of everyday life in Russian megacities: stages of innovation implementation from 2000 to 2022 // Big data and problems of society. Collection of articles based on the results of the International scientific conference (Kirov, May 19-20, 2022). - Tomsk: Publishing House of Tomsk State University. 2022. Pp. 106-111.

⁸⁷Nikulin E.I., Polshchikov K.A., Lomakin V.V. Comparative analysis of the development of online trade in Russia, Great Britain and the USA // Scientific result. Economic research. 2020. Vol. 6. No. 1. P. 35-41.

subsequent regrouping in another part of the city), charitable (organization of collection of things and money in a designated place and at a specified time).⁸⁸

Scenario 1.3. Social interaction based on individual needs and interests. Activities under this scenario involve the exchange of information about goods and services, as well as work in the Internet space and with the help of communication tools with new capabilities, followed by a meeting in physical space. It is at the junction of individual needs and group interaction within this and subsequent stages that technologies are formed that are further developed. In this case, these are social networks (and their prototypes) and specialized sites with advertisements. In addition, this scenario involves the use of various evaluation and rating tools, which is also a promising element of future innovations in this area.

Thus, despite the qualitative leap in the development of technological innovations used in everyday life, their use in the mode of individual, collective and mixed interaction still reproduces in the visual space the relationships and mode of action characteristic of the physical world. The latter in the period under consideration is the predominant reference object for residents of the metropolis in the process of scientization and technologization of everyday life. At the same time, the influence of the government and corporations at this stage is reduced to a minimum and is often ignored when discussing new possibilities of computer technology.

Stage 2. Implementation of mobile technologies and formation of sustainable practices of digital content consumption (2002–2009). This period is characterized, first of all, by the further development of mobile phones for the purpose of consuming entertainment and other content, as well as diversification of social contacts. The appearance of the first user-friendly keyboardless mobile phone from Apple, the interface of which was oriented towards connecting to the Internet, contributed to the strengthening of the degree of personalization of the use of devices of this class and their integration into the everyday life of metropolis residents. The launch of an online

⁸⁸See: Reingold G. *Smart Crowd: A New Social Revolution* / Translated from English by A. Garkavyi. Moscow: FAIR - PRESS, 2006; Ayesha S. et al. (2024). Edge-assisted federated learning framework for smart crowd management. *Internet of Things*. 27. 101253. 10.1016/j.iot.2024.101253.

store of mobile phone applications in 2008, in turn, ensured the implementation of behavioral patterns and user schemes within specific life and everyday situations: planning personal time, listening to music, purchasing goods, ordering food. The process of searching and downloading audio and ⁸⁹video works on the Internet (often illegally) and the development of peer-to-peer networks for file sharing deserve special mention. At the same time, the above-mentioned focus on content consumption and social interaction on this matter becomes a key theme of the period under consideration of scientization and technologization of everyday practices of city dwellers, implementing the following scenarios.

Scenario 2.1. Individualization of media content consumption within unique digital collections. The phenomenon of "digital collecting" that arises in the process of implementing this scenario has had a significant impact on the development of the electronic media industry: from optical discs to flash drives and portable hard drives. Thanks to the development of torrent trackers and peer-to-peer networks, it is becoming possible to form your own set of files containing works that have suddenly become available. The problem of Internet piracy, which was also relevant for previous periods within the framework of the behavior model under consideration, is acquiring the character of everyday non-commercial use, which in the future will allow producers and distributors of digital content to focus on the convenience of using legal channels for obtaining it.⁹⁰

Scenario 2.2. Using social networks to find a full-fledged social environment. Emerging and developing social networking sites (previously foreign, now increasingly Russian) are used both to exchange information about one's preferences and hobbies, and for full-fledged communication, partially or completely replacing interaction in physical space. The parallel flourishing of online simulation games also contributes to the migration of residents of large cities to virtual public spaces, causing

⁸⁹ See: Isaacson W. *Innovators. How a Few Geniuses, Hackers, and Geeks Made the Digital Revolution* / Translated from English. Moscow : Corpus, 2015.

⁹⁰ Davies S. , Parry G., Carruthers J., Kepple-Palmer M. *The Epistemological Foundations of Music Piracy in the Digital Marketplace.* // *Foresight and STI Governance.* 2015. vol. 9, no 4. Pp. 42-53, Janssens J. et al (2009). *The Music Industry on (the) Line? Surviving Music Piracy in a Digital Era* // *European Journal of Crime, Criminal Law and Criminal Justice.* 17. 10.1163/157181709 X 429105.

public concern and the emergence of the first scientific studies of Internet addiction and the impact of smartphones on people's health.⁹¹

Scenario 2.3. Using online social exchange mechanisms to resolve personal issues. Social networking and exchange of opinions and information mechanisms within this scenario are used to resolve pressing issues of finding a job, partners for personal relationships, rare items and books. In addition, it is worth noting the development of a new trend within the general concept of WEB 2.0, based on user interaction with Internet resources, creating and uploading their own content (UGC - User - generated content During this period, user content, potentially monetized in the future, is limited to fragments of personal data and comments or detailed reviews on sites that bring together people with common interests .

Summarizing the consideration of the second stage of the introduction of technological innovations into the everyday practices of residents of megacities, it is worth noting the emergence of virtual public and individual spaces for communication, often capable of replacing physical spaces and performing a number of socializing functions for representatives of the younger generation or for representatives of social groups unable to move independently and limited in finding work and creative self-realization. The role of government bodies and corporations within this stage is reduced to the introduction of restrictive legislative measures and opposition to the illegal use of intellectual property, which largely shapes the tone of statements by representatives of these actors regarding the innovations of this period.

Stage 3. Creating opportunities for creativity and sharing its results using high-tech devices (2007–2015). The impetus for development and widespread distribution accumulated by social networks and messaging services in the previous period is being developed in new scenarios for the introduction of technological innovations into the

⁹¹See: Ayzyatov , F.A. Sociosystems in the Conditions of the Information Society // Humanities and Education. 2012. No. 1. P. 35-38; Nemykina , O.I. Globalization of Virtual Reality and Innovative Processes in Modern Society // Humanities and Education. 2013. No. 1(13). P. 73-76, Zubareva S.S. Information Society in the Russian Federation: Development Trends and Prospects. Scientific Almanac of the Black Sea Countries. 2021; 28(4): 3-8. <https://doi.org/10.23947/2414-1143-2021-28-4-3-8>.

everyday life of city dwellers within this stage. In this regard, the following scenarios can be noted as the most widespread.

Scenario 3.1. Using individual mobile devices for creative self-expression with subsequent uploading of results to special platforms focused on user-generated content and building their business models on it (video hosting services, photo and video services). Thanks to the development of the technological base of mobile devices (processors for processing video and photo images, video cameras for shooting, software for editing and correcting creative products), it becomes possible to almost instantly post photos and videos on the Internet and receive feedback from other, no less creative users. ⁹²Such a reorientation from consumption to creativity has significantly influenced the development of traditional creative industries, forcing a review of sound and image parameters, pushing for the creation of Dolby technologies Surround and 3D images .

Scenario 3.2. Development of collective interaction formats for solving common problems. This scenario is focused on the development of previously widespread formats of collective solutions to socially significant problems , called "crowdsourcing" (English: crowd - crowd, sourcing - use of resources). In this context, the latter means the use of the labor and resources of a large number of volunteers based on the use of information technology. ⁹³Now, in the conditions of a modern city, it is not necessary to go to a clean-up day, sit in a working group or committee to solve some of the problems. It is enough to simply write a few lines of code for a program, translate part of a phrase from a rare language, provide unused computer capacity, or help artificial intelligence recognize scanned books by entering the words indicated in the picture when authorizing on sites. The pinnacle of crowdsourcing initiatives to this day continues to be considered the technology of online encyclopedias.

⁹²See: Zudochkina A.A. Blogs as the most important media form in user media // Bulletin of Moscow University. Series 10. Journalism. 2010. No. 3. pp. 117-127, Chechulin A.V. et al. Blogosphere as a specific environment of digital communication // Management Consulting. 2023. No. 4 (172). URL: <https://cyberleninka.ru/article/n/blogosfera-kak-spetsificheskaya-sreda-tsifrovoy-kommunikatsii> (date of access: 02.12.2024).

⁹³See: Howe J. Crowdsourcing: Collective intelligence as a tool for business development / Transl. from English M.: Alpina Publisher, 2012; Akst R. Anatomy of crowdfunding, or the ICO phenomenon . – M., Ridero , 2017; Lenart - Gansiniec R. (2024). Crowdsourcing in Management Research: A New Tool for Scientific Inquiry (1st ed.). Routledge . <https://doi.org/10.4324/9781003482253>

Scenario 3.3. Support for the most talented authors of works through online platforms. This scenario integrates the two previous ones and introduces the concept of public expertise ("voting with the ruble") in the assessment of finished and emerging scientific and artistic works. Crowdsourcing in the aspect of raising funds to support noteworthy initiatives and called "crowdfunding" (crowd - crowd, funding - search and collection of financial resources) allows professional and non-professional authors to receive mass support at the stage of creation and subsequent existence of the work. Such platforms allow not only to collect the funds necessary for the implementation of the project, but also to form a circle of early followers for their innovative ideas. As a promising innovation for subsequent stages based on the scenario under consideration, we can note collective support for scientific research and the development of technological innovations without the use of the traditional infrastructure for supporting innovative activities: venture funds, government subsidies and business accelerators.

Thus, the leitmotif of the third stage of scientization of everyday practices of metropolis residents is the further deepening of interactivity and the emergence of full-fledged virtual public spaces that ensure self-expression of participants and the solution of real social problems. At the same time, the government and corporations demonstrate a gradual change in rhetoric regarding the scenarios under consideration towards readiness to finance, support and use innovative solutions of this stage in line with their own interests.

Stage 4. Distribution of "smart assistants" (smart gadgets) and "wearable electronics" (wearable electronics) (2011–2017). The devices considered in this period, containing the results of scientific developments and perceived as consumer innovations in the space of the metropolis and in the social practices unfolding in it, were reflected in the concept of a "smart environment" or, in a domestic context, in the elements and solutions of a "smart home" (smart house). In this regard, we will note

the most sustainable scenarios for the introduction and use of technological innovations at the social and everyday level.⁹⁴

Scenario 4.1. Quantification of individual urban behavior. This scenario assumes further integration of mobile devices, applications and related sensors into everyday life to track important or seemingly important parameters: time spent, health and body condition indicators, food eaten, calories burned, financial behavior and planning features. In addition, in the context of the development of the "Internet of Things" (IoT, Internet of things), which involves the interaction of various household appliances and devices with each other within the framework of specified algorithms (for example, regulating the strength of morning coffee prepared by a smart coffee maker based on data from a person's fitness bracelet about the strength of sleep and blood pressure), there is a further desire to technologize the household environment and automate some of the routine operations, which often leads to opposite mental effects. Social psychologists and specialists analyzing mental disorders of metropolis residents suggest considering the desire for the most complete accounting and tracking of personal life parameters as a reaction to the contradictions between the chaos of the surrounding life and the physical space of the city and understandable and accessible digital indicators in the application.

Scenario 4.2. Online public activity. The implementation of new approaches to social interaction within this scenario often comes down to online petitions and interaction with government bodies and businesses through feedback forms, as well as using geolocation services. By developing the principles of crowdsourcing, city residents are able to correct outdated information on online maps, record problems in the housing and utilities sector, and generate user requests for online services and offline businesses.

Scenario 4.3. Gamification of social relations based on individual "smart services". As the name suggests, the scenario involves not only collecting individual data, but also implementing a competitive aspect in social interaction with subsequent

⁹⁴ See: Greenfield A. *Radical Technologies: The Structure of Everyday Life* / Translated from English. - Moscow: Delo, 2018. P. 238-240.

ratings and more diverse motivation of participants. Gamification in this context (the introduction of game and competitive elements into traditional areas of activity and social practices), among other things, allows in urban conditions to meet social goals and needs in the area of improvement (snow removal from streets in winter, energy saving in an apartment building, separate waste collection, etc.).⁹⁵ All of the above allows us to consider the described scenario as a zone of socio-cultural innovations in the use of elements of scientific achievements in subsequent periods.

Based on the results of using technological innovations during the fourth stage, it can be noted that the polarization of personal and public space as a result of using new technological solutions can both worsen, giving rise to various mental disorders and social deviations, and be overcome through the exchange of user data and information in an open mode, generating a significant amount of data. At the same time, government bodies and corporations are significantly interested not only in collecting, but also in actively exchanging user data to solve strategic problems of public administration and business development.

Stage 5. Development of remote technologies in the sphere of work, study and other forms of social interaction (2013–2019). This period is associated with the development of previously emerging trends related to the optimization of personal, corporate and government expenses by switching to remote formats of work and social interaction.⁹⁶ Personal presence and communication are gradually becoming a kind of luxury, rather than an annoying necessity, in connection with which the following scenarios for the implementation and use of innovations in everyday urban life can be identified.

Scenario 5.1. Transfer of some work operations and consumption to the online space. The implementation of this scenario is associated with the rapid development of delivery services, taxi ordering and provision of professional services, the transition to

⁹⁵ See : Thiel SK A review of introducing game elements to e-participation // Proceedings of the 6th International Conference for E-Democracy and Open Government, CeDEM , 2016. Pp. 3-9; Juliano G. et al. 2024; "Citizens' e-Participation in the Digital World: Empirical Insights from Europe." // Public Money & Management, March, 1–10. doi:10.1080/09540962.2024.2329709.

⁹⁶ See: Srnicek N., Williams A. Inventing the future. Post-capitalism and a world without labor / Trans. from English N. Okhotina. M.: Strelka Press, 2019.

a project-based work mode in the "gig economy" format (one-time hiring of a worker to perform a unique work function or action).⁹⁷ In addition, it is worth mentioning the expansion of employment opportunities regardless of social status, nationality, physical condition or territorial location.

Scenario 5.2. Development of corporate and state social electronic services. This, among other things, involves active interaction with electronic assistants based on artificial intelligence, further algorithmization of social practices in the metropolis (interaction with interfaces and terminals, filling out forms and switching through the voice menu). Portals based on the analysis of user feedback are gradually moving into a proactive mode and generating proposals and recommendations for solving life situations and social problems based on the analysis of large data arrays.

Scenario 5.3. Formation of horizontal network structures for the exchange of individual skills and knowledge. This variant of scientization of everyday practices ensures non-hierarchical interaction of individuals within the framework of common interests, which allows us to talk about a new round of development of educational systems in the format of "edutainment" (edutainment is a combination of educational technologies and approaches from the entertainment sphere, from English: education - education and entertainment - entertainment),⁹⁸ reformatting of freelancing into options for interaction with elements of mutually beneficial cooperation (online exchange of work operations), development of free markets and platforms for exchanging things. The last element, as in the case of scenarios 1.3, 2.3, 3.3, 4.3, allows

⁹⁷ See: Shevchuk A. V. On the Future of Labor and the Future Without Labor (Futurological Discussions) // Economic Sociology: Electronic Journal (www.ecsocmsses.ru). 2005. Vol. 6. No. 3. May. Pp. 4-25; Crouch K. Will the Gig Economy Win? / Translated from English by Yu. Kapturovsky / edited by S. Shchukin . Moscow: Publishing House of the Higher School of Economics, 2020; Lynn T . et al . (2023). Introducing the Future of Work: Key Trends, Concepts, Technologies and Avenues for Future Research. In: Lynn, T., Rosati, P., Conway, E., van der Werff , L. (eds) The Future of Work. Palgrave Studies in Digital Business & Enabling Technologies. Palgrave Macmillan, Cham. 2023rd Edition / https://doi.org/10.1007/978-3-031-31494-0_1

⁹⁸ See: Samosenkova T.V., Savochkina I.V. Edutainment technology : on the history of the issue // Scientific bulletin of Belgorod State University. Series Humanitarian Sciences. 2017. No. 28 (277), issue 36. 2020. - P. 142-149; Mokh A.V., Tarabuev A.N., Khokhlacheva E.V. Application of edutainment technology as a means of improving the effectiveness of training in the discipline "Tactical and special training" in educational organizations of the Federal Penitentiary Service of Russia // Education. Science. Scientific personnel. 2024. No. 1. URL: <https://cyberleninka.ru/article/n/primenenie-tehnologii-eduyeyment-kak-sredstva-povysheniya-effektivnosti-obucheniya-po-distipline-taktiko-spetsialnaya-podgotovka> (date of access: 02.12.2024).

us to talk about the transition to new principles of technologization of social practices in a modern metropolis.

Based on the results of the consideration of the scenarios of the fifth stage of the introduction of technological innovations into the everyday life of Russian cities, it should be noted that the pandemic and the new coronavirus infection COVID -19 have had a significant impact on the development and acceleration of the processes and phenomena described above. The mechanism for the introduction of social innovations has moved from a smooth build-up of the late majority and the involvement of the laggards to an imperative format of elementary reactions of adaptation of the public and private sectors to the challenges of the time, which, however, does not yet allow us to talk about the emergence of a new stage in the area under consideration.

Stage 6. Generation and processing of "big data", development of the " smart city" infrastructure (2020 - present) . The previous development of new technologies and innovative solutions in the city space after the introduction of a number of analytical and integration mechanisms made it possible to move on to the next stage, characterized by a gradual, not always obvious transition from recording and analyzing social transactions of individuals and communities to their modeling in the right way, guided by commercial interests, safety requirements or the requirement to maximize public goods for each individual in the process of their distribution and use. It should also be noted that the environmental agenda has changed towards the personal responsibility of each resident of the metropolis instead of accusing the impersonal "evil empire" of transnational corporations. All this contributed to the formation of the presented scenarios.

Scenario 6.1. Individualization of social and corporate services in exchange for personal data. This scenario assumes further immersion of a big city resident at the everyday level in interaction with digital services, which implies providing access to a large set of personal data and preferences: government services, retail chains, search engines and online cinemas are ready to provide any options for the most convenient service based on the information collected about the user. This circumstance raises the

level of individual involvement in interaction with the digital environment to a new level.

Scenario 6.2. Counter movement of key authors of social transformations within the framework of processing “big data” (big data). This scenario assumes, on the one hand, more efficient use of the civil contour of the “smart city” infrastructure, and on the other hand, the construction of predictive models of government response taking into account statements on citywide forums, portals, marks in geographic information systems, processing of video surveillance data and the “safe city” system (incident management system, etc.).⁹⁹

Scenario 6.3. Development of elements of the “sharing economy ” economy) in the urban space. This scenario is implemented in the “throw into the unknown” mode and, if successful, is capable of laying the foundations for a new stage of introducing technological innovations into the everyday life of city residents and reformatting the social and everyday sphere towards greater environmental responsibility and minimizing the city’s “carbon footprint”.¹⁰⁰ Among other things, this option for interacting with new technologies involves rethinking the attitude towards property (“subscription instead of ownership”), which leads to the spread of rental services for cars, scooters, bicycles, housing, clothing and even digital content (music streaming services, online cinemas, etc.).

A logical conclusion based on the results of the stage under consideration will be the recognition of the breakdown of traditional relationships of big city residents to things in their possession or use, as well as a gradual transition to minimalistic and sustainable social practices in terms of impact on ecological systems.

⁹⁹ See: Afanasyev K.S., Stepanova E.S. Possibilities and Limitations of Using Big Data Analysis to Optimize City Management Processes // Digital Transformation of Public Administration: Proceedings of the International Scientific and Practical Conference on September 25-27, 2019 / Under the general editorship of S.N. Bolshakov. St. Petersburg: Leningrad State University named after A.S. Pushkin, 2020. Pp . Digital Transformation of Public Administration / M. V. Ryazantseva // Economy, Entrepreneurship and Law. - 2024. - Vol. 14, No. 11. - Pp. 6951-6962.

¹⁰⁰ See: Weizsäcker E. U. von, Hargrove K., Smith M. Factor Five. Formula for Sustainable Growth: Report to the Club of Rome / Translated from German by S. I. Derkuns kaya . Moscow: AST-Press, Institute of World Ideas, 2013; Füchs R. Green Revolution. Economic Growth without Damaging the Environment. / Translated from German by S. I. Derkuns kaya.

An analysis of the stages and scenarios for the introduction of technological innovations into the everyday social practices of residents of a modern metropolis allows us to identify the following moments and trends common to all the elements considered:

A. The sphere of combining individual scenarios and collective formats of interaction between city residents in the process of using new technological solutions is a source of trends and ideas for subsequent stages of the considered process of scientization of everyday life in a modern metropolis.

