

CDSSES 2020**IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin****PANDEMIC 2020: USE OF CONTEMPORARY MEDIA TECHNOLOGIES IN SOCIALLY IMPORTANT EVENTS**

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Abstract

The purpose of the research is to consider the specifics of media technologies used by popular Internet resources during Coronavirus's pandemic. The research methods include the quality analysis of functional possibilities and the content of the most famous Russian Internet resources (VKontakte, Yandex, Google), reflecting the questions of Coronavirus pandemic 2020 and survey of the Internet audience (N=1500). The results include the classification of contemporary media technologies' possibilities in socially important events: information services, entertaining opportunities, communicative support, social support, and social tasks. The author concludes that Internet users support the implementation of contemporary media technologies and media instruments to develop the socially essential tasks and informational support of such events, such as the Coronavirus pandemic. The audience willingly percept the innovative technologies, including those which use artificial intelligence algorithms. However, the lack of knowledge about their functioning principles often causes the mistrust of such tools. Ethics is very acute for the audience when the users' data could be analyzed without permission (face check, search processing).

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1. Introduction

New media and information technologies actively respond to the events happening in the world. The more socially important the event is, the more active the response is. The pandemic 2020 demonstrated the inclusion of mass media in discussion and support of the event. Also the thesis is supported with multiple scientific types of research.

By the end of August 2020, the site <https://www.tandfonline.com> with the request Covid 19 shows 3,833 publications. Scientific research topics are very different because the event's topicality causes users' interest from various scientific directions. Within our interest (mass media and media communications) we studied over 500 scientific publications registered in the international database Web of Science. We may mark the following most important problems concerning the use of information and media technologies during the pandemic:

1) The COVID-19 crisis has demonstrated journalism's value for individuals and society as well as its vulnerability and made a case for a collective responsibility to sustain this vital institution (Olsen et al., 2020).

2) The significance of Social Media outlets cannot be overemphasized with recourse to information dissemination. But these platforms have been abused as people hide under its anonymity to spread fake messages and instigate panic amongst members of the general public (Obi-Ani et al., 2020; Saurwein & Spencer-Smith, 2020). The other explorers also ask the questions the validity of information, for example, how differently Western and Chinese media sources and frame events in Africa (Gabore, 2020).

3) Social networks are used to inform the audience and solve other socially essential tasks. For example, social media used in the medical and health sectors has brought much convenience to physicians and patients and created some new ethical issues. The main ethical issues are the privacy and ownership of patient health data, and the authenticity and openness of what physicians publish (Fyyaz, 2019; Grajales 3rd et al., 2014), including during the pandemic of Coronavirus (Bechmann, 2020; Wan et al., 2020)

4) Such socially essential events as the pandemic of Covid 19 push the scientists to innovative developments and algorithms in the sphere of media and information communications, helping to struggle the Coronavirus and to conduct the researches studying the attitude of people towards the events happening (Nemes & Kiss, 2020).

5) One of the innovative tools is the use of artificial intelligence algorithms for solving various kinds of problems during a pandemic, in particular, the use of information and media technologies (Evsyukov et al., 2020; Egorova et al., 2020; Madzhidov & Kurakin, 2020).

2. Problem Statement

Based on the Russian and foreign authors' theoretical resources analysis, we defined the essential vital moments concerning information and media technologies during the pandemic Covid-19. The practical part of the research considers the Russian experience with specifics and reflects the world trends.

3. Research Questions

The research is focused on the following questions, reflecting the functioning of the Russian Internet resources:

1) What is the response of mass media to world events, for example, during the pandemic 2020? Which media resources have a more significant potential?

2) How are the algorithms of artificial intelligence used in the discussion of the pandemic questions?

3) What functional possibilities are provided by media platforms for discussion and solution of the pandemic 2020 questions?

4) What do the users think about implementing special instruments to discuss socially significant events, for example, the Coronavirus pandemic? What functional possibilities are used by the audience?

