

Conference Paper

Latent Transformation of Generations Existence in Smart Society

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Abstract

The rapid development of information technologies in the formation of online or digital environments has a significant impact on the transformation of society contributing to the development of Smart society. This is largely due to the formation of a Smart environment based on the introduction of new technologies. In changing the patterns of social life, these new technologies require and stimulate the transformation of social norms and values. For example, simplified communication between people, expressed in the transfer of instant messages through mobile applications (messaging) gains popularity. Such messages replace verbal communication through mobile devices. The use of modern digital technologies contributes to developing new characteristics of activities, for example, multitasking, which is expressed in the ability to conduct several conversations and perform several actions in parallel. The aim of this study is to find the main trends and differences, and predict the behavior patterns of different age groups in the process of forming a Digital society. Changes can happen swiftly or slowly, in part determined by the speed of release of new information products. There is a latent transformation of generations' existence in modern society from natural to imposed forced skills against the backdrop of these technological transformations.

This research has identified the differences in the perception and attitude of different age groups to this transformation.

Keywords: Smart society, Digital society, smart environment, digital media

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1. Introduction

The widespread introduction of information technologies in all spheres of urban life, the transfer of commercial and public services to the online environment, the desire of Russia to form a Smart environment and Smart society faces the problem of perception and acceptance of these innovations by different generations. Today, more is said about the formation and introduction of information technology, the positive and negative sides of the development of online technologies in business and daily life, as well as changes in the educational environment in the context of building Smart society. However, not enough attention is paid to the transformation of existence and coexistence of different generations in a Smart society.

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In our research we take a historical-cultural approach to understanding the concept of generation, which allows us to use social differentiation as a separating aspect. It is related "to the temporal (socio-historical) characteristics of each successive generation relative to the General national genotype of this historical community" [Semenova, 2003]. This allows us to consider the change of generations through the prism of significant events that have a transformative and determinative influence on them, contributing to modification of the entire society. In our research, the spread of the Internet and the development of information technologies are considered as phenomena that contribute to changing social reality. At the same time, these phenomena are not static, their boundaries are not defined, there are only stages of development. In this regard, the transformation of generations occurs under the influence of dynamic phenomena that do not have clear limits to their completion. The situation we consider is unique, since historical and cultural events usually cover a number of age cohorts (grandfathers, fathers, children, grandchildren), but in our case, the concept of "generation" is each age cohort, what is associated with the speed of changing technological achievements.

Considering the generation from viewpoint of "a set of different numbers of cohorts, for example, by year of birth", allows us to explain "the dynamics of any processes by differences in the socialization of people and the change of cohorts formed under the influence of individual events or their totality" [Ibragimova, 2014]. Considering the state of the generation through the prism of a designated event that determines the main framework of changes, the demographic approach allows us to identify the stages of generation entry into the new information environment: from birth to transition to adulthood. In this regard, we don't use an approach where the differentiation of generations is carried out "according to the periods when representatives of any generation enter adulthood" [Radaev V. V., 2018]. It was necessary to cover not only the periods of growth and adulthood, but also the period of birth.

In Smart society the transformation of the existence of generations is largely related to the process of transferring experience from generation to generation. Since the advent and spread of information technologies, a prefigurative type of culture has been formed, reflecting the interaction of generations from the point of view of transferring accumulated experience and knowledge. According to it, the adult generation is not so much a translator of knowledge as an object of learning. They are forced to learn from the younger generation [Maksimova O., 2010], in particular, to use of new information services and products in everyday life. Thus, Maximov O. notes that " in all parts of the world, where all nation are united by an electronic communication network, young people have a common experience,... which has never been and will not be in the

older ones. And the older generation will never see a repeat of their unprecedented experience of changes that replace each other in the lives of young people. This gap between generations is completely new, it is global and common" [Maksimova O., 2010].

K. Mannheim also spoke about the possibility of changing the process of transferring experience from generation to generation: "the experience that comes with age gives advantages in many ways. On the other hand, the lack of experience in young people means reducing the ballast, making it easier for them to live in a changing world" [Mannheim K., 2000: 30]. In our opinion, the "ballast reduction" is due to the optimization of traditional processes for modern conditions. For example, there is a trend towards decrease the publication of books and brochures (in 2018, the number of published publications per capita decreased by 7.8%), while the total volume of the e-book market increased (compared to 2017 in 2018 by 34.7%) [Russian Book market, 2019]. This makes it easier to access books as sources of knowledge. Electronic resources allow you to search for information in an e-book without even reading it completely, which is not possible when using printed publications. This also contributes to the development of a fragmented, rather than complex, perception among the younger generation born in the information society era. These aspects reflect the differences in the existence of generations in the modern world. Each generation has its own view of the information technologies being implemented, based on their accumulated experience, but the question of the need for continuous interaction between generations to preserve and optimize traditional experience remains relevant. Identifying differences in the existence of generations in a Smart society will allow us to find common ground between generations to solve the problem of "transfer and use of social and information technology experience and human interaction in the world of technology and uncontrolled information" [Shurbe V., 2013: 102].