B. Consumer electronics exhibitions, geek culture festivals, and foresight sessions at the corporate level and with the participation of government representatives can be considered as experimental platforms and sources of innovation.

V. Over the period under review (2000–2024), the role of the customer of innovations is gradually shifting from venture funds and national innovation systems to potential users, which allows us to speak about a change in the balance of interests in the development of this area.

Finally, it should be noted that the innovative development itself and the process of introducing technological solutions into the everyday life of modern city dwellers occurs in fits and starts, based on impulses caused by temporary enthusiasm and rollbacks caused by partial disappointment in the results. This circumstance requires consideration of the stated topic in the context of a combination of various individual and collective interests, which is what is supposed to be done in the next paragraph of this dissertation.

1.3. Discussion of the implementation of technological innovations in the public arenas of modern industrial megacities

of scientization of everyday life and technologization of social practices in a modern metropolis considered in the previous paragraphs allow us to move on to identifying and analyzing key actors and public arenas for constructing social problems

of changing society in the process of implementing technological innovations. At the same time, the balance of axiological (based on values) and pragmatic (based on interests) approaches to studying public life in this case will inevitably be shifted towards the latter.

Thus, this paragraph will consider the constructed social problems associated with the implementation of innovations. into the everyday life of residents of large cities in the process of their representation in the public sphere. The space where the struggle for the audience's attention and resources for solving problems unfolds is public arenas - zones that ensure the clash and harmonization of individual views and judgments in the process of forming public opinion. Finally, the driving force in the formation of the current agenda are individual and group interests, conditioned by various socio-cultural factors and the position in the decision-making system in public policy.

The concept of public arenas, first formulated in a comprehensive manner in the works of S. Hilgartner and C. L. Bosk, generally draws on the constructionist traditions of G. Blumer , M. Spector and J. Kitsuse , and defines this phenomenon as institutions where the struggle for public attention to a particular social problem unfolds.¹⁰¹ Examples of public arenas include “the executive and legislative branches of government, the courts, television films, cinema, the mass media (television news services, magazines, newspapers and radio), organizations engaged in conducting political campaigns, social action groups, the sphere of direct mail and requests (direct mail solicitations), books dealing with social issues, learned societies, religious organizations, professional societies and private foundations¹⁰². ”

In the above-mentioned institutional spheres, according to the authors of the concept, discussion, selection, definition, formulation, dramatization, design and presentation of social problems to the public take place. Based on this, the key features

¹⁰¹ See: Hilgartner S., Bosk C.L. Rise and Decline of Social Problems: The Concept of Public Arenas// Social Reality. 2008. No. 2. P. 78, Vasilkova V.V., Legostaeva N.I. Bots in the Public Arenas of Social Networks Sociological Journal. 2021. Vol. 27. No. 4. P. 99-117.

¹⁰² Hilgartner S., Bosk C.L. The Rise and Decline of Social Problems: The Concept of Public Arenas // Social Reality. 2008. No. 2. P. 78; see also: Habermas J. The New Structural Transformation of the Public Sphere and Deliberative Politics / Translated from German by T. Atnasheva - Moscow: New Literary Review, 2023. - P. 104.

of public arenas for the topic under consideration are the need to dramatize a social problem (often expressed in an exaggerated presentation of the clash of interests of individual actors, their irreconcilability and diametric opposition) in the process of selection and struggle for the attention of the public, which in turn is determined by the capacity of each of the public arenas. At the same time, weakening attention to the problem is often in no way connected with its solution and overcoming. These moments, ultimately, allow us to consider social problems as a reflection of collective ideas, opinions and judgments, and not as a mechanical reflection (manifestation) of the objective conditions of socio-cultural development.

It should be noted that the concept of public arenas is largely associated with the concept of the "public sphere" as a focus of mass representations and articulations of individual and group interests in the process of achieving consensus (primarily political).¹⁰³ A feature of the modern (from the late 1990s to the present) period of development of public arenas and the public sphere, according to a number of researchers, is the fragmentation and equivalent functioning of various structures that ensure the formation of public opinion and collective perception of social problems.¹⁰⁴

The spread of the Internet and digital repositories of information materials of the past and present has transformed the standard process of the increase and gradual decline of the relevance of a particular problem, conditioned by the capacity of one or several public arenas and the principles of selection dictated by the functionaries of these institutions in order to ensure the interests of the initiators of public discussion. Now we can talk about a kaleidoscopic change in points of view, forms of articulation of values and interests of various social groups in the spaces of public interaction.¹⁰⁵ In

¹⁰³ See: Habermas J. Structural Change of the Public Sphere. Research on the Category of Bourgeois Society / Translated from German / M., D&D&. 2016; Batsenkova A.A. Transformations of the Public Sphere as a Reflection of the Process of Individualization // Bulletin of Moscow University. Series 18. Sociology and Political Science. 2019. No. 25(1). P. 130-144.

¹⁰⁴ See: Bodrunova S.S. Concepts of the public sphere and mediocratic theory: the search for common ground // Journal of Sociology and Social Anthropology. 2011. No. 2. Pp. 110-132; Gutorov V.A. Intellectuals as a "new mediocracy": historical and theoretical aspects of interpretation Bulletin of the Kabardino-Balkarian State University: Journalism. Education. Literature. 2021. Vol. 1. No. 1. Pp. 26-43.

¹⁰⁵ See: Kosorukov A.A. Search engine and social network algorithms as a factor in the formation of the digital public sphere // Politics and Society. 2018. Vol. 2. No. 2. Pp. 23-31, Esselevich E.A., Rasskazov S.V. Recommender algorithms in the "digital" management of consumer behavior // Russian society today: values, institutions, processes. Proceedings of the All-Russian scientific conference / St. Petersburg, Publisher: OOO Publishing House " Scientia ", 2023.

other words, traditional public arenas are formed on the basis of horizontal connections of representatives of various interest groups, and not vertical integration of levels and stages of representation of social problems in the information environment.¹⁰⁶

Thus, within the framework of the topic under consideration, it becomes possible to identify both fairly stable public arenas and interest groups, as well as temporary structures within the framework of network interaction – fragmented public platforms for discussing individual aspects of a particular social problem, as well as temporary coalitions within the identified interest groups, formed to articulate and defend their positions and points of view.

First of all, let us note the most popular and influential public arenas, which are in demand as sources of information on current trends in socio-cultural development by residents of a modern metropolis:

1. The sphere of mass culture, art and fashion as a focus of universal meanings and patterns of behavior, as well as role models and normative (approved) behavioral scenarios for the majority of recipients. Books, films, music and music videos, demonstrated clothing and things and devices perceived as “fashionable” broadcast and disseminate the image of a “fluid” and mobile modernity (Z. Bauman), filled with opportunities provided by innovative technologies that should be used in order to be competitive and in demand.

2. Traditional mass media - television, radio, printed press and their Internet duplicates, which, however, can become a full-fledged replacement for broadcasting and leafing through newspapers and magazines for some of the audience. While maintaining the image of an official and verified source of reliable information for the majority, these channels of informing the public can in some cases play the role of a detector of the special importance of a particular social problem due to the still strict selection and limited bandwidth of this public arena. In other words, if the presentation of a new smartphone model is discussed in the news on a federal TV channel, this really worries the majority of the audience at the moment.

¹⁰⁶See: Keene J. *Democracy and the Decadence of Media* / Translated from English by D. Kralachkin ; edited by A. Smirnov. Moscow: Publishing House of the Higher School of Economics, 2015.

3. New media: social networks, information channels in messengers, text, photo and video blogs, as well as online media allow for the formation of a wider range of social problems addressed to a largely segmented audience. The popularity of a particular topic can develop in the background and for a part of the public be the main topic of discussion for a long time.

4. Statements by public politicians within the framework of articulating state interests and program goals, usually related to acceptable rates of socio-economic development and growth in the standard and quality of life of the population. An important aspect is the rhetoric related to the introduction of innovations and support for this process within the framework of individual events of government bodies, focused on the expectations of citizens within the electoral cycle.

5. The sphere of science and innovation is represented in the public space by the statements and actions of scientists and innovative entrepreneurs, as well as representatives of the state and non-state infrastructure for supporting projects in this area. Publications, speeches, statements informing the public about achievements and inventions that can become the basis for future innovations are in one way or another oriented towards reflecting the needs for solving the problems of an individual (usually a resident of a large city) and social communities.

6. Civil associations and public organizations of various orientations form a set of statements in the format of support for certain initiatives in the sphere of technologization of everyday life, condemnation or expression of alarm/concern regarding technological innovations or requirements for actors implementing technological innovations in the social and everyday sphere in terms of ensuring safety, environmental responsibility or ethical compliance.

7. The area of advertising and commercial communications of manufacturers and trade enterprises focused on the mass introduction and distribution of innovative products among the most receptive audience in this regard. As in the case of the sphere of mass culture, the imperatives of “consumption for survival” and “consumption for maintaining the level of self-esteem” acquire decisive significance and at certain moments cause a contradictory reaction from consumers and authorities, forcing

marketers and developers of trade offers to adjust the content of the message and the arguments used.

8. Consumer communities that initiate an exchange of opinions on innovative products that are in use and are being prepared for launch on the market, aimed at transforming the everyday environment of the modern city dweller, ensure the involvement of new supporters of certain technological solutions and ensure a constantly reproducible interest in the results of innovative activities.

In terms of identifying stakeholders or actors involved in the problem-solving activities, it is necessary to clarify their composition and identify the following social groups that have their own separate or partially overlapping interests:¹⁰⁷

A. Innovators and representatives of the scientific community are interested, first of all, in the successful use and implementation of the results of scientific activity within the framework of various business models or in the process of achieving the goals of socio-economic development at the level of a country or region.

B. The state, represented by relevant ministries, departments and elements of the infrastructure for supporting and developing innovations, links the introduction of the most successful technological solutions into people's daily lives with the implementation of priority goals of social and economic policy at the macro and micro levels.

V. Society articulates public interests related to ensuring the basic rights and opportunities of citizens with the help of public associations and public organizations, as well as in the format of feedback with government bodies and business structures.

G. Consumers are largely focused on the implementation of individual interests and needs related to ensuring convenience and comfort in solving social and everyday issues of life in a metropolis, including in terms of optimizing (saving) limited resources.

D. Business, represented by manufacturers, distributors and sellers, is interested in implementing sustainable practices for consuming goods and services with high

¹⁰⁷ See: Vnuk- Lipinsky E. Sociology of public life / Translated from Polish by E.G. Gendel. M: Mysl., 2012. Pp. 294-296.

added value within the framework of an accelerated cycle of renewal and obsolescence of an object that embodies scientific achievements and inventive thought.

Along with the above-mentioned traditional and new, but sufficiently stable public arenas, it is worth mentioning temporary elements of the public discussion field, relevant for the implementation of the interests of a separate group of actors. These public platforms, emerging at the intersection of the described public arenas and actors involved in information interaction, are presented in Table 3.

Table 3

**Public arenas and agent groups,
constructing the problematic of innovation processes**

Public arena		Actors in the process of technologization of everyday social practices				
		A. Innovators	B. State	IN. Society	G. Consumers	D. Business
1	Mass culture , art , fashion	Formation, broadcasting and popularization of the image of a scientist, innovator	Formation of the image of a modern state focused on innovative development and solving the problems of citizens	Reflection in popular culture of problems arising from the use of new technological solutions	Creating an image of a modern city dweller who successfully uses new technological solutions in everyday life, demonstrating scenarios of “prestigious consumption”	Integration of business strategies and popular culture in the process of dissemination of socially approved patterns of behavior and consumption of innovative products
2	Traditional media	Expert comments on current events, interviews	A story about the achievements of state policy in the field of support and development of innovations, demonstration of the results of policy in this area at the everyday level	Full information about the pros and cons of new technologies, displaying the full range of problems of residents of a modern metropolis	A story about the life of the city's inhabitants that has become simpler and more harmonious in the process of using technological innovations	Dissemination of information about the social component of business (corporate social responsibility), emphasis on solving the problems of residents of large cities

3	New media	Blogging and popularization of the results of innovative/scientific activities	Popularization of achievements and promising directions of the state innovation policy with the help of social media, support of youth initiatives	Broadcasting opinions, assessments and comments of users of social networks and online media regarding contradictions and problems of technologization of everyday life	Generation of ratings and indices related to the implementation of a feedback mechanism and exchange of opinions in the process of using technological innovations	Integration of business and new media in the process of forming loyal audiences with subsequent transmission of positive experience to the public
4	Space public politicians	Targeted support for scientists, scientific communities and inventors within the framework of the grant system and competitions for innovative projects	Formal and informal events that ensure interaction between government officials and stakeholders in the process of implementing innovation and scientific policy	Discussion of the parameters of state regulation and public control in the sphere of technological innovations	Activation of requirements for the protection of consumer rights and personal data of users in conflict situations	Participation in the system of state support for the innovation sphere through venture financing or co-financing mechanisms
5	Science and Innovation	Scientific conferences, thematic exhibitions and forums institutionalizing new scientific topics and research directions	Targeted support for scientists, scientific communities and inventors within the framework of the grant system and competitions for innovative projects	Articulating the ethical limitations and responsibilities of scientists and innovators for the consequences (positive and negative) of using technological innovations	Participation in advanced research and focus groups, testing of innovative products	Interaction with the scientific community on the basis of the “customer-contractor” model, formation of a network of business contacts that ensures the integration of science and market mechanisms
6	Civilians associations	Educating and advising members of the “concerned public” on the implications of the introduction and use of new technologies	Explanation of state policy in the field of development of “smart cities”, use and processing of personal data, generation and use of “big data” in public administration	Conducting forums and conferences on the implementation and use of new technological solutions in everyday urban life	Collective interaction with manufacturers and sellers of innovative products on issues related to their operation	Dissemination of information about the social component of business (corporate social responsibility), emphasis on solving the problems of residents of large cities

7	Advertising and business communications	Using references to scientific research and innovative components of products when promoting them at exhibitions and during promotional events	Using reference to government support when creating new products as a guarantee of safety and public interest	Evaluation of advertising in terms of compliance with the declared properties and effects of using innovative products	Ensuring full information in the process of advertising communication in order to avoid information asymmetry in the process of consumer choice	Using references to scientific research and innovative components of products when promoting them at exhibitions and during promotional events
8	Consumer communities	Broadcasting scientific values among those most involved in the process of perceiving technological innovations, creating an atmosphere of creativity in the process of consumption	Formation of positive scenarios for the use of technological innovations created with state support using public policy instruments	Promoting the principles of “responsible consumption” within the framework of the environmental agenda	Conducting forums and conferences on the implementation and use of new technological solutions in everyday urban life	Broadcasting scientific values among those most involved in the process of perceiving technological innovations, creating an atmosphere of creativity in the process of consumption

Source: developed by the author.

It should be noted that some temporary public arenas (venues) function within the framework of articulation and presentation of interests of various groups within the framework of different permanent public arenas, which allows us to speak about the possibility of consolidation and coordinated actions in the case of the synchronous nature of their functioning.

Below are examples of interactions between stakeholders within temporary public arenas as elements of permanently and sustainably functioning institutions of this kind in the process of discussing and possibly solving specific social problems associated with the scientization of everyday life in a modern metropolis.

Social problems are identified based on the literature analysis and primary analysis of official documents (including program documents) of government bodies at various levels, topics of news and analytical reports in traditional and new media, scientific and technical reviews and materials of foresight sessions, materials of forums and online discussions, advertising messages and materials of popular culture (book sales and download ratings, the most popular films and TV series, the content of subcultural activity of young people). A more detailed and systematized analysis of the

specified data arrays is contained in Chapter 2. In the context of examining the interaction of actors in public arenas in the context of presenting their interests, we will note the popular public arenas (in fragmentation mode), as well as the period (periods) of problem actualization, its greatest influence on public consciousness and the agenda associated with the influence of technology on people's everyday lives.

1. The problem of Internet security and illegal activity in the sphere of use of personal data (update period: 2003–2005 , 2009–2012 , 2018–2020; public arenas B-1, B-3, G-4, B-5). Combining the interests of the state, society and consumers, this problem is reflected in the public space at each new stage of technological development and its impact on everyday life: from the first cases of fraud via e-mail and messaging services to the implementation of fraudulent schemes during the surge in popularity of electronic payments and the development of social engineering methods using users' personal data (including in relation to children and adolescents).¹⁰⁸

3D modeling and augmented reality technologies into everyday life (the period of actualization: 2008–2009, 2013–2014; public arenas: V-1, G-5, D-7). In the process of dramatization of this problem, critics and supporters of the use of these technologies focus on the dichotomy of “artificial – natural”, emphasizing the negative and positive connotations of the phenomenon associated with the escapist nature of the use of technologies in the conditions of urban everyday life. Separately, we note the rhetoric associated with the substitution of reality with its surrogate and the opposing argument, noting the possibility of presence in places and spaces inaccessible or non-existent for the user.¹⁰⁹

3. High rates of device renewal and the imperatives of fashion and mass consumption (update period: 2009–2012, 2017–2019; public arenas: G-1, D-1, G-3, G-6, V-7). This problem gives rise to the problem of the eternal “race for fashion”, forming a layer of individuals and social groups focused on acquiring “advanced”

¹⁰⁸ See: Evdokimov K.N. Political factors of computer crime in Russia // Information law. 2015. No. 1. Pp. 41-47, Problems of combating cybercrime: materials. II International scientific and practical conference (Moscow, April 26, 2024) / Under the general editorship of O.Yu. M. : Moscow Academy of the Investigative Committee named after A.Ya. Sukharev , 2024. - 146 p.

¹⁰⁹See: Chernyak Yu.G. Digitalization and technologization of public life as a factor in the transformation of the socio-cultural sphere of modern society // Sociological Almanac. 2020. Issue 11. Pp. 176-183.

devices in the first few weeks after their appearance with minimal changes in functionality and consumer properties.

4. The Impact of New Technologies on Young People and the Younger Generation in the Process of Socialization (update period: 2007–2010, 2017–2018; public arenas: B-1, A-3, B-4, A-6, G-6, G-8). The problematizing discourse regarding the “children of the digital era”, the phenomena of desocialization and Internet addiction, as well as research into the impact of computer games on the growth of violence among adolescents, allows us to identify a clear generational gap in the process of introducing and using technological innovations in the everyday activities of city dwellers. The characteristics of the new generation – “Generation Z” – children born in the 2000s–2020s, imply, among other things, the equivalence of the physical and digital worlds (denoted by the capacious word “phygital”: physical + digital), which partially neutralizes the intensity of the “moral panic” of the concerned parental community.¹¹⁰

5. The spread of role models of the “biohacker” and “tech pioneer” - representatives of the vanguard of everyday transformation under the influence of new technologies (the period of updating: 2014-2016, 2019-2022; public arenas: G-1, D-1, G-5, A-7). This problem is associated, first of all, with the distortion of normative scenarios of behavior and the use of innovations in everyday life, as well as with the formation of an aura of “eccentricity” (freaks & geeks) around the consumer sector.¹¹¹

6. A set of problems associated with cyborgization, dehumanization and transhumanism, the transition to a posthuman world of half-humans - half-machines (the period of actualization: 2001-2003, 2010-2013, 2016-2018; public arenas: A-1, B-2, A-8). This problem forms a set of alarming expectations regarding the future, despite

¹¹⁰See: Stillman D., Stillman I. *Generation Z at Work. How to Understand It and Find a Common Language with It* / Translated from English by Yu. Kondukova. Moscow: Mann, Ivanov and Ferber, 2018; Schlegel E.V. *Generation Z: Typical Traits and Value Orientations* // *Bulletin of the Humanitarian University*. 2022. No. 2 (37). P. 122–130

¹¹¹Mikheev, M.I., Digeleva, M.V., Lunina, E.E. *Genesis of the Concept of "Geek" in Contemporary Culture* // *Bulletin of Tver State Technical University. Social Sciences and Humanities*. 2016. No. 1. pp. 76-79, Brushkova, L.A. *Geek Culture as a Youth Super-Subculture of the Digital Society* / L.A. Brushkova, I.A. Vladimirov // *World of Science. Sociology, Philology, Cultural Studies*. - 2019. - T 10. - No. 2. - URL: <https://sfk-mn.ru/PDF/22SCSK219.pdf> (accessed: 02.12.2024).

positive examples of the use of these technologies in the present: for example, in the field of prosthetics and facilitating everyday services for the disabled.¹¹²

7. Discrimination on the basis of innovation/creativity, development of a new round of digital inequality (update period: 2007–2010, 2018–2021; public arenas: A-2, B-2, D-4, B-6, D-8). The problem of digital inequality, which arose on the wave of the spread of the "creative class", has currently become the focus of public policy in the framework of projects for the digitalization of public relations and social practices, which allows us to talk about the deepening of economic inequality based on uneven access to new technologies and their everyday implementation.