4. Purpose of the Study

The purpose of the study is to consider the specifics of media technologies used by popular Internet resources during the Coronavirus pandemic 2020 and understand the audience's attitude to these technologies and instruments.

5. Research Methods

The research methods include the quality analysis of functional possibilities and the content of popular Russian Internet resources (VKontakte, Yandex, Google), reflecting the questions of Coronavirus pandemic 2020 and the survey of the Internet audience (N=1500).

6. Findings

6.1. Contemporary media technologies as the instrument of solution for socially important tasks

Popular Russian services continuously demonstrate the quick response to socially important events and offer the audience special services, instruments and applications, thematically and functionally adopted for the news. The pandemic 2020 is one of the unique indexes of implementation of contemporary media technologies, including the algorithms of artificial intelligence to solve the socially essential tasks.

The material of the research included the possibilities and instruments of sites Yandex (the share of “Yandex. Search” is 50,9% in Runet), VKontakte (occupies the first position among the social networks in Russia) and other Internet-resources (Google, Instagram, other applications etc), meant to informatively and socially support the society during the spread of Covid-19.

After studying the possibilities of those sites, we may construct a classification based on the instrument's direct target purpose and the leading tasks of its use.

1) Information services

- news lines (often with geolocation check)
 - statistics
 - special communities/channels/automatic informers
 - recommendations
 - self-isolation indexes
- 2) Entertaining possibilities
- emoji status
 - stickers/GIFs
 - presents
 - hashtags/flashmobs
- 3) Communicative support
- chatbots
 - tests
- 4) Social support and social tasks
- hashtags/flashmobs
 - technology of people verification in video flood (to follow the social distance)
 - technology of face check (to control the self-isolation regime)
 - the Google instrument "Flu Trends" (to forecast the flu epidemic after the search requests)

The free access of almost any representative of society to the information, the technical possibility of discussion of the happening events online and, as a result, the struggle of mass media for quick news lead to some tendencies of information flow functioning. Despite their main purpose (for example, communicative function, advertising-referative function, etc), most media resources start *fulfilling the function of informing the audience*. This happens in different forms – from special news lines, following the users' demands (for example, using geolocation) to develop innovative services. Thus, particular communities and channels in social media were popular before, and the pandemic COVID-2019 only led to the creation of new thematic groups and subscriptions. Also, the standard service of informing the audience with subscriptions and automatic mail (chat bots) is used now by many organizations to discuss the Coronavirus situation. For example, on April 9, the Health Care Ministry of the Russian Federation launched a chatbot in ICQ New and WhatsApp to inform the population about COVID – a free service that collected the correct, valid and topical information about the Coronavirus. Such instruments positively influence the media's safety because receiving information from official sources in the form of subscriptions and chatbots allows for the complete and uptime view of the event, excluding the fake spreads.

The topical events, posing a great interest for the audience, stimulate media to implement the innovative instruments. For example, "The index of self-isolation" was developed by the company Yandex and presented on March 30 in the form of early indexes due to analysing the data, received from many its platforms. The date was chosen with the introduction of self-isolation in Moscow and the Moscow region. This was the day to launch the temporary prohibition to exit the house with a few exceptions. During April Yandex worked over the increase in the number of the cities controlled – from large dwellings with a population of over 100 thsd people to smaller towns. The self-isolation index is the

statistic informer depending on the data of various Yandex services, the index calculation is fulfilled by comparing the level of activity in the city streets during the pandemic and before. The service was actively used during 2-3 months before the self-isolation regime was canceled. This instrument may be used during the new wave of COVID-19 or in any other situation, demanding the necessity to estimate population activity data.