2. Method and Methodology

The aims of the research are to find the main trends and differences, as well as predict the behavior patterns of different age groups in the process of forming a Digital society. Based on this, the object of the study is information innovations and technologies introduced into the urban environment. The subject of the study is the perception and attitude of different age groups to these innovations. In this regard, a group of scientists from RUDN as part of the RFBR grant, conducted an online survey using the resources of the company "Tiburon-research". The poll was conducted from April 22 to May 5, 2019. The population of Moscow was taken as the general population. The sample is

represented by 4 groups: 1) 18–25 years old, 2) 26–35 years old, 3) 36–45 years old, 4) category of over 45 years old.

The main hypothesis of the study is the inevitable Informatization of everyday reality, which occurs as a result of the desire to form a Smart society or a Digital society, significantly transforms the existence of different generations. It creates simultaneously images of the environment (ordinary and surreal), existing in parallel, not passing into each other. However, the uniqueness of the situation is that the perception of Informatization by each generation corresponds to its generation, without going beyond it.

In the study the transformation of the existence of different generations in Smart society was considered through the prism of perception of the introduction of new information technologies in everyday life. Information innovations were identified in each urban sphere, which citizens most often use in everyday life or know about them through the media. The attitude to them was revealed through the use of ordinal scales consisting of five positions that are most easily perceived by respondents.

The methodological basis for analyzing the transformation of existences in the era of Smart Society is mainly the sociological concepts of Digital and Smart sociology. Digital sociology, which focuses on the technological aspects of the social institutions formation, relationships and everyday reality, identifies three main blocks of problems, the attitude to which forms the difference in the perception and acceptance by different generations in a Smart society. These are, firstly, issues of data security placed and used in the internet, secondly, inequality in access to information for creating new knowledge, and thirdly, the expansion of the control function both by the state and society.

The formation of a Smart society depends largely on the state, which has all the necessary resources for this. From this point of view, a Smart society is seen as a society in which digital technologies applied by the state can have a positive effect on the well-being of people, the economy, and the effectiveness of institutions [Bhaskar Chakravorti, Ravi Shankar Chaturvedi, Caroline Troein, 2017]. The main principle of Smart society is that you can optimize the performance of all the infrastructures of society by measuring more things, and by measuring them more accurately.

The implementation of this principle leads to the formation of a characteristic feature of the generation living in the era of Smart society — multitasking, react quickly and adjacency of professional skills. According to Muncie Hanna: «Today, people are multitasking and they are more into multi-channel experiencing. People now are not just into watching a movie or Television show with all their concentration. They are watching a movie, uploading status on their Facebook wall and tweeting about the

movie, all at the same time» [Mansi Khanna, Manju Khanna, 2019]. The introduction of information systems requires the development of certain skills in employees, for example, «...media workers are compelled to specialize in connected fields in order to deal with the informational flow and new professional challenges» [Mansi Khanna, Manju Khanna, 2019].

3. Result and Discussions

Smart society and Digital society a priori presuppose the existence and development of new media and digital culture that have a significant impact on society as a whole and on the individual in particular. Currently, it is noted that «digital media has become so important that the boundary between the media and technology industries has broken down» [Mansi Khanna, Manju Khanna, 2019].

Now the audience of Internet users is growing rapidly, mainly due to mobile Internet users. According to GfK research, "at the end of 2017, this was 67 million people. The growth of the mobile Internet audience is primarily due to the growth of smartphone penetration — at the beginning of 2018, more than half of the adult population of the Russian Federation (51.5%) used Internet access from smartphones" [Press release... 2018]. In this regard, the mobile app market is actively developing: Internet access at any time and in any place, it's a convenient tool for accessing social networks, receiving news and services, etc. [Mansi Khanna, Manju Khanna, 2019]. According to the study, in 2019, the most popular mobile apps among citizens are the messengers (WhatsApp, Viber, Telegram) (81.8%), social networks (Facebook, Instagram, Vkontakte, etc.) (65.7%), specialized apps (weather, Yandex.Transport/Maps, etc., Mosparking (54.9%).