8. Dependence on devices, worsening loneliness and mental problems of city dwellers due to the use of new technological solutions (update period: 2011–2016; public arenas: G-1, D-6, B-7). The phenomenon of city dwellers who do not leave their homes for a long time, who are afraid of open spaces and large crowds (the Japanese word “ hikikomori ” is sometimes used to describe them) causes great public concern and raises the question of the social responsibility of developers and distributors of new technologies in the urban environment.¹¹³

9. The problem of replacing communication with real people with interaction with innovative developments based on machine learning and artificial intelligence (update period: 2015–2017, 2018–2022; public arenas: G-2, D-2, V-2). Conversations between elderly people and robots from support services of various services by phone, the use of voice assistants and sexual relations with high-tech humanoid robots, on the one hand, raise questions about the functionality of the Turing Test, and on the other, allow us to look with anxiety or hope beyond the horizon of everyday technological convergence.¹¹⁴

¹¹²Rebrova A.D. Cyborgization of the human body as an implementation of modern innovative technologies // *Polytechnical youth journal*. 2018. No. 2. Pp. 1-7, Denikin A. A. Communications of people with cyborgs in experimental projects of artists and designers // *Humanitarian vector*. 2024. Vol. 19, No. 1. Pp. 73–84. DOI: 10.21209/1996-7853-2024-19-1-73-84

¹¹³Kleinenberg E. *Life solo. New social reality* / Translated from English. Moscow: Alpina non-fiction, 2014.

¹¹⁴Openkov M.Yu., Varakin V.S. Artificial intelligence as an economic category // *Bulletin of the Northern (Arctic) Federal University. Series: Humanitarian and Social Sciences*. 2018. No. 1. Pp . 73-83; Svechnikova I.V., Chernova D.E. Legal regulation of artificial intelligence: scientific and practical issues // *Legal Culture*. 2024. No. 1 (56). Pp. 31-37.

10. Manipulation of user behavior through the design and configuration of consumer properties of high-tech household appliances (update period: 2005–2008, 2015–2019; public arenas: D-2, D-3, B-5). This set of problems is primarily associated with the low “repairability” of modern household appliances, difficulties in adapting them to the needs of a specific user, and is partially solved with the development of Industry 4.0 and 3D printers .

11. Aggravation of the negative impact of the technological environment of a modern metropolis resident on his mental health and well-being (update period: 2014–2017, 2019–2021; public arenas: G-1, D-6, B-7, B-8). Technologization of social practices and everyday interactions, including in the sphere of interaction with government bodies, forms the image of “Big Brother” and hinders effective socialization due to the minimization of live communication and contacts (especially among elderly citizens).¹¹⁵

12. Achieving a balance of interests in the process of developing “smart cities” (update period: 2017–2022; public arenas: G-2, A-5, B-5, B-6, D-6). Public interests and needs of citizens in the process of implementing high-tech solutions designed to make life easier for city residents often fade into the background as a result of interaction between government and business during the implementation of joint projects, so the presentation of civil interests takes on special significance in light of this problem.¹¹⁶

13. Conflict of ownership in the traditional sense and generated user content (update period: 2011–2014, 2017–2019; public arenas: D-3, G-7, B-8). The issue of user agreements and their unilateral revision is problematized in the public space in the format of confrontation between the “creative personality” and impersonal corporations, which ultimately ensures the state’s attention to this problem.

¹¹⁵Mitchell. W. I++ [I plus plus]: man, city, networks / Translated from English. Moscow: Strelka Press, 2012; McQuire S. Media city: media, architecture and urban space / Translated from English by M. Korobochkina. Moscow: Strelka Press, 2014.

¹¹⁶Ratti K., Claudel M. City of Tomorrow: Sensors, Networks, Hackers, and the Future of Urban Life / Translated from English by E. Bondal . Moscow: Gaidar Institute Publishing House, 2017, Zakharova E. City of the Future as an Object of Research / 10 Contemporary Books. Positive Changes. 2022. Vol. 2. No. S2. Pp. 68-73 .

14. Requirements for future ("digital") competencies of an individual living and working in a metropolis (update period: 2014-2015, 2019-2020; public arenas: B-1, G-1, V-3, B-4). Understanding these issues problematizes the readiness for the future of all actors involved in the process of introducing technological innovations into everyday social practices in a modern city, which is expressed in the lists of competencies of the future and the image of a successful "digital native" in urban conditions.

15. Environmental issues of recycling consumer products of innovative technologies and the carbon footprint during their production and use (update period: 2018–2022; public arenas: A-4, D-6, B-8). Increased requirements for the environmental component of technological innovations and state innovation policy in the field of energy saving development in the urban environment make it possible to dramatize this problem area quite successfully in the public space.

16. Development of minimalism and conscious consumption in the field of innovation and information technology in everyday life (update period: 2017–2020; public arenas: G-2, G-6, V-8). This problem ensures the introduction of behavioral models aimed at minimizing or completely abandoning the use of high-tech devices in everyday life in the “digital detox” mode and ultimately ensures the formation of a new consumer sector and area of innovation.

17. Implementation (not always open) of various biometric parameters and tracking tools (update period: 2006–2009, 2013–2014, 2018–2022; public arenas: B-2, B-3, B-5, B-6). This problem, in the context of information asymmetry and the dissemination of unverified and inaccurate information in informal public arenas (rumors and urban legends), is of crucial importance for the success of all initiatives related to ensuring transparency and security of urban life.¹¹⁷

18. Digital twins and the state as a platform (update period: 2010–2011, 2017–2020; public arenas: B-1, B-6, D-6). The penetration of artificial intelligence into decision-making processes at the city level, the use of "big data" problematize issues related to the development of social control of citizens and the prospective implementation of a social rating of a resident of a metropolis, formed on the basis of

a set of transactions, information about which is collected, processed and affects the fate and social status of an individual.

Thus, the consideration of the process of discussion by key actors of social problems related to the implementation of innovations in a modern metropolis in permanent and temporary public arenas allows us to draw a conclusion about periodically emerging topics for public discussion in the mode of optimistic mood and delight from new technologies and related opportunities, partial or complete disappointment from the use of social and everyday innovations, concerns (up to "moral panics" and conspiracy theories) regarding new devices and their elements and a conscious refusal and / or limitation of use from an innovative solution within the framework of individual or collective interaction with other users. All this ultimately allows us to say that the topic of the introduction of technological innovations into everyday urban social practices demonstrates high background and peak activity in the field of public information interaction, largely due to deep penetration into daily routinized operations in the process of implementing the life of a modern metropolis resident.

Based on the analysis undertaken in the first chapter, the following conclusions can be drawn:

1) the identification of “ techno-optimism ” and “ techno-pessimism ” as the main theoretical framework for studying the digitalization of everyday life in a modern metropolis has significant heuristic potential, provided that the widest possible range of research approaches and strategies for studying the everyday life of city residents is used;

2) key socio-cultural innovations in the field of technologization and digitalization of everyday practices appear and subsequently develop at the intersection of individual consumption and collective interaction, which allows us to consider their zones as a source of socio-cultural development trends in the near future;

3) public representation of social problems associated with the introduction of technological innovations into everyday life and the social and domestic sphere of a

modern city allows us to identify the diverse and multidirectional interests of the key actors in this process, which finds expression in the rhetoric of public statements, the characteristics of social interaction and the formation of an individual lifestyle of a modern city dweller.

Chapter 2. Analysis of the socio-cultural specifics of the introduction of technological innovations into the social practices of residents of an industrial metropolis

As the analysis of public arenas and interaction of key actors conducted in section 1.3 showed, the construction of social problems in the sphere of introduction of innovative technologies into everyday life of the population of megacities occurs on public platforms of various levels – from *macro-* (public arenas related to the activities of the state and public structures: from world forums, international publications, websites of global corporations to programs of governments of national states and unions), *meso-* (public arenas related to the activities of business organizations, departmental institutions, academic structures) to *the micro level* (public arenas related to the activities of individual innovators and consumers: opinions of residents of the megacity and their communities expressed in social networks, surveys, requests to various institutions). In this chapter, the research focus is shifted to the study (analysis) of the socio-cultural specifics of the introduction of innovations into social practices of residents of an industrial megacity.

2.1. Sociocultural specificity of the introduction of technological innovations at various levels of activity of the society of a modern metropolis

The meso-level of implementation of innovative information and communication technologies in the everyday life of modern Russian megacities is carried out in the activities of large corporations, academic and educational organizations, subordinate institutions of federal and regional ministries (social sphere, digital development).

The main public arenas at this level are various conferences and forums, hackathons and schools initiated by large corporations (Sber, Rosatom, etc.) and technological innovation complexes (Skolkovo, Innopolis , Koltsovo). Expert opinions, disseminated both on forums and on various Internet platforms and in the media, are used as mechanisms for promoting modern innovative technologies.

The study of the impact of innovative technologies does not lend itself to standard procedures due to the broad scope of the population (almost all socio-demographic groups, regardless of age and area of residence), as well as due to the novelty of the research being conducted and the insufficient structuring of the field of study.

The qualitative and quantitative study is aimed at identifying significant trends in changing public opinion constructs in the field of implementing innovative technologies. The study of text sources (published and interviewed by the author) allows us to identify key topics of discussion of the use of new technologies in the everyday life of the population of a metropolis. Analysis of the attitude of users to new technologies in their everyday life (the tone of statements about the ownership and use of information and communication innovations) as the next step, based on the identified topics and their ranking, guides us to a limited quantitative assessment of the perception of new technologies by different groups of respondents and makes it possible to determine the socio-cultural factors that contribute to and hinder the active implementation of technological innovations in the lives of city residents.

The comprehensive research program includes a meaningful content analysis of materials from a series of interviews with residents of megacities, as well as an analysis of program documents regulating the activities of the Ministry of Digital Development, Communications and Mass Media of the Russian Federation for the entire period of its active large-scale transformation activities and analytical reports of large companies. At the same time, it is necessary to separately note various monitoring of sociological agencies dedicated to the scientization of everyday life of the population of large cities of modern Russia ¹¹⁷.

A study of the opinions and claims-demands of actors at various levels, implemented in the previously described public arenas (mass culture, art, fashion;

¹¹⁷See, for example: Sazonova M.V. Commercialization of the Results of Intellectual Activity within the Framework of the Development of the Concept of Creative Industry "4.0" // *Moscow Journal of Economics*. 2021. No. 1. pp. 464-671, Savchenkov S.A., Aleksandrova D.D. Commercialization of the Results of Intellectual Activity through the Creation of Small Innovative Enterprises in Russian Universities // *EPI*. 2024. No. 3. URL: <https://cyberleninka.ru/article/n/kommertsializatsiya-rezultatov-intellektualnoy-deyatelnosti-cherez-sozdanie-malyh-innovatsionnyh-predpriyatiy-v-rossiyskih> (date of access: 02.12.2024).

traditional media; new media; public policy space; civil associations; science and innovation; advertising and business communications; consumer communities) It is advisable to start with a content analysis of expert opinions published on the Internet and recognized as significant publications.

As *expert interviews*, materials from federal-level media were selected with the expressed opinions of experts in the field of implementation of innovative technologies over the past 10 years, reflecting the current stage of digitalization of social practices of residents of the Russian metropolis.

In total, 50 texts were selected and analyzed during 2011–2022: interviews with leading experts and editorial materials from leading Internet portals in the field of development and implementation of innovative information and communication technologies. The experts included 50 people, the selection criterion was a position in the structures of business corporations, academic institutes of the Russian Academy of Sciences and universities of Russia created to conduct and study the effects of digital transformation. The study covered an important period from the beginning of using modern smartphones and accumulating large user data to the current stage of development of new technologies. The interviews are presented on various Internet portals: electronic journals, registered information and analytical agencies, websites of universities (meso-level platforms for constructing digital transformation as a relevant process of modern Russia).

The software content analysis was conducted in the Lekta software package (developed by the staff of the Lobachevsky State University of Nizhny Novgorod), the factor analysis showed a stable relationship between lexemes in the texts. Based on the results of the factor analysis , 12 factors with the maximum explanatory power were selected .

The factors allow us to draw a conclusion about the strict interrelationship between lexemes and the resulting plots of the manifestation of the digitalization of social practices in the everyday life of the population of megacities in Russia.

Table 4***Factors of content analysis of expert interview texts***

Factor 1	Mobile applications	Factor 7	Smart city
Factor 2	Technology during the pandemic	Factor 8	AI and the Future / Sites
Factor 3	Innovations and innovators	Factor 9	Automation of labor / Modernity
Factor 4	Children, parents and gadgets	Factor 10	Startups
Factor 5	Management / People and Machines	Factor 11	Youth and Science
Factor 6	Robots: International Cooperation and Domestic Industry	Factor 12	Development of IT infrastructure

Modern trends in expert assessments are presented in a certain order, reflecting, in their opinion, the involvement of different actors in the process of technological development (state institutions, corporations and families, individuals). But still experts understand the process of introducing technologies into the life of society from the point of view of the corporations they represent – they exaggerate their exceptional importance for people’s lives, emphasize the institutional nature of implementation, the significance of digitalization for society as a whole, as opposed to the everyday life of an ordinary user.

The first factor to be noted according to the results of the content analysis with the highest loadings is Factor 1 “Mobile applications”, which includes the main word forms reflecting the increasing prevalence of mobile technologies in the sphere of consumption and interaction between the buyer and the seller, be it in virtual or real stores. The factor includes the following lexemes: “applications” (f.n. 0.2774), “client”

(f.n. 0.3894), “product” (f.n. 0.4601), “mobile” (f.n. 0.485), “payment” (f.n. 0.5252), “store” (f.n. 0.7153), “we buy” (f.n. 0.7767).

The range of actions described in the interview materials is extremely broad. These are various aspects of mobile application development: targeted advertising for a specific consumer, scanning price tags of goods in the sales area and paying without cash registers, choosing goods from home, and much more. This practical manifestation of digitalization finds the greatest response from experts due to the fact that it affects, without exception, all smartphone users and at the same time buyers of global retail networks (and this is at least 90% of the residents of the metropolis, with the exception of infants, small children and a few older people who have difficulty using mobile applications), and is also inexpensive to produce, debug, and available to any business representative. The result for the buyer is expanded access to goods and services (from home, without queues at the checkout, taking into account wishes, ordering goods) and the formation of an attractive image of the seller, targeting the offer, increasing customer loyalty. Individualization of the offer, delivery of the offer directly to the user's hands (pocket, smartphone) is still unavailable to residents of the Russian hinterland, who need to come to the moment the goods are delivered to the village store in order to make sure that the required goods are available and accessible. Mobile applications (not only grocery stores) are rapidly conquering the market and forming a culture of consumption without the previously necessary operations - come, see with your own eyes, make sure, choose, pay, deliver.

"In February 2020, Azbuka Vkusa began testing payment for purchases via a mobile app without using cash registers. Customers scan products using their phones and pay directly in the app. At this time, store employees can track the actions of customers" (editorial text Retail.ru, February 2021 "Innovations in Retail 2020: Technologies during the Pandemic").

Cards CEO Alexander Gariaev, June 2015, OSMI Cards company blog).

“With the development of iBeacon technology , previously unexplored opportunities to improve the customer experience in the store are emerging, such as navigation to specific products, displaying product information depending on the

customer's location in the store, etc. The ideal store of the near future must have wireless Internet access, but this alone is not enough for effective communication” (OSMI Cards CEO Alexander Gariaev, June 2019, OSMI Cards blog).

“... Market analytics show that the use of IoT helps businesses reduce costs by an average of 17% and increase revenue growth by 30%. According to the analytical agency ORO, 97% of surveyed companies that have implemented IoT are satisfied with the results, and the average payback period was 1.8 years.” (Mikhail Sukhorukov, owner of TopSeti , January 29, 2024 In the material for Snob)

Factor 2 "Technologies during the pandemic" represents the experience of rapid development of innovative technologies caused by restrictions, in which residents of megacities in Russia existed for almost half a year in 2020. Factor 2 included the following lexemes: "technology" (f.n. -0.8501), "technology" (f.n. -0.832), "covid" (f.n. -0.4191), "implemented" (f.n. -0.3974), "life" (f.n. -0.3356), "everyday" (f.n. -0.2509).

The set of lexemes that most clearly express interdependencies in this factor is quite predictable and most fully includes the word forms of everyday life.

The materials of expert interviews represent a field of opinions both on the set of technologies that have proven themselves in recent years and especially during the pandemic, and on the speed of their development, distribution and acceptance by the population.

“Among other tools for the development and growth of large companies, I would highlight digital modeling, product life cycle analytics, AR/VR technologies and new materials” (Open Innovations forum, October 2019, Vice President, Executive Director of the Advanced Manufacturing Technologies Cluster of the Skolkovo Foundation Alexey Belyakov).

"The IT entrepreneur said that a digital platform is currently under development that will help avoid unauthorized withdrawals from bank cards" (member of the Expert Council for the Development of the Digital Economy under the Federation Council, author of the Digital Valley of Prikamye project Anton Nemkin , May 2021, PolitStart).

"Major global experts are 'in all seriousness' stating that in 2030 the world will see a 'robot uprising' - robotics will become such a part of our lives that there will be no turning back." Cyberneticists are sure that the invasion of robots into everyday life will be as swift and inevitable as the introduction of cellular communications" (Alexey Zabolotnykh, CEO of Academy of Business Solutions, Chairman of the Perm ICT Cluster Association, May 2018, Perm IT Cluster).

Factor 3 "Innovations and Innovators" is composed of texts dedicated to the key actors of modern innovation processes, those who initiate, develop and implement new technologies. Experts' opinions differ, the main burden is placed on the main market players offering innovative approaches and products. This factor is composed of the following lexemes: "innovators" (f.n. -0.8201), "innovations" (f.n. -0.7675), "products" (f.n. -0.5261), "innovatively" (f.n. -0.4367), "market" (f.n. -0.3209).

"These can be any players. Moreover, in Russia, due to the traditional structure of production, there is a very strong bias towards large companies. Small companies play a completely marginal role in the innovation sphere. Although developed market economies have a different structure" (First Vice-Rector of the National Research University Higher School of Economics Leonid Gokhberg , Public lecture, July 2021, Polit.Ru).

" It is impossible not to notice that recently large companies have been trying to expand interaction with other entities of the innovation system (for example, scientific organizations, universities). And this is happening to a large extent because it is the state that is introducing a whole range of economic incentives and new formats, including communication ones" (Elena Gutaruk , head of the Information and Analytical Group of the Institute for Statistical Studies and Economics of Knowledge at the National Research University Higher School of Economics, August 2017, STRF.ru editorial round table "Who needs science besides scientists").

Factor 4 "Children, Parents and Gadgets" includes a discussion of the changes in parent -child relationships that have been brought about by the scientization of everyday life. Smartphones, game consoles, tablets and other gadgets structure the environment and methods of communication, complement reality and displace

personal presence. The factor consists of the following lexemes: "children" (ph.n. -0.6766), "parents" (ph.n. -0.627), "phone" (ph.n. -0.4853), "Internet" (ph.n. -0.2965), "computer" (ph.n. -0.243).

"I think in this sense the gap between rich and poor countries will gradually narrow. I live in New York, and if you go to a poor, disadvantaged area, you will see that even children and teenagers use smartphones and surf the Internet" (Dr. Michio Kaku , a famous American theoretical physicist of Japanese origin and an active popularizer of science, June 2019, RIA Novosti, Interview, "Immortality awaits us." A futurologist on how technology will change life).

Factor 5 "Management / People and Machines" is ambivalent and indicates two types of interrelationships between lexemes in texts: people use new technology as a result of innovation, while government bodies can provide or restrict population access to new technologies. This occurs through government decisions (for example, the establishment of the Ministry of Digital Development), with the help of educational and economic measures. The factor is formed by the lexemes: "machines" (f.n. -0.2732), "people" (f.n. -0.2559), "access" (f.n. 0.227), "management" (f.n. 0.2883), "state" (f.n. 0.3428), "education" (f.n. 0.3739), "economy" (0.4213), "digital" (f.n. 0.4318).

"The digital transformation of the education system, first of all, involves equipping schools and higher education institutions with modern digital technologies, which are designed to increase the accessibility of education and training materials for everyone" (material from the editorial board of CENTER 2M LLC - a Russian information operator, developer of platform solutions in the field of M2M and the Industrial Internet of Things, July 2021).