Entertaining instruments are the inevitable part of many contemporary media resources; different factors support this. Firstly, the necessity for self-expression of the Net contemporary (the emotional condition, life changes, happening events etc). During the pandemic, the social networks, for example, VKontakte and Instagram provided the users with various functional possibilities to meet the demand: emoji status was introduced, which allowed to show the user's condition during the self-isolation, as well as hashtags, for example, #betterathome to demonstrate the organization of activity during self-isolation. Unique stickers and GIFs were created to express emotions. Secondly, the orientation for different age of users. Younger audiences prefer entertaining instruments, not a news line. Thirdly, entertaining functional possibilities in a greater degree than news influences social unity in complex life circumstances and forms a positive attitude to what is happening. Often such an instrument bears not only the entertaining character but practically focused one as well. Thus, special thematic presents in social networks allow reconsidering the event in the form of a game and reminding about the importance of certain safety measures against Covid-19 (for example, a free gift in the form of a dog in a mask and gloves in VKontakte).

In particular social stress, *communicative support* is significant. Today, it is communication with people and the possibility of receiving feedback on the habitual Internet resources. Thus, during the pandemic, social media and search services actively introduced the instruments, allowing them to get the feedback. For example, online tests "Check your knowledge about the virus", "Why it is important to stay at home," and others. Also particular chatbots were created – virtual communicators, which fulfill the information mail and respond to them. One of such services is VK Sport – the chatbot allows keeping fit together on the sport platform VKontakte and offers training and dance classes from coaches.

Also an essential purpose of using media technologies is to create *social support and solution to social tasks*. Thus, hashtags and flash mobs carry entertaining information and cooperation between people or population classes (for example, flash mobs with the hashtag #Thankstomedicos to support doctors struggling for the lives and health of people infected with Coronavirus).

Media technologies are actively used to solve the tasks when we speak about the work with many data that are difficult to be calculated without special resources.

To follow the social distance, the company Landing AI offered people verification in video flood. The camera calibrates the entrance and focuses on the perspective, and the neuronal net shows each person with a rectangular box. If two rectangular boxes are too close to each other they are colored with red. Such a system is used by Amazon, where the employees are fined if they violate the distance (Yamshchikov, 2020, June 4).

In large cities of the Russian Federation during the self-isolation regime, a face check system was found to find the citizens who violate the quarantine regime after visiting other countries of being suspected with Coronavirus.

Ten years ago Google specialists paid attention that the flu epidemic came after a sharp increase of searches connected with health. To check their observations, they took 50 million of the most popular searches in the USA and compared their frequency with the data about the flu epidemic, which happened between 2003 and 2008. They managed classifying 45 searches, the frequency of which correlates with the epidemic approach. Thus, the Flu Trends instrument tried to identify the epidemic start with the searches faster than the doctors can do – the epidemic was observed two weeks before doctors could claim the epidemic start. In some cases, it was even faster. For example, the first signs of an epidemic of atypical pneumonia appeared in the Internet two months before it was noted by WHO (Tikhonov, 2014).

Later, scientists pointed to sufficient failures in Google Flu Trends forecasts in one of the publications in Science. They say, the service increased the flu epidemic by more than 50% in 2012-2013 and 2011-2012 (Hodson, 2014, March 13). Finally Google had to shut down the instrument of epidemic estimation because instead of searching the topics connected with flu the users started visiting the site Flu Trends and the model lost its accuracy.

So, the use of contemporary media technologies becomes more important in social life with every year, but quite often the instruments demand improvement and the audience needs a complete understanding of such services functioning.

6.2. Use of innovative media technologies while discussing the pandemic of Coronavirus: the audience opinion

To study the audience's opinion we used the method of survey (N=1500). The chronological research frames: July 2020. The respondents are 12 to 60 (target quote selection), Internet users, and the account in at least one social network VKontakte (the most popular social network in Russia today: over 300 mln users), 40% males and 60% females. 85% of respondents are city citizens with a city population of over 200 thsd citizens.

The purpose of the research is to reveal the audience's attitude to contemporary innovative media technologies during the pandemic of Coronavirus.

The purpose means the solution of the following tasks:

- to calculate the percentage of social instrument use and the functional possibilities of the audience.
- to clarify the audience's attitude to such Internet services and functional possibilities.
- to define the Internet audience attitude to the use of artificial intelligence use while discussing a socially important event.

The research hypothesis is that the audience is acquainted with special instruments and technologies used within the discussions about Coronavirus, but does not regularly use the service data.