Specialized apps are among the three most popular among citizens which indicates the successful implementation of information systems in the urban sphere, that affects the formation of a smart environment in the capital. Its formation is largely carried out due to the Moscow city program of "Information city" (2017) [the program "Smart city"..., 2019]. In the research conducted by RUDN scientists in 2019, which determined the percentage of users who know about innovative implementations in the urban sphere, it was found that, for example, in the transport sector, almost all respondents use taxi services via online systems (82.9%), track public transport via the Internet (80.3%), and every second Respondent paid for a taxi via the Internet (55.5%), tracked / received notifications of fines (54.4%). Most users are satisfied with them (92% to 76%).

However, despite the General picture of citizens ' approval of these innovations in urban life, there is a significant difference in the attitude towards them from different

age groups. Our study has identified four age groups such as 18–25 years old, 26–35 years old, 35–45 years old, and over 45 years old. Representatives of these age groups go through the process of socialization at different stages of development of new communication and information technologies.

As can be seen from table 1, each age group at different stages of its socialization faced and plunged into the era of the information society. For example, people aged 18–25 were already born in the digital age. For them, the use of information and electronic systems in everyday life is an integral part of their coexistence and is perceived as a given and a necessity, not as an innovation. People aged 26–35 have entered the information society era at a more conscious age, and therefore innovations in the use of information and electronic systems are of increased interest to them. Their perception can be compared to that of a child who is interested in a new toy. They are interested in using it and learning its full functionality. People aged 35–45 are faced with the need to learn and get used to using new information and electronic systems. They are skeptical about the use of these systems in everyday life, to give a lot of value judgments. They are skeptical about the use of these systems in everyday life, give a lot of value judgments. People over the age of 45 are forced to use information and electronic systems, because without them they may find themselves outside the society in which they exist. They worry about introducing innovations into everyday life, despite understanding some of their advantages.

TABLE 1: Periods of growing up of different age groups and development of the Internet

Age groups	Year of birth	Children (from 7-18 years old)	Young people (from the age of 19)
18–25 years old	1994–2001	2001-2019	since 2012
26–35 years old	1984–1993	1991-2011	since 2002
36–45 years old	1974–1983	1981–2001	since 1992
over 45 years old	>1974	(for a person 60 years old) 1966–1977	(for a person 60 years old) since 1978

Main stages of Internet development in Russia

Until 1990 — it is almost not widely available

1990–2000 — introducing it to Russia and making it widely available

since 2008 — development of fixed broadband access [Rossotto C.M. et al., 2015]

since 2011 — growth and development of the smartphone sales market

The described features of the perception of innovation by different age groups are clearly reflected in their attitude to the change in the urban environment after the introduction of information and communication innovations. For example, in the transport sector, the younger the respondents, the more often they talked about improving the

road transport situation in the city after the introduction of innovative technologies (18–25 years — 45%, over 45 years — 18%). At the same time, the percentage of respondents who noted the effect of improvement with doubt, that is, those who answered "Rather improved", does not change significantly, although the trend of increasing doubts with age remains. Similar situations are observed in other urban spheres (see table 2).

TABLE 2: Perception of changes in the urban environment after the introduction of innovative technologies and information systems

	18--25 years old	26--35 years old	36--45 years old	over 45 years old
In transport sector				
improved	44.6%	36.6%	28.7%	18.3%
rather improved	41.0%	43.7%	43.0%	46.4%
had no effect	10.0%	15.0%	17.8%	23.0%
worsened / rather worsened	2.0%	0.8%	3.9%	3.2%
I find it difficult to answer	2.4%	3.9%	6.6%	9.1%
In utilities sector				
improved	24.3%	24.0%	16.7%	9.5%
rather improved	39.8%	37.4%	37.6%	29.4%
had no effect	14.3%	20.9%	24.8%	38.9%
worsened / rather worsened	6.4%	2.0%	5.4%	8.8%
I find it difficult to answer	15.1%	15.7%	15.5%	13.5%
In education				
improved	32.3%	33.1%	28.3%	14.3%
rather improved	39.8%	41.7%	38.8%	37.7%
had no effect	12.7%	9.1%	16.7%	17.1%
worsened / rather worsened	9.8%	5.9%	4.8%	11.9%
I find it difficult to answer	5.6%	10.2%	11.6%	19.0%
In medicine				
improved	42.2%	42.5%	28.7%	26.2%
rather improved	43.0%	42.9%	40.7%	44.8%
had no effect	8.0%	6.3%	14.0%	15.1%
worsened / rather worsened	4.4%	4.0%	8.9%	8.8%
I find it difficult to answer	2.4%	4.3%	7.8%	5.2%