"Not only in Russia, but also in other countries, the state has begun to use population surveillance technologies, supposedly for the sake of greater security for people and society as a whole. Researchers, especially from the European Union, are sounding the alarm about this: they fear that even after the end of the pandemic, the state will not abandon tried and tested control technologies" (sociologists Lilia Zemnukhova and Nikolai Rudenko, authors of the WrongTech Telegram channel ,

candidates of sociological sciences and employees of the STS Center, October 2020, interview on the KoronaFOM project website).

The state gains a significant advantage over all other actors in exercising control, and the population of large cities will be the first to feel these innovations in their lives.

Factor 6 "Robots: International Cooperation and Domestic Industry" is devoted to the highly topical issue of introducing robotic systems and the threat of replacing humans with non-human social actors. An appeal to domestic manufacturers emphasizes the experts' concern about the country's lag in the development of modern robots, mainly in civilian use, a comparison with China's experience and forecasts for the time and scale of innovation development in this area. Factor 6 consists of: "domestic" (f.n. 0.2522), "Russia" (f.n. 0.373), "China" (f.n. 0.3783), "year" (f.n. 3953), "world" (f.n. 0.4072), "robot" (f.n. 0.5777).

"Sales of industrial robots in Russia in 2016 decreased by 40% compared to 2015. Then, 550 robots were sold, in 2016 - only 216. Market experts explain the drop in demand by the fact that domestic automakers have solved their problems with robotization and stopped purchasing industrial robots. China has taken first place in the world in robot consumption" (Alexey Zabolotnykh, CEO of Academy of Business Solutions LLC, Chairman of the Perm ICT Cluster Association, May 2017, Perm IT Cluster).

"In the near future, an explosive growth in the number of industrial robots in Russia is predicted, since the government understands that in 10-15 years, mass robotization technologies will enter everyday life. We tried to analyze why this situation has arisen, and found out that in developed countries - the USA, Japan, Germany, several provinces of China, South Korea - there are state programs to stimulate this industry" (Alexey Zabolotnykh, CEO of Academy of Business Solutions LLC, Chairman of the Perm ICT Cluster Association, May 2017, Perm IT Cluster).

"Another rationale for using robots is PR. The logic behind this was clearly demonstrated during the pandemic. For example, in China, drones were launched to bring food and medicine to hospitals.

There, after the first outbreak of the disease, robots treated people at the stadium, etc. As the researchers note, these were largely PR strategies - there were few robots there” (sociologists Lilia Zemnukhova and Nikolai Rudenko, authors of the WrongTech Telegram channel , candidates of sociological sciences and employees of the STS Center, October 2021, interview on the website of the CoronaFOM project).

Factor 7 "Smart city" is composed of quotations using lexemes characterizing the key components of scientization of urban space. Factor 7 consists of the lexemes: "smart" (ph.n. -0.8073), "city" (ph.n. -0.8066), "opinion" (ph.n. -0.34324).

"The equipment will independently make adjustments to its own operations as requirements change. Finally, the process of making management decisions will also be automated. Receiving data on production activities, the "smart" system will issue a "recipe" for further actions, and will carry it out itself."

“For example, it’s difficult to explain to many people the advantage of a smart refrigerator that will check the freshness of food itself and order new food if necessary.”

“Ultimately, what we see here is not the dominance of any one technology, but their joint work to create the most comfortable professional and living space for a person.”

"And we are not talking about some fancy and expensive systems like a "smart" home - even a regular multicooker with Wi-Fi control, which many people have, is a striking example of household digitalization. Many people often use another digital system - an alarm system.

A special sensor monitors whether there are strangers in the apartment, and if they are detected, it signals the duty officer at the control panel.”

Factor 8 "Artificial Intelligence and the Future / Website" has both negative and positive loadings. The modulus of the number is significant, but the ambivalence indicates two types of connection in the same texts.

Almost all experts associate the future with the development of artificial intelligence. However, its current development does not yet bring the desired fruits of liberating man from routine. Factor 8 includes the following lexemes: "site" (f.n. -

0.1563), "relevant" (f.n. 0.2006), "activates" (f.n. 0.2295), "artificial" (f.n. 0.4572), "future" (f.n. 0.5331), "nearest" (f.n. 0.6198).

"The fact is that all existing models of artificial intelligence are severely limited in their capabilities. Our readers may have encountered them, for example, when using so-called "smart speakers", car navigators, and those same Internet search engines. These models are strictly limited by the list of functions for which they were actually created. In scientific terminology, such models are called weak artificial intelligence."

"Of the nearest scenarios of our everyday life, I will also name the technologies of augmented virtual reality - personal avatars, bots or assistants with artificial intelligence. They can be visualized in their own likeness or the program can be embedded in any other image, of your choice."

"If even now weak artificial intelligence takes an active part in the processes of a high-tech enterprise, assisting personnel to the best of its ability, then strong artificial intelligence will be able to become a full-fledged partner and companion for workers of a wide variety of specialties."

The semantic load associated with the terminology of information presentation on the Internet speaks of its widespread use and the gradual spread of the exchange of personal information through individual pages.

Factor 9 "Labor automation/Modernity" is not divided into two, as it might seem from the double name, but, on the contrary, includes lexemes that complement the meaning of the study of the current and forecasted state of labor relations and the organization of the workspace. The composition of this factor: "modern" (f.n. - 0.2645), "work" (f.n. 0.207), "automation" (f.n. 0.2435), "retail" (f.n. 0.2716), "analysis" (f.n. 0.4551), "virtual" (f.n. 0.5048), "personnel" (f.n. 0.5129).

"This is not only the registration of a tourist and his virtual girlfriend in the room as completely equal guests, but also a whole set of additional services. For example, a guest can go to a specially equipped point in the hotel, equipped with a QR code. Take a selfie (self-portrait). After that, the system will automatically add an image of his virtual companion to the photo."

“If staff are not prepared to work with CRM, loyalty tracking, or prices/product range displayed in the app, then the value of the app to the client is immediately reduced due to loss of trust.”

"It is important to note that its key attributes are not the blind replacement of enterprise personnel with robots, but the increasing role of a person as a creator and maker, located at the center of the enterprise's intellectual potential. First of all, among such technologies I can name strong artificial intelligence. This term refers to such artificial intelligence that can be aware of itself, learn independently, and solve various problems with a high level of uncertainty."

Factor 10 "Startups" is composed of lexemes demonstrating a fairly narrow but very capacious topic of startups, their support in the Skolkovo cluster and the participation of banks in implementation. The factor includes the lexemes: "startup" (ph.n. -0.6714), "Skolkovo" (ph.n. -0.6667), "bank" (-0.3908).

“Globally, digitalization is a concept of economic activity based on digital technologies that are introduced into various spheres of life and production.”

"The next task is business incubators. Today, there are business incubators in the region, but there is no stunning flow of startups. It is difficult to say how effective they are. The next stage of development is the creation of an IT technology technopark. This is a serious infrastructure task that requires large investments from both the state and large investors. A technopark is a serious prototyping center where innovations are born and the first product samples are manufactured ."

Factor 11 "Youth and Science" includes semantic elements of the general theme of the development of modern domestic science and the attraction of young people to academic structures. The lexemes included in this factor: "science" (f.n. -0.6539), "scientists" (f.n. -0.4754), "youth" (f.n. -0.3201), "society" (f.n. -0.308), "academy" (-0.2788), "result" (f.n. -0.2576).

"Isn't that why our scientists sometimes work on equipment that is half a century old (they write about this themselves, including in the "Vestnik RAS")? If businesses were more active in financing applied research, getting a chance to earn money later

on discoveries and innovations, then scientists would also have the opportunity to think more about science, without "worrying" about how to feed their families tomorrow."

"In Russia, I feel certain waves: if parents are interested people, then their children will most likely receive a kind of "curiosity vaccination", which at a certain age will activate them to attend popular science lectures and read popular science magazines. In order for Russian science to develop and experience to be passed on to young specialists, not only new discoveries and inventions are needed, but also propaganda, and the higher the quality and interest it has, the greater the chances of raising a successful scientist.

This probably leads to the fact that this romanticism then collides with the harsh reality outside the walls of their enterprises and laboratories. Many of them simply emigrate, leave the country, leave the country. And there they become real practical tech entrepreneurs ."

Factor 12 "Development of IT infrastructure" collects stories about the management of this aspect of innovation, the inclusion of business in such projects and the personal interest of innovators in IT projects around the topic of ICT development in modern Russia. The lexemes of this factor are: " IT " (ph.n. -0.6915), "infrastructure" (-0.3717), "manage" (ph.n. -0.3486), "develop" (ph.n. -0.3347), "business" (ph.n. -0.2765), "personal" (-0.2144).

"For example, if the sales management unit is being automated, it is clear that the customer in this case is the person who will use the results of the work and benefit from the results of the project - the commercial or general director." The optimal solution is the joint creative work of the business and the IT director, but it does not always work out due to conflicts of interest and lack of competence."

Traditional systems make up the bulk of a company's IT budget, but innovative technologies will play a key role in further cost reduction. The source of growth for companies is the "third platform" technologies, the key components of which are mobile computing, cloud services, big data analytics and social networks. Therefore, in developed markets, IT directors are members of the boards of directors of enterprises and actively influence the company's business processes. In Russia, this

trend is just beginning. At the same time, the business owner must clearly understand that without personal control over the project, he risks getting "automation for the sake of automation" instead of the desired effect and visible improvements.

The use of software content analysis allows for a more substantiated, based on factor analysis and the identification of a mathematically described relationship between lexemes in texts, operationalization of the topic of digitalization of social practices for further research.

In their interviews, experts raised the most important topics, and based on the results of the study, we can summarize these 12 topics as the main areas of study of regulatory documents and a quasi-expert survey of ordinary residents of the metropolis and innovators - advanced users from among young specialists in areas related to the development and implementation of new technologies.

"Sometimes it's really amazing. But do these people think about the fact that their entire life is connected with information technology ? Do they think about what will happen to them if IT technologies disappear ? Of course, this will not happen, but still, let's assume. In most cases, people will have to retrain. Some will be able to, and some will be left with nothing. As a rule, people simply do not realize how modern technology affects them."

Experts represent the opinion of organizational structures directly related to the development and implementation of technologies, as well as the study of their impact on the lives of users. The result of the content analysis allows us to determine the priorities in the expressed expert opinion - as a rule, futurologists evaluate global trends and talk about what residents of modern megacities have already encountered and what they will have to master in the near future. It is the ranking of factors with the identified factor load that suggests the significance of key topics for society in the understanding of experts - factors can be combined for better understanding and ease of operation in micro-stories : the topic of breakthrough innovations that will definitely affect everyone's life (factors 1 and 2), people's interaction with these technologies, including their impact on children (factors 3-5), specific aspects of new technologies: smart city, robots, artificial intelligence (factors 6-9) and directions for the development of the

infrastructure of the future for the further development of new technologies: youth involvement, startup development and expansion of the IT infrastructure (factors 10-12).

At the same time, the everyday life of users of these technologies can be very far from the topics presented, and residents of the metropolis can present their ranking for these areas within the framework of interviews conducted with them.

2.2. Positive and negative effects of the introduction of innovative technologies into social practices at the macrosocial and microsocial levels in expert assessments

The development and implementation of science-intensive innovations is becoming increasingly widespread in modern megacities in Russia and around the world. The global nature of digitalization gives rise to global trends: mobile technologies of transcorporations are becoming part of the daily life of residents of any country. At the same time, governments are trying to take control of the spread of innovative technologies and manage the process of their implementation - concepts and strategies for digitalization are being formed, supported by national programs and resource allocation.

At the global level, the most accessible information can be found in analytical reports on the development of the high-tech market, which are presented annually to the general public by large corporations. Reviews of these reports on various areas of innovation are becoming popular: in medicine, education, the food industry or individual consumption.

In the Russian space, it is primarily interesting to conduct an analysis of the program documents of the Government of the Russian Federation in the field of development of innovative technologies, analytical reports of large corporations (Yandex, Sber) and comprehensive monitoring of academic structures and leading universities.

The Strategy for the Development of the Information Society in the Russian Federation (dated February 7, 2008, No. Pr-212, with further updating of the tasks in the Decree of the President of the Russian Federation dated May 9, 2017, No. 203) (hereinafter referred to as the Strategy) brings the construct of "information society" from academic concepts to the legal space of the legislation of the Russian Federation. According to the definition, "the information society is characterized by a high level of development of information and telecommunication technologies and their intensive use by citizens, businesses and government bodies ¹¹⁸. "

The Strategy proposes improving the quality of life of citizens through the use of information and telecommunication technologies (ICT) as the goal of developing the information society in Russia.

The primary tasks for achieving this goal, according to the Strategy developers, are the development of modern innovative ICT and their implementation in various areas of society: education, medical care, social protection.

The Russian Government sees its role in the formation of an effective information and telecommunications infrastructure and the improvement of the system of guarantees of constitutional human rights in the information sphere.

Among the possible risks of the development of the information society in Russia may be a further deepening of inequality, which in recent scientific publications has been called digital inequality ¹¹⁹, the loss of individual elements of the culture of the multinational people of Russia, as well as the possibility of using the potential of the information society in the Russian Federation against the national interests of the country.

¹¹⁸ Strategy for the Development of the Information Society in the Russian Federation of February 7, 2008 No. Pr-212 https://digital.gov.ru/uploaded/files/strategiya_razvitiya_inf_obschestva_1.pdf (date of access: 09/21/2024), Decree of the President of the Russian Federation of 05/09/2017 N 203 "On the Strategy ..." Strategy for the Development of the Information Society in the Russian Federation for 2017 - 2030 URL : <http://static.kremlin.ru/media/acts/files/0001201705100002.pdf> (date of access: 09/21/2024) .

¹¹⁹ See: Global Risks of the Digital Age and Images of the Future: Proceedings of the IV International Scientific Conference Gubkin Humanitarian Readings (Moscow, April 4-5, 2019). Part 2. // Responsible. editors: Smirnova O.M. Eds.: Balycheva M.B., Volkova L.V., Ryabchun N.P. - M: Publishing Center of the Gubkin Russian State University of Oil and Gas (National Research University), 2019. https://www.gubkin.ru/konferentsii-i-vystavki/gumanitarnye-gubkinskie-chteniya/2019/mat_ch_2_2019.pdf (accessed: 21.09.2024).

An important aspect of the Strategy is the system of principles for its implementation: ensuring freedom and equality of access to information and knowledge, support for domestic producers in the ICT sector, partnership between the state, business and civil society ¹²⁰.

The measures taken by government bodies are systematized in Section 5, “ Main Directions for the Implementation of the Strategy , ” among which broadband Internet access systems have already been implemented in many regions of Russia, digital television and radio broadcasting, the creation of a system of multifunctional centers with unified user databases, distance education and medical care, regulation of the provision of cellular communications in the country, and the creation of regional information systems.

Separately, it is necessary to mention the national projects of the Russian Federation in the sphere of development of the national economy based on the information society.

The preamble of the National Program “Digital Economy of the Russian Federation” indicates that it was created “as part of the implementation of the Decrees of the President of the Russian Federation of May 7, 2018 No. 204 “On the national goals and strategic objectives of the development of the Russian Federation for the period up to 2024” and from 21.07.2020 No. 474 "On the national development goals of the Russian Federation for the period up to 2030" , including with the aim of solving the problem of ensuring the accelerated implementation of digital technologies in the economy and social sphere and approved by the minutes of the meeting of the Presidium of the Council under the President of the Russian Federation for Strategic Development and National Projects dated June 4, 2019 No. 7" ¹²¹.

¹²⁰Strategy for the Development of the Information Society in the Russian Federation dated February 7, 2008 No. Pr-212 https://digital.gov.ru/uploaded/files/strategiya_razvitiya_inf_obschestva_1.pdf (date of access: 21.09.2024), Decree of the President of the Russian Federation of 09.05.2017 N 203 "On the Strategy ..." Strategy for the Development of the Information Society in the Russian Federation for 2017 - 2030 URL : <http://static.kremlin.ru/media/acts/files/0001201705100002.pdf> (date of access: 21.09.2024).

¹²¹ See: National Program "Digital Economy of the Russian Federation" / Materials from the official website of the Ministry of Digital Development, Communications and Mass Media <https://digital.gov.ru/ru/activity/directions/858/> (date accessed: 09/21/2024).

The given development directions indicate the importance of these spheres of social activity and developing technologies, and also become a reference point for developers and users of innovations. The author's study of materials from published expert interviews confirms the awareness and interest of respondents in the areas of development and implementation of digital services. The scientization of everyday life in Russian megalopolises is currently largely formed within the framework of the implementation of the aforementioned federal programs.

Smart City systems are being implemented within the framework of the implementation of the presented national project and determine the development vectors of Russian megacities in the near future as an infrastructure of high-tech technologies ¹²².

Regional projects for the development of smart cities in Russia affect almost all elements of the infrastructure of the metropolis: housing and communal services (electricity, heat, gas and water supply; housing stock management), collection and disposal of solid municipal waste, environmental monitoring and protection, equipping streets and public spaces, maintaining public safety.

The results of the author's study (a series of in-depth interviews with innovators and advanced users of new scientific technologies in Moscow, St. Petersburg and Nizhny Novgorod , 2021-2023) revealed a significant difference in opinions regarding the social effects of digitalization of urban space. As a rule, respondents say that the elements of a smart city are practically invisible to the uninitiated layman, and only the need to use ICT in various places of the urban space and visits to the MFC and the State Services website remind us of the availability of information, its ease of use and time savings.

Such innovations are assessed by informants as timely and necessary, significantly facilitating the life of a resident of a modern Russian megalopolis. At the same time, the remark that ICT in the life of a smart city is not noticeable in

¹²² See: National Program "Digital Economy of the Russian Federation" / Materials from the official website of the Ministry of Digital Development, Communications and Mass Media <https://digital.gov.ru/ru/activity/directions/858/> (date accessed: 09/21/2024).

everyday life, in our opinion, emphasizes their seamless implementation and the relevance of this process for many millions of citizens not only in the capital, but also in provincial megalopolises.

Trends in the development of smart cities and a comparison of the results of technology implementation are presented in the works of Russian authors and summarized in Appendices A-B. The most famous Russian examples of the implementation of smart city technologies include Moscow, Innopolis (the first city in the Russian Federation built from scratch and immediately according to the smart city development program); using smart city elements - St. Petersburg and Kazan, where university campuses are equipped with the appropriate information technologies.

The state's priorities in the area of ICT development are obvious and reflected in program documents and statements by key federal-level actors.

One of the important processes of recent times is the training of personnel for the digital economy and the call of the Ministry of Digital Development of Russia to organize clusters in provincial megacities of Russia to train specialists in the field of ICT (“Russia lacks a million specialists in the field of digital technologies”).¹²³

Government decisions in the area of development of the information society in the country must additionally be considered through the prism of analytical reports of research centers (independent and official academic structures) and the activities of representatives of large businesses in this area.

An analysis of the spread of innovative technologies in various spheres of social activity will allow us to study the opportunities provided to users in medicine, education, transport, the food and cosmetics industries, the tourism and leisure sectors in general.

One of the fastest growing areas of implementation of innovative technologies is the development and application of IT products based on artificial intelligence. A

¹²³ Chernyshenko D.N. Russia lacks a million specialists in the field of digital technologies / Materials from the official website of the Ministry of Digital Development, Communications and Mass Media <https://digital.gov.ru/ru/events/41078/> (date of access: 09/23/2024).

review of analytical materials in the field of application of artificial intelligence in medicine presents new solutions available to patients in Russia and abroad ¹²⁴.

Machine learning and natural language processing-based patient management systems are increasingly being used in healthcare. The review uses reports from various corporations on the implementation of AI in medicine.

The most important results include an increase in the number of AI-based healthcare implementations by more than 80% over the past 5 years, an increase in investment in these projects, a greater number of AI in medicine startups, and a huge interest from industry representatives – not only top management but also lower-level employees – in using AI-based medical technologies ¹²⁵.

The annual almanacs "Artificial Intelligence" of the NTI platform (Index 2019, Index 2020), as well as the NTI report "Report on the results of the activities of the infrastructure centers of the National Technology Initiative in 2023" ¹²⁶ and the Stanford University report "Artificial Intelligence Index Report 2024" ¹²⁷ shows the current state of the industry producing solutions using AI in Russia and in the world.

The authors of the almanac name the following as the most significant benchmarks for the development of the AI industry in Russia: expert and recommendation systems in management, AI technologies in urban and agricultural sectors (smart home, smart city, smart farm), software and hardware for strong AI, speech recognition and synthesis, computer vision, robotics ¹²⁸. The authors note the insufficient growth of academic structures and educational programs aimed at developing IT solutions based on AI.