We shall describe the most important results.

The first part of questions about the frequency of use of special functional possibilities is presented in the table 1.

Table 1. The frequency of use of special functional possibilities of Internet resources, discussing the problems of pandemic.

Functional possibilities	Frequently	Sometimes	Rarely	Never	% of use
Emoji status used	29%	6%	5%	60%	40%
Special news lines are read (in social networks)	32%	33%	25%	10%	90%
Statistics observed	56%	25%	12%	7%	93%
Special communities/channels subscribed	Subscribed 11%	Was subscribed, but unsubscribed 3%		86%	14%
Participated in flashmobs/used special hashtags (#betterathome, #Thankstomedicos etc)	5%	9%	14%	72%	28%
Communicated with chat bots	2%	3%	2%	93%	7%
Special tests taken	5%	3%	6%	86%	14%
Used special stickers and GIFs to create stories and photos	12%	5%	8%	75%	25%
Sent special thematic presents to friends in social networks and messengers	51%	18%	11%	20%	80%
Read special information messages, except for news lines (recommendations, information about Corona virus	8%	12%	28%	52%	48%

infection etc),					
incorporated in					
social networks					
and search engines					
Followed the self-isolation index	18%	19%	25%	38%	62%
Other	5%	7%	6%	82%	18%

The second part raises the topic demonstrating the Internet audience's attitude to the use of artificial intelligence media technologies while discussing a socially important event (several variants of many are possible, but more than one), each technology was briefly described in the survey. We received the following results, presented in the table 2.

Then there was a question about the efficiency of such Internet services and functional possibilities (they could choose several variants). The respondents think that such instruments:

- proved the implementation of contemporary media resources in socially important events – 77%;
- helped getting a wide range of necessary information within the shared resources (search engines, social networks) – 68%;
- helped emotionally to overcome the rise of the pandemic – 54%;
- reminded continuously about the epidemic, which showed the negative influence on the emotional conditions – 51%;
- showed the interest of large media resources to the problem of the pandemic – 45%;
- distracted from the main activity (study, work, house chores etc) – 28%;
- helped taking self-control during the self-isolation – 23%;
- showed the interest of large media resources to the audience – 23%;
- other – 4%.

Table 2. The attitude of respondents to technologies and instruments of artificial intelligence, used in the sphere of media technologies.

Technology or instrument name	Interesting	Trusted	Profitable	Violating ethics or private life	Never heard about the technology before the survey
Self-isolation index (Yandex)	36%	14%	12%	5%	8%
People verification in video flood (to keep the social distance)	31%	9%	5%	26%	67%

Face check technology (to control the self-isolation regime)	29%	15%	16%	57%	35%
Google instrument "Flu Trends" (to forecast the flu epidemic using search requests)	8%	5%	6%	7%	83%

The results of the analysis described above and other received answers allow drawing such conclusion:

1) The use of contemporary media technologies and media instruments is considered trustful in the solution of socially important tasks and for information support of such events, for example the pandemic of Corona virus.

2) The priority of various services depend on the age characteristics of the surveyed ones. Thus, respondents under 25 often mark the interest to entertaining instruments (emoji status, surveys, GIFs, stickers, presents etc), the audience 25+ want to watch the statistics and the news lines.

3) The respondents with interest percept the innovative technologies, for example, using the artificial intelligence. But the absence of knowledge about the principles of their functioning causes the mistrust to such instruments, especially among the respondents of over 50 and city citizens with low population (less than 500 thsd people).

4) The question of ethics is very acute when the data of users are analysed without their agreement (face check, search requests processing etc).

7. Conclusion

Today, socially important events provoke a sharp rise in the development of media technologies - the greater the event is the faster is the implementation of new services. The most significant potential is with the largest companies (Yandex, VKontakte, Google), having a significant financial, labor, intellectual potential for quick feedback on social demand. The artificial intelligence algorithms are used often, sometimes incorporated in the existing media resources; contemporary media technologies leave the level of discussion of the event for complete inclusion of each representative into the socially important event (for example, "Self-isolation index" Yandex, Coronavirus: choosing the emoji status in VKontakte etc). The Coronavirus pandemic as the socially-oriented event vividly demonstrated the inclusion of innovative technologies into socially essential problems.