The perception and attitude of different age groups to innovative introductions to the urban environment largely reflects their sense of self-existence in the era of Smart society. Thus, this society will be the most comfortable for the younger generation, since the process of their socialization and growing up is already taking place in this era. A smart society is less comfortable for older people because it is radically different from the society during their adulthood with its forms of coexistence. In this regard, digital

technologies introduced into their lives change the way they exist, which further affects the behavior of people and their consciousness [Elias N., 2001].

Smart society means living in a Smart city where « to generate economic, social and environmental value through the seamless connection of urban services and infrastructure by digital technologies» [James Evans (Guest Editors / Authors), Andrew Karvonen, Andres LuqueAyala, Chris Martin, Kes McCormick, Rob Raven & Yuliya Voytenko Palgan, 2019]. At the same time, it implies the aspect of human involvement and participation. Without this aspect, the formation of a Smart city becomes impossible, since it is a priori focused on an active and initiative society that uses smart technologies. For these purposes, a number of tools are being introduced to facilitate the involvement of citizens in society, these include data platforms and urban living lab, which should help the public participate in urban governance processes using digital technologies [Voytenko, Y., K. McCormick, J. Evans, and G. Schwila, 2016].

Considering Moscow as an example, we should note the active introduction of information and electronic systems for providing public services. But it also puts citizens in conditions of forced use of online systems to obtain public services. Thus, according to our research, the most of respondents submitted documents electronically to state websites (64.9%) and made documents through them (60.3%). But the introduction and use of digital technologies does not yet indicate the formation of a Smart environment, a Smart city. Smart environment is impossible without a Smart society which is dominated by independent, initiative, and involved individuals.

Analyzing the existence of different age groups in the new conditions, it should be noted that the formation of a Smart society is assigned to the younger generation, which is the most adapted and receptive to innovation, initiative and active in life. Thus, the most initiative group is the age group of 26–35 years (see table 3). With enthusiasm consuming digital technologies, they show individual and social activity (57.9% among 26–35 years old, 40.5% among over 45 years old). This age group is more convinced of the need to involve citizens in the management process (63.8%), followed by the 18–25 age group (62.9%). Citizens aged 26–35 are more likely to express a desire to participate in solving urban problems (65.7%). This is largely due to the formation of convenient and easy conditions for this participation: in the form of electronic referendums, filing and collecting signatures on petitions, seek assistance to authorities through websites.

In this regard, it should be noted that these formats are convenient for the state in terms of reducing the manifestation of conflict forms of participation (for example, rallies). These forms of participation have a non-personal image: an opinion is expressed, but it does not have an obvious message or representation. In this regard, undesirable

TABLE 3: Types of activity that reflect the involvement of citizens in the management process

Types of activity	Percentage of respondents (multiple response)
Take part in an electronic referendum	38.4%
To participate in the submission / collection of signatures for petitions	36.4%
Publishing a complaint on websites (gorod.mos.ru, etc.)	34.2%
Participate in public hearings	18.3%
Participation in rallies	14.6%
To propose initiatives to the municipal authorities	11.4%
Participation in crowdsourcing projects	8.5%
Others	0.9%
Didn't do any of this	2.6%
Cannot say	2.9%

manifestations in these forms are easier to smooth out or ignore on the part of the state. At the same time, citizens who have expressed their opinion feel confident in their involvement in solving public issues. However, the ease of participation through these forms, a certain depersonalization of it, can also have negative consequences: irresponsibility and rashness in decision-making, which also to some extent reflects the characteristics of the younger generation.

4. Conclusions

The study has revealed that entering the Smart society and the world of digitalization at different stages of human socialization significantly changes the perception of new innovative systems: from complex incomprehensible space to everyday reality.

The survey has elucidated that smart environment, based on information and digitization, has a significant impact on the development of individuals' social characteristics: from involvement to alienation. The younger generation, due to their involvement in the communication and information environment, is more initiative, receptive and involved. The adult generation tends to be aloof, indifferent, and isolated due to the fact that they have some obstacles in the digital environment.

It should be noted that previously announced social characteristics of the young generation allow them to easily acquire new social skills for mastering related professions, which are spread in modern society. In addition, they themselves become, to some extent, generators of the creation of new professions that arise from the use and development of existing and new communication and information resources.

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