In 2020, decisions were made at the government level in Russia on the legislative registration of artificial intelligence technologies and their application in various spheres of social life and in the everyday life of the country's citizens in particular.

¹²⁴See the overview of analytical reports on artificial intelligence for medicine . URL : <https://webiomed.ai/blog/obzor-analiticheskikh-otchetov-ob-iskusstvennom-intellekte-dlia-medsiny/> (date of access : 23.09.2024) .

¹²⁵Ibid.

¹²⁶ Report on the results of the activities of the infrastructure centers of the National Technology Initiative in 2023, URL: <https://nti2035.ru/upload/Дока%20о%20ресвестих%20децции%20продвижение%20НТИ%20продвижение%20НТИ%20за%202023%20г....pdf> (date of access: 06.12.2024)

¹²⁷ Artificial Intelligence Index Report 2024, URL: <https://aiindex.stanford.edu/> (date accesses : 06.12.2024)

¹²⁸ Almanac Artificial Intelligence Index 2020 URL: https://aireport.ru/ai_index_2020 (date of access: 09/21/2024).

The National Strategy for the Development of Artificial Intelligence until 2030 has been approved ¹²⁹, the Concept for the Development of Artificial Intelligence and Robotics in the Russian Federation has been put into effect, and the Federal Project “Artificial Intelligence” has been launched. ¹³⁰.

The Center for Expertise in the Implementation of the Federal Project "Artificial Intelligence" provides the apparatus of the Government of the Russian Federation with analytical information on the state of the artificial intelligence industry in Russia and abroad.

The quarterly "Digest of events in the field of artificial intelligence in the world" ¹³¹ presents the latest AI solutions from the largest corporations in different countries of the world. The key topics of this issue were the increasing increase in neural network models, the development of multimodal AI technologies (working with several types of sensory information), as well as a significant reduction in the amount of data in training a neural network - such methods are becoming the most promising in the use of artificial intelligence. Thus, in particular, one of the innovations in Russia is the appearance of an AI consultant on the State Services portal, the practice of insuring damage from the use of AI is being introduced and liability for its use is being regulated, ¹³² as well as a number of other innovations.

The development of technologies using artificial intelligence is closest to the everyday life of people in the areas of education, healthcare, and social services.

¹²⁹Decree of the President of the Russian Federation of October 10, 2019 N 490 "On the Development of Artificial Intelligence in the Russian Federation" (as amended by Decree of the President of the Russian Federation of February 15, 2024 N 124). URL: <http://www.kremlin.ru/acts/bank/44731> (date of access: September 24, 2024).

¹³⁰ See: Chernyshenko D.N. Russia lacks a million specialists in the field of digital technologies / Materials from the official website of the Ministry of Digital Development, Communications and Mass Media <https://digital.gov.ru/ru/events/41078> (date of access: 09/21/2024).

¹³¹Digest of events in the field of artificial intelligence in the world (Q1 2021) / Materials of the Analytical Center under the Government of the Russian Federation. URL: https://ac.gov.ru/uploads/5-Presentations/AI_1Q21.pdf (date of access: 09/24/2024), Digest of news in the field of artificial intelligence for the first half of 2024. URL : <https://vc.ru/services/1344832-daidzhest-novostei-v-sfere-iskusstvennogo-intellekta-za-pervoe-polugodie-2024-g> (date of access: 12/06/2024).

¹³² Federal Law of July 31, 2020 N 258-FZ "On experimental legal regimes in the field of digital innovations in the Russian Federation" (as amended on July 31, 2024) URL : <https://base.garant.ru/74451176/> (date of access: December 6, 2024).

Educational innovations have become the focus of research for many government centers and business structures in connection with the pandemic and the need to use distance technologies.

A team of HSE researchers presents an analysis of grassroots innovations in education, based on materials from submitted applications and projects won in various grant competitions to improve the education system in Russia ¹³³. The authors note the division of project managers into external actors in relation to the education system and internal actors. Representatives of the system are ready to bring something new to its management, but act within the framework of established practices, while external actors are ready to introduce new forms of relations and develop educational content that is different from the existing one. The range of new practices introduced into everyday activities is constantly expanding, for example, scientists from St. Petersburg State University announced the world's first AI counter for indicating illegal mining and combating it ¹³⁴, and in May 2024 they trained a neural network to identify shortcomings in a standard computer test to differentiate human or machine style in using systems.

The field of big data analysis represents a huge field for development and innovation, as it provides the researcher and user with a tool and a data array at the same time.

Data in modern human life consists of three main sources: data on the life of society, collected and stored in the archives of numerous institutions (civil registry offices, tax inspectorates, MFCs, etc.); data from various sensor systems (sensors in the housing and communal services system, the medical field, industrial systems for collecting technological data), and arrays of information produced by humans on the Internet.

¹³³ Actors of educational innovations: values and motivation / T. E. Khavenson , O. D. Koroleva, A. A. Lukina; National Research University Higher School of Economics, Institute of Education. - M.: HSE University, 2018. - 24 p. <https://ioe.hse.ru/pubs/share/direct/409673176.pdf> (accessed on 25.09.2024); Landscape of educational innovations: content and structure / D. O. Koroleva, T. E. Khavenson , A. A. Andreeva; National Research University Higher School of Economics, Institute of Education. - M.: HSE University, 2017. - 20 p. <https://ioe.hse.ru/pubs/share/direct/409672733.pdf> (accessed on 25.09.2024).

¹³⁴ See: SPbU news announcement <https://spbu.ru/news-events/novosti/spbgu-predstavil-pervyy-v-mire-ii-schetchik-dlya-borby-s-nelegalnym-mayningom>, <https://spbu.ru/news-events/novosti/uchenye-spbgu-nauchili-neyroset-vyyavlyat-vozmozhnye-uyazvymosti-v-tekstovykh...>

The use of these data inevitably leads to the digitalization of social practices at the most basic level – from the now routine operations of collecting or posting information on the global network to the use of smart home systems in everyday life.

Scientific innovations continue to be the subject of research by Russian scientists.

Digital transformation in various areas of management is considered in terms of data-centricity and possibilities/limitations of data use ¹³⁵. Urban economy and the need to implement digital innovations are analyzed in terms of designing such solutions, their integration into the program of digitalization of the economy, proposals of global corporations in smart city systems ¹³⁶.

The introduction of scientific technologies into various areas of the economy and management concerns the analysis of public administration in general, the development of banking systems within the framework of digitalization, the construction of modern Russian "silicon valleys" for the development of breakthrough technologies ¹³⁷.

Robotics in modern Russia is one of the fastest growing areas of technological innovation. And if in the early 2010s only the interest of manufacturers and the population in robotic systems was recorded, then already in the mid-2010s the

¹³⁵ See: Akatkin Yu.M., Yasinovskaya E.D. Digital transformation of public administration. Data-centricity and semantic interoperability /Preprint/, M.: DPK Press, 2019. - 724 p.; JSC "National Research Institute of Technology and Communications" Smart Cities Indicators NIITS, Moscow, 2017 [Electronic resource] <https://docplayer.ru/68717217-2017-indikatory-umnyh-gorodov-niits-2017.html> (date of access: 09/25/2024); Afanasyev K.S., Stepanova E.S. Possibilities and limitations of using big data analysis to optimize city management processes, p.135, Digital transformation of public administration: proc. Int. sci.-pract. conf. September 25-27, 2019 / edited by prof. S.N. Bolshakov. - St. Petersburg: Leningrad State University named after A.S. Pushkin, 2020. - 180 p. [Electronic resource] https://e.mail.ru/attach/16126378111521933613/0%3B3/?folder-id=0&x-email=anastasia_-08%40bk.ru (accessed: 09/25/2024), Michurin N.S. Digital transformation of public administration: definition, processes and performance indicators. Scientific aspect. 2024. Vol. 18. No. 5. Pp. 2504-2512.

¹³⁶Review of the analytical report on Deep Tech (Skolkovo Foundation) . URL : <https://sk.ru/news/fond-skolkovo-predstavil-analiticheskiy-otchet-na-temu-deeptech/> (date of access : 25.09.2024) .

¹³⁷ Voronina L.A., Pleshakova M.V. Cluster model of integration of the modern banking system // Financial Analytics: Problems and Solutions. 2014. No. 21. Pp. 41-53; Afinogenova I.N., Vatutina E.V. "Silicon Valley - a zone of high technologies", Voronezh Institute of Economics and Law / Territory of Science. 2015. No. 4 [Electronic resource] <https://cyberleninka.ru/article/n/kremnievaya-dolina-zona-vysokih-tehnologiy> (date of access: 09/25/2024).; Dmitrieva O.V. Strategic analysis of the introduction of digital technologies in city management processes // Management Consulting. 2020 No. 3 p. 121-128 [Electronic resource] <https://cyberleninka.ru/article/n/strategicheskiy-analiz-vedreniya-tsifrovyyh-tehnologiy-v-protsessy-upravleniya-gorodom> (date of access: 09/25/2024).; Kuzmina A.S., Lipetskaya M.S., Expert and analytical report, Center for Strategic Research "North-West", Implementation of smart city technologies, Moscow, 2018 [Electronic resource] <http://www.csr-nw.ru/files/publications/report-smart-cities-web.pdf> (date of access: 09/25/2024).

Skolkovo Institute began to hold annual international conferences Skolkovo Robotics and various exhibitions of social and educational robots.

The rapid spread of personal assistants, as well as the widespread competitive development of children's robotics clubs in schools and other centers, shows another direction in the development of the scientization of social practices in the big city.

Based on the results of the author's study, it is worth noting the not very significant, but significant attention of respondents to personal voice assistant systems in the situation of remote work at home and simultaneous communication with children studying at home. The artificial intelligence system, combined with robotic hardware or without them, is conquering the home space.

In Russian sociology there are not many works devoted to social robotics, among which the most important should be mentioned: A.A. Davydov “Social Robotics and systems sociology” (see: https://www.isras.ru/Davydov_Robotics.html?ysclid=m4zonexs1739762282); D.V. Galkin “Fundamentals of social robotics in the context of social and humanitarian research” // Bulletin of Omsk University. 2014. No. 2. Pp. 167-177) . These and other authors point out that work in the field of technological innovations, including robotics, is impossible without the formation of a new layer of users - advanced, tracking industry innovations and ready to formulate technical specifications for developers of IT products for their improvement ¹³⁸.

K. Fursov and T. Turner in their study of user-innovators in Russia determine the high readiness and significant share of such people in Russian society ¹³⁹. Based on the analysis of a large volume of interviews (more than 1500), they form the idea that "the percentage of end users implementing innovations and their readiness to share ideas is much higher compared to Western countries and has its roots in social activity that spread during the Soviet era."

¹³⁸ See: Actors of educational innovations: values and motivation / T. E. Khavenson , O. D. Koroleva, A. A. Lukina; National Research University Higher School of Economics, Institute of Education. - M.: National Research University Higher School of Economics , 2018. - 24 p. (Facts of Education No. 6 (21)).

¹³⁹ Fursov K., Thurner TW Make it work! – a study of user innovation in Russia//Science and Public Policy, Volume 44, Issue 3, June 2017, Pages 392–402, <https://doi.org/10.1093/scipol/scw072> (date accessed : 09/25/2024).

Scientists have identified two groups of innovators: urban, well-educated and financially secure men (usually from large cities) – their behavior confirms the conclusion about the legacy of the Soviet tradition of rationalizers, and a group of residents of small towns who introduce innovations “out of necessity”¹⁴⁰.

The authors suggest that these innovative users are "reluctant to commercialize their innovations and prefer to keep them for themselves or share them with colleagues on a voluntary basis," leaving a huge source of ideas and commercial opportunities untapped¹⁴¹.

The authors of an analytical report from the National Research University Higher School of Economics on grassroots innovations in education believe that they arise as a response to a change in the environment or the emergence of a new need. The project "Monitoring the Innovative Behavior of the Population: Involvement of the Population in Innovative Practices" has been implemented by the National Research University Higher School of Economics since 1995 regularly and since 2009 according to an updated cyclical scheme. The purpose of monitoring is to analyze trends in the population's perception of innovative technologies and the implementation of innovative practices in households, as well as to form competencies for innovation¹⁴².

The most important area of studying new practices was a survey of the population about the digital practices of Russians during the period of self-isolation - the development of new formats for performing ordinary everyday tasks.

V. Polyakova, A. Nesterenko and K. Fursov in the analytical report "Digital practices of Russians during self-isolation"¹⁴³ show the key results of a survey of more than 3,000 social media users. About three quarters of respondents used digital tools more often during self-isolation, about half installed additional applications and programs, more than a third mastered new skills and almost half still plan to do so. At

¹⁴⁰ Ibid.

¹⁴¹ Ibid. P.397 .

¹⁴² Monitoring the innovative behavior of the population: population involvement in innovative practices. URL: <https://www.hse.ru/monitoring/innpeople/> (date of access: 25.09.2024).

¹⁴³ See: Polyakova V., Nesterenko A., Fursov K. Digital practices of Russians during self-isolation. URL: <https://issek.hse.ru/news/438496284.html> (date accessed: 09/25/2024).

the same time, the researchers note that not a single offline practice has become completely digital (possibly due to the underdevelopment of interfaces).

The most active use of Internet resources is associated, in their opinion, with searching for information, working with the government services portal, purchasing goods and services online, and consuming entertainment content ¹⁴⁴.

The next level of resource use – we would call it “moderate digitalization” following the authors of the material – is specific to such practices as “appealing to authorities and voting, games, educational activity, receiving financial and insurance services, renting vehicles and communications ¹⁴⁵.” In other areas of everyday life, digitalization has not acquired a total character.

The presented data clearly characterize the main trends in the digitalization of everyday practices of the metropolis population during the pandemic. Reduction of direct contacts, fear of live communication and the use of public transport and public spaces lead to the accelerated introduction of technologies into everyday life, but the user level of proficiency in them in different areas and categories varies.

A series of semi-formalized interviews were conducted with representatives of the population of Moscow, St. Petersburg, Nizhny Novgorod and satellite towns in 2021-2023 (18-60 years old) as part of the author's study "Scientific Innovations in the Life of a Modern Metropolis" in order to identify the attitude of residents to the topics of innovation diffusion named by experts. Each interview lasted about half an hour on average, the snowball method was used in recruiting respondents. The following were used as significant parameters: the respondent's familiarity with new digital technologies as a basic-level user, smartphone ownership. After analyzing 300 interviews received, 3 were rejected in terms of answers to questions and 6 in terms of clarification of socio-demographic characteristics. 297 responses were used in the content analysis, 294 in the quantitative analysis.

¹⁴⁴Ibid.

¹⁴⁵Ibid.

Tonality analysis of interviews with city residents

To analyze the tone of respondents' statements about their attitude to the topics presented by experts and the first integral question about their personal experience of using new technologies, "manual" coding of text files was undertaken on a scale of 1 – positive (key words "I have a positive attitude", "I agree", "I am glad to use it"), 2 – neutral, 3 – negative ("I have a negative attitude", "I am afraid", "I am scared").

In the process of quantitative analysis (performed in the IBM statistical software package SPSS Statistics 27.0) confirmed the statistical significance of the parameters of age, place of residence, length of service and level of education of respondents, while there is practically no difference between the assessments of men and women.

The overwhelming majority of respondents were Russian citizens, and the control group consisted of fourth-year foreign students studying in the Software Engineering program (program in English, 26 people, 9% of the total number of respondents).

The characteristics of the respondents (men make up 40%, women 60%) are presented in Appendix 2 (see: pp. 179–180 of the dissertation).

The respondents' responses regarding their attitudes towards the topics of innovation diffusion, coded into differences in tonalities, for the entire sample are presented in Appendix 3 (see: pp. 181–183 of the dissertation).

Obviously, the most interesting topics for respondents are mobile applications and, in general, personal experience with various new technologies.

Further analysis of the results presents differences between respondent groups by gender, age, income level and other socio-demographic parameters.

The questions evoke almost the same reaction from male and female respondents: "Personal experience of implementing technologies" is assessed positively by 76% of men and women, and only mobile applications were treated more enthusiastically by women: 85% assessed them positively against the background of 78% of positive responses from men (both assessments are at the maximum level compared to other responses).

In all other cases, men's assessments are always more positive than women's (the difference is statistically insignificant); in some cases, women's assessments tend to be more neutral, while men's assessments are consistently positive.

The topics that received the highest percentage of positive attitudes are in the focus of respondents' attention, among the top four: Personal experience of implementing technologies, Mobile applications, Restrictions during the pandemic, IT products.

Topics that received less than 50% positive ratings either do not attract the attention of respondents or alarm them with the consequences of technology implementation. Women are quite neutral to the topic of developing innovative technologies – they consider themselves mainly users. Robotization of the household sphere and cyborgization of the body seem to be topics far from modern reality, and the quotes from the interviews fully confirm this.

The remaining 6 attract the attention of men even more, but do not become the main ones in the discussion of new technologies: respondents believe that smart city technologies are not yet quite noticeable for the average city dweller, automation of labor does not seem possible for those who answer - “my work cannot be automated”, and therefore does not attract keen interest, the topic of youth participation in science is recognized as important, but they themselves do not participate in it.

The participation of respondents of different ages gives the topics a special resonance. The analysis presents the responses of young respondents (18–34).

The first two topics attract the majority of respondents of all ages (Tables 5–6):

Table 5

Age and assessments of personal experience with technology implementation

1 Your age (number of full years) 11 Personal experience of implementing technologies - ratio, %			
	18 - 24	25 - 29	30 - 34
positively	80	72	57
neutral	17	24	36
negatively	3	4	7

Table 6**Age and attitude towards mobile applications**

1 Your age (number of full years) 12 Mobile applications - ratio, %			
	18 - 24	25 - 29	30 - 34
positively	84	84	71
neutral	12	12	21
negatively	3	4	7

In the future, we can record a significant difference in the attitude towards the topics of respondents of different age groups - the younger the respondent, the more positively he relates to the innovative technologies being introduced.

For older respondents, they are either not accessible or not very clear, and were not often encountered in life (Tables 7–8).

Table 7**Age and assessments of restrictions during the pandemic**

1 Your age (number of full years) 13 Restrictions during the pandemic - ratio, %			
	18 - 24	25 - 29	30 - 34
positively	73	60	50
neutral	24	30	29
negatively	3	10	21

Table 8**Age and ratings of IT products**

1 Your age (number of full years) 23 IT products - ratio, %			
	18 - 24	25 - 29	30 - 34
positively	72	62	29
neutral	24	26	57
negatively	4	12	14

The topic of communication gadgets becomes the most contrasting – the older the respondent, the more cautiously he evaluates the consequences of their development. (Table 9)

Table 9**Age and attitude towards communication gadgets**

1 Your age (number of full years) 15 Various communication gadgets - ratio, %			
	18 - 24	25 - 29	30 - 34
positively	62	60	36
neutral	32	26	36
negatively	6	14	29

Conclusions:

The main directions of analysis of the introduction of scientific innovations into everyday life of a person in modern megacities affect the positions of actors at various levels of social activity. Scientization affects the interests of participants at the global and macro levels (large corporations, national states and their associations, leading international organizations such as the UN); at the meso level (regional and local authorities, business and government agencies, civil society structures), as well as micro-level actors (individuals and small social groups - families, territorial communities).

Among the spheres of social life, it is currently impossible to single out even one that has not been subject to the introduction of innovative technologies and has not provided users with new social practices under the influence of the scientization process .

State bodies of the Russian Federation at the federal and regional levels are taking actions aimed at regulating and timely monitoring the process of development of the information society, the observance of human rights and the protection of personal data.

At the same time, monitoring of academic and business structures, presented in analytical reports, indicate trends towards smoothing out the digital inequality both between residents of megacities and rural hinterlands/small towns of Russia, and among different age groups, in terms of income and the ability to use IT infrastructure.

Further research into the digitalization of social practices of metropolitan residents should be continued in the framework of a survey of advanced and ordinary users of innovative technologies in order to identify their attitudes towards them, forecasts for the digitalization of their everyday life, and attitudes towards the development and implementation of IT solutions in everyday life.

2.3. Sociocultural factors of development of technological innovations in modern Russian society

Research of the process and state of implementation of digital technologies in everyday life The life of residents of megacities in modern Russia must be continued at the micro level of social interaction (individuals and small social groups).

The purpose of the analysis of respondents' responses presented in this paragraph is to identify the connection between the types of users and socio-cultural factors of the introduction of innovations into the life of a modern metropolis, as well as to describe the trends in the preservation or transformation of key characteristics of user groups.