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References

- Bechmann, A. (2020). Tackling Disinformation and Infodemics Demands Media Policy Changes. *Digital Journalism*, 8(6), 855-863. <https://doi.org/10.1080/21670811.2020.1773887>
- Egorova, M., Barabashev, A., & Minbaleev, A. (2020). The role of artificial intelligence in a pandemic. *Yuridicheskij mir*, 5, 29–34.
- Evsyukov, V., Sviridova, T., & Bogatenko, E. (2020). Artificial intelligence and coronavirus Covid-19. *Bulletin of the Tula branch of the financial university*, 1, 295–297.
- Fyyaz, M. (2019). Social media and ethos of medical practice. *JPMA. The Journal of the Pakistan Medical Association*, 69(4), 541–544.
- Gabore, S. (2020). Western and Chinese media representation of Africa in COVID-19 news coverage. *Asian Journal of Communication*, 299-316. <https://doi.org/10.1080/01292986.2020.1801781>
- Grajales 3rd, F. J., Sheps, S., Ho, K., Novak-Lauscher, H., & Eysenbach, G. (2014). Social media: A review and tutorial of applications in medicine and health care. *Journal of Medical Internet Research*, 16(2), e13.
- Hodson, H. (2014, March 13). Google Flu Trends gets it wrong three years running. <https://www.newscientist.com/article/dn25217-google-flu-trends-gets-it-wrong-three-years-running/#ixzz6Wo2ctzmp>
- Madzhidov, T., & Kurakin, G. (2020). Computer technologies against Coronavirus: first results. *Nature*, 3(1255), 3–15.
- Nemes, L., & Kiss, A. (2020). Social media sentiment analysis based on COVID-19. *Journal of Information and Telecommunication*. <https://doi.org/10.1080/24751839.2020.1790793>
- Obi-Ani, N., Anikwenze, Ch., & Isiani, M. (2020). Social media and the Covid-19 pandemic: Observations from Nigeria. *Cogent Arts & Humanities*, 7(1). <https://doi.org/10.1080/23311983.2020.1799483>
- Olsen, R., Pickard, V., & Westlund, O. (2020). Communal News Work: COVID-19 Calls for Collective Funding of Journalism. *Digital Journalism*, 8(5), 673-680. <https://doi.org/10.1080/21670811.2020.1763186>
- Saurwein, F., & Spencer-Smith, Ch. (2020). Combating Disinformation on Social Media: Multilevel Governance and Distributed Accountability in Europe. *Digital Journalism*, 8(6), 820-841. <https://doi.org/10.1080/21670811.2020.1765401>
- Tikhonov, K. (2014, March 14). Razoblacheniye Google flu trends: znachat li oshibki modeli google, chto "bol'shim dannym" nel'zya verit' [Exposing Google Flu Trends: Do Google Model Errors Mean Big Data Can't Be Believed]. <https://www.computerra.ru/227832/goolge-flu-trends-fail/>
- Wan, J., Huang, Y., Amaneh Abdel Hafez, A., Dong, D., Cong, Y., Lin, J., & Chen, H. (2020). A Novel Approach Using Social Media to Solve Medical Ethical Dilemmas and Legal Risks in the Emergencies of COVID-19. *The American Journal of Bioethics*, 20(7), W12-W14, <https://doi.org/10.1080/15265161.2020.1782529>
- Yamshchikov, I. (2020, June 4). «Algoritmy ne spyat, ne boleyut, bystro proveryayut sotni gipotez»: kak iskusstvennyy intellekt pomogayet borot'sya s virusom [Algorithms do not sleep, are not ill, quickly check hundreds of hypotheses: how artificial intelligence helps struggling with virus]. <https://rb.ru/opinion/iskusstvennyj-intellekt-virus/>