The study of the introduction of new technologies into the daily life of city residents is focused on the consideration of the following factors (Table 10).

Table 10

Factors of implementation of innovations in everyday life, used in expert interviews

Factor 1	Mobile applications	Factor 7	Smart city
Factor 2	Technology during the pandemic	Factor 8	AI and the Future / Sites

Factor 3	Innovations and innovators	Factor 9	Automation of labor / Modernity
Factor 4	Children, parents and gadgets	Factor 10	Startups
Factor 5	Management / People and Machines	Factor 11	Youth and Science
Factor 6	Robots: International Cooperation and Domestic Industry	Factor 12	Development of IT infrastructure

Source: compiled by the author.

The main method for studying the opinions of participants at the micro level was a semi-structured in-depth interview, addressed primarily to residents of a megalopolis who consider themselves advanced users of innovations or innovators (quasi-expert interview). The level of proficiency in modern technologies in everyday life was chosen as the basis for such a definition. An advanced user not only skillfully applies various technologies in his/her everyday life, but also tracks changes, implements them in his/her everyday life and can reasonably present his/her own attitude to this process. Innovators (HSE monitoring) are advanced users of new technologies who are ready to participate in their improvement as a consumer and partly as a developer. They can critically comprehend innovations, reasonably assess their pros and cons for consumers and society, and, based on these findings, draw up a technical assignment for developers to make the necessary changes to the technologies, as well as offer their own opportunities for improving these technologies.

The selection of precisely this circle of respondents seems interesting due to their deep awareness of the digitalization of social practices and, at the same time, their identification with consumers of technologies rather than their developers. The participation of less informed users at this stage of the study will only provide an opportunity to find out their awareness and level of (non)proficiency in technologies,

but will not provide the necessary data on the implementation of digital innovative technologies in their everyday lives .¹⁴⁶

The method for identifying respondents is to contact the most interested and involved audience of thematic Internet sites and forums, employees of educational institutions, IT startups, and representatives of technological foresight communities.

The following phrase was used as an introductory question: "Please tell us in as much detail as possible about your personal experience of using innovative technologies in everyday life. To what extent has scientization affected different areas of your life (work, home, transport, leisure, health, family)? What emotions do you experience in connection with this and what is your attitude towards this process ? Do your friends and relatives, your family share your opinion ? "

The analysis of the data from the responses demonstrated a wide range of assessments and attitudes towards technological innovations in everyday life. At the same time, the overall positive perception of changes and even enthusiastic enthusiasm prevail. A balanced and cautious attitude along with the recognition of convenience and ease of use was noted by several respondents. The number of detailed, comprehensive responses is more than half, which allows us to speak about the high readiness of the respondents for self-analysis of their own interaction with the high-tech environment and its elements. The justification for the interest in new technologies and the use of innovations in everyday life is noteworthy: *"the desire and readiness to be modern, to meet the expectations of society, the challenges of technological development", "I sometimes feel like a resident of a developed country", "I think that in the 21st century it is no longer possible to live without electronics", "innovative technologies significantly affect all spheres of life, simultaneously facilitating interaction with other people, obtaining important information and complicating other aspects of life in terms of lack of time, work-life balance, information overload"*.

The benefits obtained from the use of technology in everyday social interactions and mentioned by respondents can be ranked as follows: convenience, time saving,

¹⁴⁶Lagutin Yu.V. Development of scientific and technological innovations in a modern metropolis // Izvestia SPbGEU . - 2022. No. 4 (136). P. 194-203.

overcoming physical limitations, minimizing interaction with official authorities, minimizing efforts to solve everyday problems.

The overall emotional background is positive; respondents did not demonstrate any obvious rejection or deep stress reactions.

Relatives and friends, including representatives of older generations, generally demonstrate a high level of involvement in the use of technological innovations in everyday life, many of the respondents note their own role in this process, a third of respondents admit that they themselves are influenced by their professional and personal circle of communication.

- Factor/Trend 1: Mobile Apps .

The respondents' attitudes towards mobile applications of various stores, purchases from home, payment without a cash register, checking the condition of goods in the store without a consultant, and the use of discount cards in the application were analyzed.

Formulation of the question: "How often do you use these opportunities, how have they affected your daily consumption of goods and services ? What could you say about the further development of these technologies ? "

The responses received allow us to speak about a high level of support for this trend. Residents of large cities, who are largely involved in online shopping, have easily and seamlessly switched to using various payment applications, cashier-less checkouts, and online delivery services for groceries and other everyday goods. The success of this direction of technologization of social practices was not least due to convenience and focus on solving user problems, as well as restrictions associated with the spread of the new coronavirus infection in 2020-2021, which in this context can be called the most significant driver of the development of the described trend of scientization of everyday life.

Thus, the respondent notes another aspect of using the specified technologies in this regard: *"I use them every day, it's great that you can avoid contact with people."* Half of the respondents noted a higher level of awareness in resource consumption, including the use of time, money and attention: *"With the advent of these innovative*

technologies, I began to buy things and products more often, but at the same time I became more selective in the products that I am going to buy, and accordingly, I began to manage money more rationally." At the same time, a quarter of the respondents note a high level of development and penetration of these technologies into everyday interactions in Russia (mainly in megacities) compared to other countries and regions: *"Compared to the rest of the world, similar mobile applications that simplify everyday life are developing very quickly and well in Russia. I experience a lot of inconvenience in other countries when traveling, because you quickly get used to good things."*

Finally, regarding the forecasts for the development of this technology, the vast majority of respondents express confidence in the implementation of the optimistic scenario, especially in connection with personal needs and goals of personal development: *"The forecast is that it will develop and gain momentum. I am incredibly happy to walk and enjoy the sun while flour and sunflower oil are being delivered home", "The introduction of such applications into my life has only simplified it. I no longer need to listen to a long lecture about some product that the consultant has memorized, and I just looked at the characteristics myself and ordered it. The development of such technologies will grow irreversibly, and no matter how much anyone wants it, they will have to accept this development and learn something now rather than try to catch up with this "train" later.*

At the same time, one of the respondents demonstrates clear alarmism regarding the future and partly the present, projecting his attitude towards simpler purchasing procedures onto general trends in the development of culture and society: *"People often abuse this, scrolling (loss of concentration), pathological development of materialism, degradation of independent thinking."*

In general, the "innovators" surveyed demonstrate a high level of involvement in the implementation of the described trend, contributing to its further dissemination by their personal example.

- Factor/trend 2: Pandemic and innovative technologies.

The restrictions during the pandemic were analyzed and how they showed new sides of various technologies: distance education, remote work, communication

without hugs, online shopping and deliveries, implementation of charitable initiatives online and offline.

Formulation of the question: *“What can you highlight as your most striking discoveries in the field of using innovations in everyday life throughout the history of COVID in Russia and in the world ? ”*

The pandemic experience can rightfully be considered a traumatic event, which to some extent led to short and incomplete answers, as well as repetitions of what was said in response to previous questions. Analyzing the respondents' answers, it should be noted the ambivalent nature of the value judgments regarding distance learning, distance work and remote interaction with other people. While emphasizing the undoubted benefits of using new technologies: freedom of choice of content and time savings, some of the answers also contain concerns about the lack of real communication, the lack of formation of stable connections in the process of social interaction.

The most expressed value judgments: *“Innovative technologies became the “straw” thanks to which life and work during the pandemic became not only possible, but also as efficient and comfortable as possible”; “Online communication was the only way not to go crazy during this period.”*

Opinions are divided regarding distance learning. The most optimistic : *“If you compare it [distance learning] with studying at a university, then online education brings me much more benefit. Firstly, I can choose the courses myself, study more purposefully. Secondly, I am not tied to the schedule of the educational institution, the studies are more productive, do not depend on anyone except me and a stable Internet connection. I believe that the future belongs to online education.”* It is supplemented by the opinion: *“ In fact, in the field of education, online learning is a separate pain, as for me, there is currently a significant gap in this for poorly formalized areas, for example, art, playing musical instruments.”* To summarize, we note that support for this trend is not so obvious, primarily due to its forced nature and relatively artificial nature, although the prerequisites for the described situations and scenarios were formed over a fairly long previous period.

- Factor/Trend 3: Innovation and Innovators .

The position and role in relation to technological innovations introduced into the everyday life of Russian megacities were studied. New technologies are dealt with by developers, used by advanced and ordinary users, and studied by various analysts.

Formulation of the question: "Who do you consider yourself to be and why ? What is your participation in the process of scientization of everyday practices of human life in a metropolis ? "

Almost all of the respondents were able to identify themselves and their role in the world of new technologies, and the majority defined themselves as "ordinary users" (*"It seems to me that I do not take any special part in these processes, I am an ordinary user. Let the developers deal with new technologies"*). However, there is a gradation of attitude to technologies here: from passive to proactive: *"I consider myself an ordinary user of innovative technologies who searches, analyzes, and reports information from various sources."*

Only about a quarter of respondents identified themselves as "advanced users": *"I consider myself an advanced user because I like to get to the heart of the matter. My involvement in this process is to simplify my life and to promote the use of technology-free or other technologies to my family so that their lives are and become easier ."* Finally, about 20% of respondents identified themselves as developers.

The obtained results allow us to differentiate the studied group of "innovators" more deeply and make a preliminary conclusion about the inverse correlation of the role in the development of technological innovations and the degree of optimism regarding their implementation in everyday life. At the same time, a positive moment is undoubtedly the predominance of ordinary consumers in the structure of social and everyday "innovators", and not professionals in the field of information technology or representatives of specialized scientific fields.

- Factor/Trend 4: Children, Parents and Gadgets

The environment of interaction between parents, children and gadgets in everyday life was analyzed. Various communication gadgets very quickly became part

of everyday life and acquired the ability to reformat established social practices, even within the framework of the traditional institution of the family.

Formulation of the question: "Please tell us what place virtual communities and communications occupy in your time, space, and communication ? To what extent are you a confident/advanced user or innovator and even a developer of various gadgets and related technologies ? How often do you encounter new products in this area, change equipment, try something previously unfamiliar ? How do these technologies, in your opinion, change parent -child relationships and children's communication with each other ? "

Most respondents noted the low frequency of device updates, several respondents mentioned the previous experience of "racing for fashion", which has now been overcome, which, in general, is consistent with the general trends in the development of the consumer high-tech electronics market.

Only one person admitted to dependence on electronic devices and other forms of addictive behavior, another 8 identified this disorder in other people. The main argument for limiting communication with technology is the need for live communication: *"The phone plays a very important role in my life, but if it is possible to communicate in real life, for me it will be preferable to online communication."*

The relationship between parents and children is an extremely controversial topic in modern society, as it affects the relationship between generations and the clash at the level of value perception of the world and its elements, including electronic devices. Some respondents note the non-conflict use of gadgets in the family, describing both parental and child experience: *" As for parent -child relationships, everything is very individual here. For some, these relationships change, for others, they do not. It all depends, as it seems to me, on upbringing."*

In addition to the opportunities provided by new technologies, risks associated with incomplete socialization and lack of live communication are also noted: *"The use of gadgets by children has both positive and negative sides. The positive ones include the ability to find information, accessibility of communication with loved ones. The negative ones include passion for games, weakening eyesight, reduced need for live*

communication”, “I don’t like how parents often give their child a phone with cartoons or games to keep them busy. Perhaps I have a rather conservative opinion, but it seems to me that this does not provide the same development for children, if compared with “live” communication between parent and child.”

In addition, the generational aspect is also important: *“The problem of the influence of technology on children is exaggerated: according to observations, children and teenagers more often use digital devices as a reason for communication than representatives of older generations, where the individual mode of immersion in the device prevails, rather than demonstrating the screen to a neighbor or interlocutor.”*

At the same time, a third of respondents note a cultural shift, in which the younger generation teaches the older generation to use technology, and not vice versa, as was the case 30-35 years ago. We also note that age influences the speed (or, in this case, the decline in speed) of updating technical devices: respondents over 25 demonstrated a change in priorities and a more balanced view.

- Factor/Trend 5: Management/People and Machines.

The issue of interpenetration of the world of people and the world of machines was investigated. People are currently increasingly connecting themselves with machines, up to the cyborgization of their own body and mind. Management in such a situation solves the issues of equal access of people to technologies and preventing harm from a machine to a person.

Formulation of the question: "What can you say about the current and future interaction of people and machines, human-machine interfaces ? Please tell us at what level of management of these resources and access you are, do you have and do you use the opportunities of owning/using machines in your everyday life ? "

When assessing personal experience of interaction with robotic interfaces, most respondents noted its almost complete absence. At the same time, the prospects of this direction of innovation development, according to the majority of respondents, are undeniable, especially if it is associated with solving the problems of people with limited mobility or working in dangerous conditions.

The main restraining factors mentioned are ethical issues related to the collection and processing of large amounts of personal data, as well as the implantation of individual mechanized organs in living people. Among the respondents, half of those surveyed expressed skeptical views in one form or another: *“I am distrustful even of applications that request access to too much personal data. I am extremely negative about physical implementation at this stage, since there is no necessary level of trust in the manufacturers.”*

At the same time, ethical issues in relation to the use of robots remain important: *“I see this as a serious direction of development, which is very connected with ethical aspects, which to some extent stops growth in this direction.”*

The problem of digital inequality and its widespread prevalence was not confirmed in the respondents’ answers, which allows us to speak about the insufficient relevance of this topic for the considered category of residents of megacities.

- Factor/Trend 6: Robots: International Cooperation and Domestic Industry.

The topic of robotization and the possible replacement of humans by robots, which is constantly discussed in the media and on the pages of scientific publications, was analyzed.

Formulation of the question: “Please describe your views on the development and spread of robots, and is there any interaction with robots in your life?”

According to the survey results, only 6 respondents admit real interaction with robots. The remaining participants do not fully understand the level of robotics penetration (in terms of automation of actions and partial autonomy from the operator), but they are very enthusiastic about the future associated with the interaction of people and robots, as well as partial replacement of the former by the latter in certain areas of social interaction. One of the illustrative statements in this context: *“In my life, there is no interaction with robots, but I believe that we can delegate our daily mechanical work to robots in order to unload our schedule and free up time for more important things.”* At the same time, there are also concerns about the growth of unemployment (8 responses). For example, a sharply negative assessment: *“In countries with a low*

standard of living and high unemployment, such as Russia, such discussions look absurd."

But, in general, the respondents' assessments are balanced, containing both positive and negative consequences of further robotization: *"This does not mean that all people will lose their jobs. Because there will be jobs where people will need to service and repair robotic equipment", "In the future, robots will completely replace human labor. Physical labor 100%. This will have both a positive and a negative side. The positive side is simplification of life, more time for rest and hedonism. The negative side is a sharp jump in unemployment, possible riots of the working class."*

The highest level of techno-optimism is demonstrated by representatives of the developer category. IT specialists : *"Over the past 10 years, I have encountered robots more and more and have experienced only positive emotions. I do not think that the problem of robots replacing people is significant. I think this will lead to an improvement in the life of all humanity."*

In general, this trend did not find significant support among the “innovators” surveyed due to its fantastic nature and the remoteness of its implementation in terms of time perspectives.

- Factor/Trend 7: Smart City.

The discussion focused on the introduction of modern technologies for managing the urban environment in megacities, which affects almost every resident. These innovations are loudly declared, but are not always obvious to the consumer.

Formulation of the question: "Please tell us which elements of the smart urban environment you personally interact with and which ones do you interact with most often, constantly, (in)conveniently? How have these technologies changed your urban life, and what attitude has your family developed towards them?"

Contradictory answers were received from respondents on the issues of functioning of integrated information systems, individual elements of which do not always allow to form an image of a single whole working for the benefit of people. Most of the respondents who answered this question noted elements of smart lighting, integration of transport applications and maps, as well as a street safety system and a

single interface for interaction with city services. Let us note the following statements in this context: *"From the daily, probably self-service checkouts, terminals, etc. I have a positive attitude, since this moment cancels the human factor", "I have encountered a few - intelligent street lighting, solar energy (power supply). It has become more convenient. Another advantage is that instead of regular electricity, solar panels can be used, which is much less harmful to the environment."*

The following can be cited as general statements: *"Basically, this is a system of automated city services and integrated solutions such as taxi and car sharing applications. Everything else is unnoticeable and almost not felt in everyday life", "The introduction of modern technologies for managing the urban environment in megacities affects almost every resident. These innovations are loudly declared, but are not always obvious to the consumer."*

Thus, the indicated tendency is recognized by “innovators” in a rather fragmentary manner and does not allow us to speak about a conscious perception of the smart city phenomenon in everyday life.

- Factor/trend 8: Artificial intelligence and the future / Website.

The analysis covered technologies using AI, which are very common nowadays and aimed at studying/predicting human behavior, targeting advertising offers and opinion management.

Formulation of the question: *"Please explain how aware you are of AI innovations around you in everyday life. At the same time, posting and collecting information on the Internet is becoming a routine operation in everyone's life. How often do you have to use the Internet in everyday life, and how do your family members navigate this ? "*¹⁴⁷

The analysis of the received answers, on the one hand, shows the respondents' complete immersion in using the Internet in everyday practices, and on the other hand, only 4 people are aware of the connection between the Internet and artificial intelligence and machine algorithms that optimize search and interaction with Internet

¹⁴⁷ Lagutin Yu.V. Development of scientific and technological innovations in a modern metropolis // Izvestia SPbGEU . - 2022. No. 4 (136). P. 194-203.

sites: *"I realize that AI collects information about us on the Internet, and based on the collection of this information, it gives us the necessary advertising/people/music/entertainment content."* However, the very invisibility of the technology is perceived as an advantage: *"I have never thought about where exactly AI is present in everyday life, and since I do not notice it, it means that it works quite successfully."*

At the same time, the phenomenon of targeting, customization to the user's needs, is recognized by many as a convenient opportunity: *"It is much nicer when website technologies filter and select content for you themselves, and you do not have to spend extra time and effort on it", "I often have to use the Internet, and I am only glad when my phone tells me where to find this or that thing, information, service, etc."*

One of the respondents also notes the risk factor of technology penetration into the content of human interaction with the Internet space: *"I use the Internet often, I try to check information and news for reliability in different sources, but opinion management, deepfakes, etc. develop mistrust of any information on the Internet. Targeting leads to an information vacuum, you have to monitor hygiene."*

Thus, the problem of artificial intelligence, the entry point to which can be a regular Internet search, is not perceived as such by all respondents, which indicates an insufficiently high level of support for this trend among "innovators" at the time of the study.

However, it is worth noting a kind of leap in the use of artificial intelligence technologies in everyday life, primarily by young people (mainly students). We are talking about methods for generating text and images using ChatGPT - a neural network model based on the GPT architecture (Generative Pre-trained Transformer), which is capable of learning from large amounts of text data. It can generate texts in more than 90 languages, answer questions, translate texts into other languages, create image descriptions, and perform many other natural language tasks.

According to the Household Economic Behavior Survey conducted by the National Research University Higher School of Economics in 2023 (6,000 people were surveyed), 8% of respondents already use artificial intelligence technologies to create

texts, and another 4% have such an intention; the figures are similar for image generation - 7% and 4%, respectively. The growing scale of use, coupled with the accessibility of mastering this technology, has already given rise to a separate class of sociological and linguistic studies (for example, in terms of the advantages and risks of using this tool), as well as a number of ethical issues related to the ability to recognize texts and images as generated by a neural network, determining the authorship of works, the problem of plagiarism in scientific and artistic texts and the imitation of real people (politicians and celebrities) in photos and videos.

All of the above significantly limits the active and meaningful use of artificial intelligence technologies (in particular ChatGPT) in everyday activities, as opposed to the hidden and unnoticeable use of individual solutions, as demonstrated by the study.

It should also be noted that it is the combination of benefits and advantages when using neural networks with risks and challenges that becomes the key factor in shaping attitudes towards the topic of artificial intelligence depending on age and social status. In the context of the data obtained, the use of ChatGPT in 2023–2024 and a generally positive attitude towards it are typical for young people with low and middle incomes who are ready to neglect existing risks for the sake of gaining chances for success within the framework of the new technological order.

To sum up the consideration of respondents' attitudes towards artificial intelligence technologies, it is worth emphasizing the preservation of the tone of attitude towards this topic and the partial transition to a proactive mode of use by a number of users due to the availability and prevalence of neural network solutions.

- Factor/trend 9: Automation of labor/Modernity.

The automation of labor, which is becoming part of almost any work, even office work (various CRM , electronic document systems), was studied. The current state of automation in Russia is not yet widespread, but development continues.

Formulation of the question: “Please assess the degree of automation of your work, and how do you feel about this process ? ”

Half of the responses received contain a high assessment of automation, a third - an average one with a generally positive perception of this trend. In particular, the following answer is indicative: *"At work, my tasks are maximally automated, since working with people and in sales requires a high energy consumption, so I delegate what technology can do for me and use programs in my work that can simplify the process of my work many times over."*

However, there is also skepticism about widespread automation (however, for teaching staff the creative nature of work is not an obstacle): *"In my particular case, automation of work is impossible. Because my activity is connected with creativity. Creativity is a processed personal experience of your life. It is different for each musician/artist/director. It follows that it is impossible to automate something like this."*

Thus, this trend was significantly reflected in the responses and assessments of respondents, which allows us to speak about the relevance of the issues considered in this section.

- Factor/Trend 10: Startups.

The product view of projects and the results of one's work is considered, which is increasingly instilled and even required in the modern world from workers and administrators in various spheres of life - in education, medicine, management, the IT industry. Offers of new technologies and products in the form of startups are more common in megacities than in small towns or rural areas.

Formulation of the question: "Please tell us to what extent the concept of a startup has entered your daily life, your work and studies, the life of your family?"

The topic of startups and startup thinking is perceived by respondents in a contradictory way, 10 responses contain a denial of any connection with the topic: *"The concept of "startup" has not affected or entered my everyday life, work and study", "This concept is alien to me, so far. Only for one family member this concept serves as the main source of income."* There is also a consideration of any business as a startup: *"There is a lot of talk about startups, but in fact the topic is similar to the development of any business. I treat this term as a fashionable word."*

In general, the word “startup” for 5 respondents has gone beyond the boundaries of IT business and extends to any projects in the professional sphere, as well as to everyday life, work, and study.

One of the answers partially answers the question of why this trend is not so widely supported by the survey participants: *"Startup culture is clearly an overheated topic, most developments duplicate existing or cover non-existent user needs. As a way to involve young people in entrepreneurship and innovation, it is not the worst option for 1-2 years, with almost no prospects in the future. At the same time, the spread of technocratic thinking is a little disturbing: there is a certain closed caste of innovators-startupers who direct the masses in the direction they need - this is, of course, not the case."*

To sum it up, we note that after its peak at the turn of 2000-2010, this topic gradually faded away due to mental fatigue from the cycle of innovations and IT businessmen racing to improve the lives of ordinary people.

- Factor/trend 11: Youth and science.

The process of digitalization of social practices was studied, which inevitably touches on the topic of scientific innovations and the participation of young people in academic science and the introduction of new technologies.

Formulation of the question: “Please tell us whether you participate in academic activities and what do you think about the role of young people in scientific activities in modern Russia ?”

An analysis of respondents’ responses showed that a third of respondents are involved in academic and/or scientific activities in various formats in one form or another; in 6 cases, the said activities are related to interaction with young people.

The answers to the second part of the question demonstrated both a slight skepticism about the possibilities of young people in self-realization through scientific activity (*“I believe that young people have no motivation to develop a career in science in modern Russia. The industry lacks prestige in society, and there is little funding”*), and confidence in the brilliant future of both the young scientists themselves and science as a whole: *“Young people play a truly important role in scientific activity;*

Russian youth have great scientific potential, which reflects the high quality of Russian education, especially in the field of exact, natural, and fundamental sciences.”

The generational aspect is also important, even if it is perceived contradictorily (as a factor that promotes and hinders the scientific socialization of young people): “*There are only more young people in these areas now, and this is encouraging, because it is more interesting to work with peers, you spend less time arguing with the older generation due to differences of opinion”, “Young scientists, using academic knowledge obtained from experienced teachers, are bold in using all innovations, instantly master everything new, they have no fear of new equipment. Young people in the modern world have all the resources for a breakthrough in science.”*

The following opinion, raising the issue of balance and harmony in professional development, is also indicative: *"The future certainly belongs to the youth. It is obvious that the youth is actively advancing in science and technology. Thinking about this, I always think about the balance of the spiritual and scientific and technical. In the rapid growth of scientific and technical achievements, it is especially necessary to concentrate on the spiritual development of the individual."*

This trend is thus not fully supported by “innovators” at the level of personal experience, but demonstrates a high level of social support for the participation of young people in scientific activities.

- Factor/trend 12: Development of IT infrastructure .

The penetration of new technologies into everyday life was analyzed, which is inevitably associated with the development of information infrastructure in the form of the development of IT companies, expansion of access to the Internet and all kinds of IT products, the offer of technologies in the lives of people of all ages from the first days of birth to the oldest.

Formulation of the question: “Please tell us how you see this process in your life and the daily life of your loved ones, as well as its impact on your work/study ? ”

The analysis of the received answers demonstrated a significant awareness of new technologies and their use in everyday life, however, of all respondents to this question, only 3 respondents were able to describe specific scenarios for the

introduction of technological innovations into everyday life. The most common statements were: *“Technology is our everything, without it we will not be able to evolve”*, *“Live meetings will become a luxury in many ways, which everyone will value more”*.

Undoubtedly, the generational aspect of the use of scientific and technological innovations also plays a role, especially since within the framework of the topic under consideration, the aspect of the involvement of households, including representatives of different generations, is very important : *“It seems to me that the introduction of the Internet and IT products has influenced my life and the lives of my relatives incredibly strongly. This is noticeable in all spheres of life and had an incredibly great influence on my education and work in the future”*; *“To introduce IT technologies into the everyday life of older people, it is necessary to ensure not only their financial availability for pensioners, but also to teach them how to use technical means. My parents have a hard time accepting the transfer of all services to electronic form. This is due to the fear of use, frequent failures in the work of housing and communal services, lack of trust in electronic databases”*; *“As children, we did not really know any technologies, but this, again, depends on the generation. In our case, my nine-year-old sister, for example, had been using gadgets and a computer since an earlier age, which made distance learning easier for her, since she already knew roughly how certain applications worked, the older generation, which was supposed to help with understanding the innovations, was not aware of how they worked.”*

In general, the attitude towards technology among most respondents is balanced and based on personal and professional interests: *“The process is managed on my part and is not focused on the advanced development of advanced technologies, but it is necessary to keep up with the news of IT companies.”*

Thus, an analysis of respondents’ attitudes towards this trend shows an insufficiently clear understanding of specific scenarios for the introduction of scientific and technological achievements into everyday life, despite a generally positive perception of this process.

At the same time, it should be noted that respondents ranked the presented topics in their answers according to the views of technology users, whose logic differs from that of IT experts. Taking this into account, the content analysis of interviews with so-called *quasi-experts* (citizens, users and innovators) is of interest. Table 11 presents the sequence of factors based on the results of factor analysis of interviews with city residents (quasi-experts).

Table 11

**The main contexts for the implementation of innovations in the social practices of citizens
(based on the analysis of interviews with city residents)**

Factor 1	Mobile Apps / Self-Service Convenience	Factor 7	Family and gadgets
Factor 2	Virtual communities	Factor 8	Social networks and interaction problems
Factor 3	Youth and Science / Ideas	Factor 9	Smart city
Factor 4	Smart home and health	Factor 10	Grocery delivery
Factor 5	Distance technologies (education, work)	Factor 11	Addiction and safety
Factor 6	Robots and automation	Factor 12	Interaction with organizations (world, business)

Source: compiled by the author.

The use of mobile applications and the associated convenience and autonomy of users was answered by the overwhelming majority of respondents (more than 80%, regardless of gender and age). Remote communication technologies are interpreted differently in the minds of city residents: virtual communities and remote communication in everyday life can be noted as the second most loaded factor, and remote learning and remote work technologies themselves are only in 5th place among all topics. The tendency to link the future, technology and the participation of young people in this was demonstrated by the answers of many respondents - the topic noted by experts as the penultimate (11 out of 12), unexpectedly rose high in the opinion of ordinary users - to 3rd place (given that many young respondents answered: "we

ourselves do not participate, but we consider the presence of young people in science and IT development important"). For city dwellers, smart home and health management technologies are much more important than the general topic of “People and Machines”, but smart city management is hardly noticeable for respondents, and this trend focused much less attention (9th place instead of 7th and fell to the last third of factors). Grocery delivery, the dangers of social networks, problems of addiction and safety, although not the first in the discussion, were first highlighted by city dwellers, as opposed to experts. Most likely, experts are more optimistic about the use of technology, and are also more confident in ensuring their safety.

The main lexemes of factors identified based on the results of program content analysis are presented in Table 12.

Table 12
Factor loading of “Lexeme”

F1+ Self-service convenience/Mobile applications 0.1568 money 0.1841 taxi 0.2493 online 0.3027 items 0.3052 saves 0.4381 payment 0.4805 cards 0.5086 self-service 0.5486 stores 0.5977 cash register 0.6001 mobile 0.6294 applications	F2+ Virtual Communities 0.2912 technology 0.3125 user 0.3497 new items 0.7547 virtual 0.7552 communications 0.807 community	F3- Youth and Science/Ideas -0.7992 youth -0.711 scientific -0.4674 Russia -0.4249 ideas -0.404 academic -0.3886 science -0.2793 world -0.2529 development -0.2446 society -0.1873 projects
F4+ Smart Home and Health 0.1472 health 0.194 save 0.2335 electronic 0.507 house 0.5571 leisure 0.5731 transport 0.5967 health	F5+ Distance 0.0992 programs 0.4263 pandemics 0.4429 opening 0.4484 education 0.5225 training 0.7119 remote	F6+ - Robots and automation -0.5945 robots -0.5904 automation -0.5507 internet -0.3227 startup -0.1484 generation 0.1694 resources 0.2436 cars
F7+ Family and Gadgets -0.1882 stops -0.1757 system 0.0779 functions 0.1217 age 0.2296 student 0.2908 gadgets 0.2942 emotions 0.303 communication 0.4793 friends 0.5192 family 0.5931 children	F8+ - Social networks and problems -0.7103 networks -0.6955 social 0.0764 problems 0.2059 home	F9- Smart City -0.8025 metropolis -0.7989 scientization -0.1923 information -0.1718 solutions -0.1251 vision

F10+ - Grocery delivery	F11- Dependency and Security	F12- Interaction with organizations (world, business)
-0.3472 urban	-0.5898 technologies	-0.3756 colleagues
-0.2903 smart	-0.4467 innovative	-0.286 world
-0.2327 robots	-0.3689 implementation	-0.2812 connection
0.5284 products	-0.3598 everyday	-0.2581 platforms
0.5436 shipping	-0.29 services	-0.2473 services
	-0.2235 AI	-0.1178 business
	-0.1858 security	0.1202 progress
	-0.1772 data	0.1946 phone
	-0.1687 dependencies	

Source: compiled by the author.

Based on the results of the content analysis of the respondents' responses, it becomes possible to determine their attitude to the current trends in the spread of innovations and the technologization of social practices in a modern metropolis. Of the 12 contexts of using innovative technologies proposed for discussion by the "innovators", contexts 1-4 received the greatest support, expressed in complete and detailed answers, reasoned judgments, as they are most in demand in the everyday life of respondents. The data obtained allowed us to conclude that innovations in these areas are perceived by the majority and institutionalized. It is characteristic that mobile applications have received the widest distribution and acceptance by the majority of users, due to their deep implementation in everyday social practices related to employment, leisure, consumption, individual and social interactions. Trends 5-8 required additional explanations and illustrations during the survey, and the most frequent tactic of respondents was to reformulate previously expressed opinions on previous contexts. The areas of application of innovations 9–12 were not relevant for all respondents or did not evoke a broad emotional response. This allows us to speak, on the one hand, about the insufficient development of the language of discussion and self-reflection in relation to scientific and technological innovations. On the other hand, at the microsocial level, this indicates on the limited interest in this area due to the lack of social needs among individual actors; at the macrosocial level – on the incomplete correspondence of the institutional structure to technical innovations. The identified aspects were ranked according to the degree of demand in the social practices of city residents and combined into three groups: (1) practices related to communications with people and institutions (factors 1–4); (2) practices related to communications with non-

human agents (factors 5–8), (3) practices related to the construction of new areas of application of innovations.

Typology of respondents

Factor analysis of the data array on the attitude (tonality) towards the implementation of new technologies made it possible to identify two factors (components) that intersect only in the topic of using artificial intelligence (presented in Table 13) :

Table 13
Factor loadings for assessing the sentiment of opinions on the introduction of new technologies

	Factors (loads)	
	1 Using technology in everyday life	2 Dive into innovation (development)
Smart city	,677	
Automation	,633	
IT	,611	
Innovation youth	,550	
Pandemic restrictions	,482	
Communication gadgets	,464	
Startup	,451	
Mobile applications		,748
Robotization		,606
Cybergization		,549
Personal experience		,521
AI	,496	,517
Developers		,477

Source: compiled by the author.

The topics are united by the specificity of development or only the use of new technologies. Distribution of respondent groups depending on the attitude (positive/negative) specifically to the topic of development and use of technologies. In

the plane of these two variables, the respondent groups are represented fairly evenly in all 4 quadrants.

The typology of groups by fullness is presented in the scatter diagram (Fig. 1) and Table 14a.

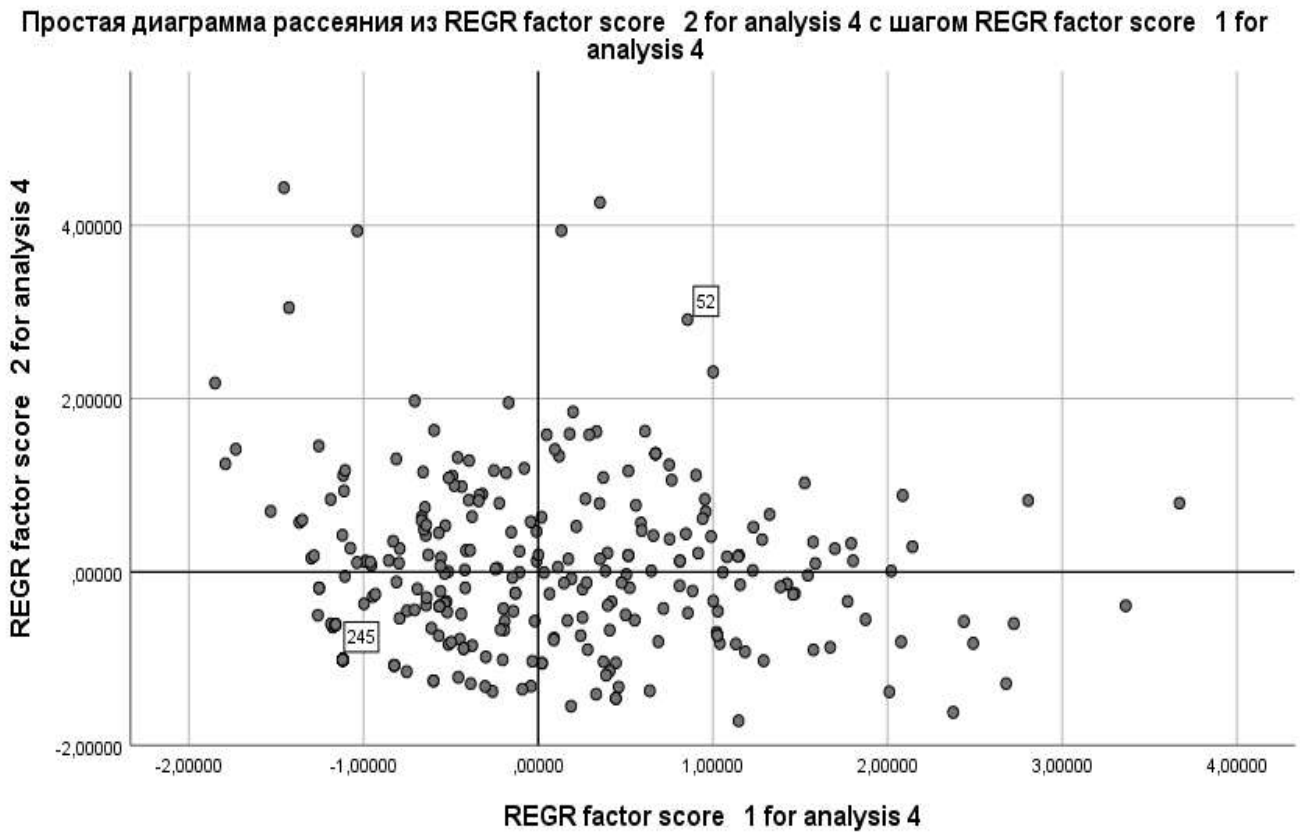


Fig. 1 Scatterplot

The groups are formed by quadrants of the presented two-dimensional space at the intersection of perpendicular axes formed by the factors.

Table 14a

Respondent groups by the parameter of opinion sentiment assessments

Group names, quadrant		Frequency	Valid percentage
Skeptics	1	66	22.4
Cautious majority	2	69	23.5
Enthusiastic Innovators	3	92	31.3
Selective Innovators	4	67	22.8
Total		294	100,0

The names of the groups are formulated according to their position in relation to the above factors in the space of axes of factors 1 and 2. The tone scale is formed from 1 (positive) to 3 (negative), therefore the 1st quadrant is represented by "Skeptics" who are not delighted with the development of innovative technologies and their penetration into everyday life. In the 3rd quadrant they are opposed by "Enthusiastic Innovators" who positively evaluate almost all issues of development and implementation of new technologies. The other two groups occupy an intermediate position, selectively treating different aspects of innovation.

It can be said that these two groups differ in their attitudes towards the factors of use and development of technologies: the "cautious majority" is happy to use new technologies in everyday life, but at the same time its representatives are very wary in matters of the development of robots, artificial intelligence and other innovations. "Selective innovators" understand better than many the difficulties and dangers of introducing technologies into everyday life, but they quite welcome the further development of applications, technical innovations and, in particular, are ready to participate in their development (Table 14: in the *Sentiment column* , factor 2 is indicated in gray, factor 1 is indicated in white).

Table 14

Attitude to substantive questions (by the answer “ Positive ” , in % by group)

N o.	Key	Skeptics	Cautious majority	Enthusiastic Innovators	Selective Innovators	Overall for the sample
1.	Smart city	21	74	88	24	55
2.	Automation	32	87	89	30	62
3.	IT Structures	29	81	94	48	66
4.	Innovation youth	26	71	72	30	52
5.	Pandemic restrictions	29	74	97	58	67
6.	Gadgets	20	55	91	43	56
7.	Startup	17	52	69	19	42
8.	Mobile applications	65	56	100	100	82

9.	Robotization	5	23	73	43	39
10.	Cyborgization	11	22	82	51	45
11.	Personal experience	40	75	92	91	76
12.	AI	12	38	91	45	50
13.	Developers	14	25	72	39	40

The difference in the answers (attitudes, tone) of the "skeptics" and "enthusiastic innovators" is traced across all questions and all answer options. This is evident from tables 15–17, formed according to the selected tone (positive/neutral/negative). The color indicates which group, or the sample as a whole, the representatives of the "Cautious Majority" and "Selective Innovators" are more inclined to:

Table 15

Attitude to substantive questions (by the answer “Positive”, in % by group)

No .	Key	Skeptics	Cautious majority	Enthusiastic Innovators	Selective Innovators	Overall for the sample
1.	Personal experience	40	75	92	91	76
2.	Mobile applications	65	56	100	100	82
3.	Pandemic restrictions	29	74	97	58	67
4.	Developers	14	25	72	39	40
5.	Gadgets	20	55	91	43	56
6.	Cyborgization	11	22	82	51	45
7.	Robotization	5	23	73	43	39
8.	Smart city	21	74	88	24	55
9.	AI	12	38	91	45	50
10.	Automation	32	87	89	30	62
11.	Startup	17	52	69	19	42
12.	Innovation youth	26	71	72	30	52
13.	IT Structures	29	81	94	48	66

Table 16

Attitude to substantive questions (by the answer “Neutral”, in % by group)

No .	Key	Skeptics	Cautious majority	Enthusiastic Innovators	Selective Developers	Overall for the sample
	Personal experience	53	22	6	9	21
1	Mobile applications	29	33	0	0	14
2	Pandemic restrictions	59	20	3	34	27
3	Developers	77	74	28	61	58
4	Gadgets	64	36	6	46	35
5	Cyborgization	62	55	17	45	42
6	Robotization	65	52	24	52	46
7	Smart city	64	25	12	57	37
8	AI	64	57	8	46	41
9	Automation	53	12	11	55	31
10	Startup	67	38	28	66	48
11	Innovation youth	50	22	23	46	34
12	IT Structures	55	13	5	42	27

Table 17

Attitude to substantive questions (by the answer “Negative”, in % by group)

No .	Key	Skeptics	Cautious majority	Enthusiastic Innovators	Selective Developers	Overall for the sample
	Personal experience	7	3	2	0	3
1	Mobile applications	6	10	0	0	4
2	Pandemic restrictions	12	6	0	8	6
3	Developers	9	1	0	0	2
4	Gadgets	16	9	3	11	9
5	Cyborgization	27	23	1	4	13
6	Robotization	30	25	3	5	15
7	Smart city	15	1	0	19	8
8	AI	24	6	1	9	9
9	Automation	15	1	0	15	7
10	Startup	16	10	3	15	10
11	Innovation youth	24	7	5	24	14
12	IT Structures	17	6	1	10	8

The groups are formed based on their preferences, but the features of their socio-demographic portrait can help us more accurately understand how their attitudes towards the subject of innovation were formed.

In general, the Skeptics group is older and contains a higher percentage of women than any other. More of them indicated themselves as managers than the average for the sample and other groups. A smaller percentage of them live in large cities, their families have more children, and they have more experience of family life and divorce. This portrait allows us to understand why they are more cautious and so skeptical: they evaluate the prospects of using innovations not only for themselves personally (they have less access to everything new), but also for their children and for the family as a whole (Appendix 4).

The group of "Enthusiastic Innovators" opposing them by all estimates is mostly represented by young people, often students, living mainly in a metropolis, often without officially registered relationships, without children (89%). Among them are students and graduates of IT fields, who noted that they themselves develop areas of new technologies, and never miss an opportunity to test new products on themselves.

The Cautious Majority and the Selective Developers appear to be very similar groups in terms of socio-demographic characteristics, but the differences in opinion are quite clearly emphasized by the difference in positions: among the representatives of the fourth group, there are more managers and teachers - they are, as a rule, at the cutting edge of technological development, and have fewer prejudices towards them.

Within the framework of D. Urry's mobility theory, we can say that the factor of increased mobility (moving to another city for study and work, distance from relatives, lack of family status and few children) forms preferences for accelerated testing and implementation of innovations in the respondents' own lives. On the contrary, family status, the presence of children, connection with a job position and work experience, orient a person to a more cautious attitude towards innovations, and bring him closer to the balance of negative and positive in attitudes towards the use of new technologies in the everyday life of his family and children.

Summarizing the analysis of the materials obtained from the interviews, an interesting trend can be identified: even among advanced users, there are respondents who have a negative or distinctly neutral (indifferent) attitude towards the topics of innovation diffusion – 3% and 21%, respectively. At the same time, certain factors and aspects of the introduction of innovations into everyday life caused a more pronounced negative attitude among some respondents (wide use of communication gadgets, cyborgization of the body and mind, introduction of artificial intelligence), while less noticeable elements of the innovation sphere (smart city technologies, automation of labor, introduction of digital technologies in education) were more associated with a neutral attitude.

In other words, the attitude towards innovations in general among the surveyed users is rather positive, but in relation to specific solutions the tone of the answers changes to a more cautious one. In order to determine the reasons for the current picture, in the course of further research, clarifying questions were asked, allowing us to determine the motives that form the above tone in relation to both individual factors of the introduction of technological innovations into the everyday practices of city residents, and to the sphere of innovations in general.

Qualitative analysis demonstrated – in responses regarding attitudes and established behavioral scenarios – the actualization of a number of reasons causing respondents' cautious or negative attitudes toward technological innovations, which to one degree or another echo the data of other researchers.

Firstly, it is necessary to highlight a group of *psychological* reasons caused by both negative experiences of using technologies (breakdown, fire, material damage due to incorrect operation) and a complex of stereotypes and ideas about the negative effects caused by interaction with them.

Secondly, for respondents, *cultural* reasons are important, related to the constant feeling of a lack of time, combined with the cult of its efficient use, which gives rise to a desire to temporarily isolate oneself from the world of high technologies through a temporary rejection of them or strictly controlled use of them.

Thirdly, a significant place in the answers of skeptical respondents is occupied by *social* reasons, suggesting a peculiar reaction to the mass character and general availability of certain technological solutions, which reduce to nothing the benefits caused by the desire to be those very “advanced” users. In addition, one can also note the articulated disappointment with online communication, perceived as a surrogate for something “authentic and real”.

Fourthly, the relevance of *economic* reasons for disappointment or negative attitudes towards technological innovations is associated with growing costs for an expanding range of technological solutions against the backdrop of cheaper individual elements. It is worth noting the gradual automation of routine processes in professional activities, and the presence of a whole range of prejudices against this process as a threat to employment and stable life.

To summarize the above, we can identify three groups of factors in the process of dissemination of innovative technologies in the everyday life of the population of modern Russian cities: digitalization of communications – digital socialization (appropriation of a convenient environment) – a factor of spiritual-innovative imbalance.

(1). *The digitalization factor of communications* : on the one hand, the greatest distribution and acceptance by users are demonstrated by innovations that facilitate communication processes; on the other hand, it is individuals who are most closely involved in social interaction networks who are ready not only to use new technologies, but also to inform their social environment about their appearance. As for communications as a basic need satisfied with the help of new technologies, we are talking about maintaining personal (family, friendly, neighborly) contacts and institutional interactions (especially during a pandemic) based on digital technologies.

At the microsociological level, horizontal interpersonal communications are built, facilitating the replication of technology and the involvement of the majority in new ways of implementing social practices.

At the macro-sociological level, communication between early adopters and the majority is carried out through institutionalized social connections (the existing

hierarchy and commercial offers), which facilitate information about new opportunities, implementation and scaling of innovative processes.

(2). As the content of *the digital socialization factor*, one can single out the degree of mastering various lines of digital products that provide users with more comfortable living conditions (online shopping, minimum communication in the service sector, remote access to study, work and leisure), constant communication with significant people and communities (relatives, colleagues and superiors, classmates - even on another continent). Mastering these innovations is currently less limited by the already familiar digital inequality due to the very wide distribution of technologies and low cost of use (bank cards without paying for support, delivery without a purchase limit, free messages in social networks with a zero balance) and more reflects the actor's immersion in the possession of the information and communication capabilities of products.

(3). *The factor of spiritual-innovative imbalance* can be proposed for studying the disturbance of the cultural background that technological innovations bring both at the macro level and in personal communication of metropolis residents. A person, assessing the degree of possible disturbance of his everyday life by the new technology presented to him, opens the doors of his home and social environment for it or puts up certain barriers to its use. First of all, concerns are expressed for the health (including mental) of children and relatives, secondly, the need to change the usual life following the use of technology is assessed: the time spent in virtual space, the value of communication with distant interlocutors, the expansion of content consumed in the spheres of education and leisure.

Conclusion

Summing up the consideration of the degree of scientific and expert development of the problem of digitalization and technologization of the daily activities of a resident of a modern metropolis, due to the mobility and relevance of the issues under consideration, we note the need for constant scientific research and reconfiguration of research approaches within the framework of interdisciplinary analysis.

The approach associated with the construction of social problems assumes a flexible response to changes occurring with the object of study, and new data and scientific research will ultimately contribute to more substantiated and practically significant conclusions and recommendations.

Industrial megacities in Russia and abroad are large sites for the production and implementation of technological innovations. Modern design of urban space, infrastructure of workplaces and consumption spheres, as well as social space for the development and consumption of innovative products are being formed.

The key actors are: at the macro level – government structures and intercontinental corporations, at the meso level – various business structures and organizations of different types using innovative solutions, at the micro level – the population in its various territorial communities and microgroups .

The development and implementation of technological innovations exacerbates social problems of various communities and is constructed in the public arenas of the metropolis. Sociocultural factors that hinder and promote the scientization of everyday life are formed at the intersection of the spheres of employment, leisure, consumption, and innovation.

1. Sociological approaches to studying the process of introducing technological innovations into the life of a modern Russian large industrial metropolis have been systematized with the aim of analysis of the features of the cultural transformation of everyday life and identification of the role of users of innovative technologies in this .

2. The chronology of the introduction and spread of digital technologies into social practices and residents of a modern metropolis is presented.

3. The key agents and public arenas for constructing social problems associated with the spread of digital technologies in the process of introducing technological innovations into social practices have been identified.

4. The socio-cultural specificity of the development and implementation of technological innovations at different levels of social activity (institutional, corporate and individual) is determined.

5. The main factors of the formation of digital inequality in the process of scientization of social practices of residents of large industrial megacities of Russia are identified and state instruments for smoothing them out are described.

5. The main socio-cultural and communication factors that contribute to and hinder effective diffusion of innovations into the everyday life of city dwellers.

The conducted author's research contributes to the development of ideas about the process of implementation of innovative technologies in a modern metropolis as a process of communication between actors of different levels. Analysis of the problems of dissemination of innovations in the everyday life of city dwellers allows to bring this phenomenon to public academic platforms for the purpose of further studying the possibilities of institutionalization of this process.

The theoretical and methodological provisions of the dissertation allow us to integrate concepts from various areas of sociological science: sociology of the information society, communication theories of innovation, sociology of culture, and concepts of constructing social problems.

Based on the analysis of the spread of digital innovations in the everyday life of city dwellers in megacities of Russia and abroad, socio-cultural factors that facilitate and hinder the introduction of scientific innovations into the lives of the population are identified.

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Classification of "Smart Cities"

Критерии	Smart city 1.0	Smart city 2.0	Smart city 3.0
Характеристика этапа	<p>Повышение эффективности управления городом. Сити-менеджеры получают доступ к интегрированным данным о состоянии сервисов, энергии и инфраструктуры в реальном времени</p> <p>На рынке доминируют крупные технологические компании</p>	<p>Развитие и управление городов на базе цифровых моделей инфраструктуры</p> <p>Включение стартапов и МСП в рыночные сегменты Smart City</p>	<p>Smart City как стратегия развития городов с общим видением</p> <p>Вовлечение всех групп участников: частный сектор, сообщества, академическая среда, кластеры, власти, институты развития</p> <p>Формирование устойчивых инновационных экосистем на базе ИКТ</p> <p>Граждане получают ключевую роль в формировании облика городов и возможностей взаимодействия с городской средой</p>
Результаты	<p>Была разработана архитектура для развертывания интеллектуальных систем и сервисов, внедрены технологии в пилотных проектах</p> <p>В ЕС инвестировано 1 млрд евро, но реальные задачи не были решены</p>		<p>Разработаны пилотные платформы для доступа к открытым данным</p>
Барьеры	<p>Проекты были горизонтально изолированы</p> <p>Вовлечение граждан было ограниченным</p>		<p>Нехватка венчурного капитала</p> <p>Межведомственной кооперации</p> <p>Нехватка реальных оценок проектов Smart City</p>
Энергетика	<p>Системы управления электроэнергией</p>	<p>Умные системы распределения и управления электроэнергией (Smart Grid, Micro Grid, AMR)</p>	<p>Соединенные системы разделения и потребления электроэнергии (Connected Smart Grid Systems)</p>

Classification of "Smart Cities"

Критерии	Smart city 1.0	Smart city 2.0	Smart city 3.0
Сети и коммуникация	GIS-информирование. Каналы проводной наземной связи	Умные сети, беспроводные точки доступа к сети Интернет, 3G/4G, оптические сети (wireless broadband service)	Семантические сети, объединенные данные Открытые данные из разных источников для распознавания паттернов, генерации оповещений, визуализации информации, предсказательная аналитика (semantic web, predictive analytics)
Транспорт	Централизованные системы мониторинга и управления транспортом	Интеллектуальный транспорт (гибридные системы для транспорта) – автоматизированные системы управления трафиком (intelligence transport, GIS map)	Связанный транспорт (возобновляемая энергия для транспорта) – беспилотное управление, автономное обслуживание (connected transport, autonomous vehicle)
Хранение и обработка данных	Вертикально изолированные системы сбора данных на основе RFID-технологий	Интернет вещей: интеграция сенсорных и идентификационных технологий и стандартов и протоколов межмашинного взаимодействия. Компьютерные вычисления и аналитика (Big Data)	Повсеместное вычисление (ubiquitous computing) собранных данных (внедрение управляющих микропроцессоров в самых различных видах бытового и промышленного оборудования) Облачные вычисления, сенсорные сети в комбинации с Веб 2.0, социальными сетями, краудсорсинговые платформы для коллективных вычислений.
Электронные сервисы	Электронная оплата городских сервисов	Городские платформы сервисов (e-parking, e-ticketing, e-commerce)	Стандартизация платформ городских сервисов на основе Интернета вещей
Развитие инфраструктуры	Устойчивое развитие инфраструктуры и зданий	Системы переработки и распределения отходов, «зеленые» здания, энергоэффективные здания	Интеллектуальные автоматизированные здания и инфраструктура
Проектирование зданий	CAD	BIM 1.0 (3D, visualization)	BIM 2.0, 3.0 (intelligent building, simulation)

Source: Technologies for Smart Cities. Report of the Center for Strategic Research "North-West", St. Petersburg, 2017. P. 6.

**Promising areas of big data use
in city management**

Use case big data	Characteristic
Assessing the level of advertising “pollution” of the urban environment	Collection and analysis of visual information from open profiles on social networks to adjust the advertising placement scheme in places with the greatest concentration of tourists and city guests
Compilation of energy consumption and energy efficiency ratings for districts and neighborhoods	Collection and analysis of data from smart meters, from utility payment systems with subsequent provision of generalized information
Disclosure of information on the composition of waste removed from a block, house	Providing data on the share of waste collected separately by residents of a block or house, distribution of solid waste by category
Compiling a street rating based on the number of discarded cigarette butts and other trash	Collecting sample data on litter collected on sidewalks to encourage mindful pedestrian behavior
Interactive map of neighboring communities	Analysis of social media groups on issues of solving common problems of residents of the house and microdistrict
Book rating in the district library	Informing district residents about leisure opportunities in a traditional format to increase their demand
Rating of city districts by the level of attendance of public spaces	Analysis of information on the demand for squares, parks, and playgrounds in order to stimulate their visits
Interactive map of flu incidence	Collection of information on visits of sick people to clinics, sales of medicines for the treatment of influenza and acute respiratory viral infections in pharmacies to promote preventive behavior of citizens

<p>Map showing the most common places where people cross the road in the wrong place</p>	<p>Automated collection of video surveillance data, accident information and individual messages in order to prevent such behavior, changes in road markings, traffic light phases, and off-street crossing configurations</p>
<p>Interactive map of accessibility of public commercial facilities</p>	<p>Collecting data from people with disabilities and people with limited mobility, assigning a rating to the premises of banks, shops, cafes and compiling an overall rating of “friendliness”</p>

Source: Afanasyev K.S., Stepanova E.S. Potential and Limitations of Using Big Data Analysis to Optimize City Management Processes // Digital Transformation of Public Administration: Proceedings of the International Scientific and Practical Conference, September 25-27, 2019 / Ed. by S.N. Bolshakov. St. Petersburg: Leningrad State University named after A.S. Pushkin, 2020. Pp. 135-142.

SWOT Analysis of the Smart City Concept

S (strengths)	W (weaknesses)
<ul style="list-style-type: none"> – A large number of ready-made “smart city” projects; - The novelty of the “smart city” concept; – Ensuring security in the city; – Development of the medical industry; – Creation of a comfortable urban environment and transport infrastructure; – Support for the environmental situation in the city 	<ul style="list-style-type: none"> – High cost of projects; – Technological complexity of projects; – Unfavorable climatic conditions in many regions of the Russian Federation; – Long period of project implementation.
O (opportunities)	T (threats)
<ul style="list-style-type: none"> – Large resources of land and energy sources; – Increase in city population; – State support through state programs; – Creation of new projects by research centers. 	<ul style="list-style-type: none"> – Shortage of qualified workers in the field of “smart city” projects; – Difficulty in finding investors for smart city projects; – Weak financial support for projects from the state.

Source: Volynets I.A., “Development of design solutions for the implementation of the “smart city” concept . Krasnoyarsk: SFU, 2020.

Characteristics of the respondent population

- by age:

1. Your age (number of full years), %	
18 - 24	66
25 - 29	17
30 - 34	5
35 - 39	2
40 - 44	3
45 - 49	5
50 - 54	1
55 - 59	1

- work experience :

3. Length of service (number of full years), %	
0 - 4	70
from 5 to 9	13
from 10 to 14	6
15-19	2
20-24	4
25-29	2
30-34	1
35-39	1

- positions:

5. Position, %	
Supervisor	10
Teacher	10
Employee	45
I don't work	35

- level of education:

7. Education level, %	
SPO	13
IN	61
Academic degree	2
Secondary general (school)	24

- marital status:

8. Marital status, %	
single/ not married	74
married	22
divorced	4
widower/widower	1

- income level:

10 Income level, %	
short	4
average	91
high	5

- place of residence:

24. Place of residence, %	
large city	84
city	15
village	1
village	0

25. Name of place of residence, %	
Moscow	17
Nizhny Novgorod	59
other	11
Saint Petersburg	3

Appendix 3

The respondents' answers about their attitudes towards the topics of innovation diffusion, coded into differences in tonalities, are presented in the sample as a whole by the following choice:

11. Personal experience of technology implementation - ratio, %	
positively	76
neutral	21
negatively	3

12. Mobile applications - ratio, %	
positively	82
neutral	14
negatively	4

13. Restrictions during the pandemic - ratio, %	
positively	67
neutral	27
negatively	6

14. New technologies are developed by developers - ratio, %	
positively	38
neutral	57
negatively	2

15. Various communication gadgets - ratio, %	
positively	56
neutral	35
negatively	9

16. Cyborgization of one's own body and mind - ratio, %	
positively	45
neutral	43
negatively	13

17. Robotization theme - ratio, %	
positively	39
neutral	46
negatively	15

18. Urban environment management technologies - ratio, %	
positively	55
neutral	37
negatively	8

19. Artificial Intelligence - ratio, %	
positively	50
neutral	40
negatively	9

20. Labor automation - ratio, %	
positively	62
neutral	31
negatively	7

21. Product view of projects - ratio, %	
positively	42
neutral	48
negatively	11

22. Theme of scientific innovation and youth participation - ratio, %	
positively	52
neutral	34
negatively	14

23. IT products - ratio, %	
positively	66
neutral	27
negatively	8

Typology of respondent groups

Table 14
Floor

Group names	Gender: male, % in group	Gender: female, % in group
1 Skeptics	33	67
2 Cautious Majority	46	54
3 Enthusiastic Innovators	45	55
4 Selective Innovators	36	64
Overall for the sample	41	59

Table 15
Age

Group names, quadrant	18 - 24, % in group	25 - 29, % in group	30 - 34, % in group	35 - 39 % in group
1 Skeptics	57	15	8	21
2 Cautious Majority	63	19	6	11
3 Enthusiastic Innovators	73	16	3	7
4 Selective Developers	67	18	3	9
Overall for the sample	66	17	5	11

Table 16
Place of residence

Group names	Metropolis, % in group	Average city, % in group	Small town, % in group	Village, % in group
1 Skeptics	70	27	2	1
2 Cautious Majority	81	16	3	0
3 Enthusiastic Innovators	95	5	0	0
4 Selective Developers	85	13	2	0
Overall for the sample	84	15	2	0

Table 17
Level of education

Group names	SPO, % in group	VO, % in group	Academic degree, % in group	School (students), % in group
1 Skeptics	21	73	1	5
2 Cautious Majority	9	70	1	20
3 Enthusiastic Innovators	9	41	2	48
4 Selective Developers	16	66	3	15
Overall for the sample	13	61	2	24

Table 18
Marital status

Group names	Single/not married, % in group	Married , % in group	Divorced, % in group	Widower / widow, % in group
1 Skeptics	62	26	11	1
2 Cautious Majority	77	23	0	0
3 Enthusiastic Innovators	78	17	3	2
4 Selective Developers	76	22	1	0
Overall for the sample	74	22	4	0

Table 19
Number of children

Group names	0, % in group	1, % in the group	2, % in the group	3 or more, % in the group
1 Skeptics	70	18	9	3
2 Cautious Majority	86	9	3	2
3 Enthusiastic Innovators	89	7	4	0
4 Selective Developers	84	3	10	3
Overall for the sample	83	9	7	2

Table 20
Job title

Group names	Leader, % in group	Teacher, % in group	Employee / Self-employed, % in group	Not working, % in group
1 Skeptics	15	9	47	29
2 Cautious Majority	7	6	47	39
3 Enthusiastic Innovators	7	11	41	41
4 Selective Developers	12	13	46	28
Overall for the sample	10	10	45	35