SWOT ANALYSIS OF INFORMATION TECHNOLOGIES CONTRIBUTION TO WORK ORGANIZATION IN THE PANDEMIC COVID-19 PERIOD[1]

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Abstract

The work presents the result of an analysis of existing information technologies for organizing remote work in the context of the COVID-19 pandemic. As an example, we considered table of eight free available features for seven shareware services that provide communication capabilities, namely, conferencing, meetings, education, and monitoring. The necessary contribution from IT, management, and economic science are presented. SWOT analysis was performed to explain ZOOM Platform popularity. Recommendations were proposed to avoid loss of ZOOM users attracted during pandemic.

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One of the consequences of the COVID-19 pandemic is the transformation of labor relations and the restructuring of enterprises (Ivanova, 2020; Meister, 2020). Now the importance of the product is taken into account, and not the process of its production. When optimizing the costs of the production process, a minimum of human contacts is put as the basis. These trends are seen in education as well (Li, 2020).

The interaction of employees in the labor process is more and more reduced to information exchange. Therefore, the worktime and workplace may be arranged differently. In particular, the large-scale introduction of cloud technologies and virtual services makes it possible to move workplaces into virtual space. Virtual labor organization and virtual control of the result can reduce the number of employees and increase labor productivity, increase the efficiency of the invested capital. Banks are an example of such an organization of work. They were among the first to implement the concept of a digital workspace, introducing electronic payment systems and minimizing the need for direct communication with customers using ATMs and mobile applications.

The effect of the coronavirus has been twofold. On the one hand, the experience of self-isolation has shown that the organization of remote work for a significant part of the team is a completely viable option. You can save on the rental of office space and wasted time and money on the way to the office and reduce the cost of office supplies. On the other hand, many people rightly perceive even minimal protective measures as restrictions on individual rights, especially freedom of movement. Nobody knows how long the coronavirus situation will last. Therefore, no one began to invest large additional funds in the development of virtual tools and systems. On the contrary, existing information systems were used under stress conditions. This led to the ranking and selection of these systems in terms of reliability, simplicity and ease of use. Ultimate overloads reveal the poor choice of even the smallest details of the system implementation, weed out solutions that are not designed for the long term, do not meet all the required standards and have technical flaws. This should be taken into account: many will remain dissatisfied with the result of work during the COVID-19 period and will not

consider options for switching to such systems after the pandemic because of negative experience (Colesnicov, et.al, 2020).

As an example, we analyzed in this paper distant conferencing services that resolve communications requests. Leaders need to hold meetings, site approvals, and other events, teachers need to teach lessons, employees need to exchange information in the process of collaboration, etc. These tools usage grew rapidly in 2020 during COVID-19 (Owusu-Ansah, 2020). For example: ZOOM Platform, growth of 31.5%; Skype, growth of 22.5% (McLaughlin, 2020).

The emergence of this stressful experience exposed many of the complexities in this element of virtual reality, like poor connection quality, inability to download a presentation, etc. Even small details as the ability to upload a photo or create a unique avatar turned out to be critical: if the system offers a limited choice of characters, many similar participants appear during a conference that does create difficulties. The problem of choosing between a commercial platform with increased comfort and free, but with limited options becomes acute.

Table 1. Comparison of 7 free distant conferencing services

Service name	**Skype[1]**	**Google Meet[2]**	**Proficonf[3]**	**CISCO Webex[4]**	**ZOOM[5]**	**Uberconference[6]**	**Oovoo[7]**
Participants	≤50	≤100	≤25	≤100	≤100	≤10	≤12
File storage	yes	no	≤500 Mb	no	no	no	no
Video recording	yes, stored ≤30 days	no	no	yes	yes, ≤40 min	audio only	yes
Time	unlimited	unlimited	unlimited	≤50 min	≤40 min	≤40 min, audio only	unlimited
Need software installation	yes	yes	no	no	yes	no	yes
Support	no	no	yes	yes	yes	yes	no
Screen demonstration	yes	yes	yes	yes	yes	yes	yes
Presentations upload and	no	no	yes	no	no	no	no

demonstration							

[1] https://www.skype.com/en/
[2] https://meet.google.com/
[3] https://sourceforge.net/software/product/Proficonf/
[4] https://www.webex.com/
[5] https://zoom.us/
[6] https://www.uberconference.com/
[7] https://www.oovoo.com/oovoo/

Source: elaborated by the authors

In Table 1, we present a comparison result of several free conferencing services. To evaluate options, services were tested. Some systems are available in both a limited free version and a full-featured commercial version. In this case, only the freely available options are shown.

Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud platform for video and audio conferencing, chat, and webinars, that's why last time ZOOM became the most downloaded conferencing application from those shown in Table 1. The purpose of the study was to assess the SWOT analysis of the use of the ZOOM Platform. A SWOT analysis is a technique used to determine and define the Strengths, Weaknesses, Opportunities, and Threats. A SWOT analysis is an incredibly simple, yet powerful tool to help to develop the problem strategy. The SWOT analysis is an extremely useful tool for understanding and reviewing the ZOOM Platform in making decisions about future directions of using and development of this platform. It involves specifying the internal and external factors that are favorable and unfavorable to achieve the usage of this platform.

The degree to which the internal environment of ZOOM Platform matches with the external environment is expressed by the concept of strategic fit. In this study:

Strengths mean the characteristics of the ZOOM Platform that gives it an advantage over other cloud platform for video and audio conferencing, chat, and webinars platforms.

- Weaknesses imply the characteristics of the ZOOM Platform that place ZOOM disadvantage relative to other cloud platform for video and audio conferencing, chat, and webinars platforms.
- Opportunities refer to the elements in the ZOOM Platform environment that users could exploit to its advantage.

- Threats deal with elements in ZOOM Platform that could cause trouble for users.

Secondary data was collected from research reports, annual reports, textbooks, statistical data and electronic resources, ZOOM Platform publications including scientific papers and many more. As already stated in the background, the study aims to identifying strengths, weaknesses, opportunities, and threats associated with the use of ZOOM Platform as a cloud platform for video and audio conferencing, chat, and webinars platforms and educational tool from the users' point of view. This was in an effort to identify the elements impacting the popularity of ZOOM.

SWOT analysis of ZOOM Platform is presented below in Table 2 and permits to understand why it is so popular at pandemic period.

Table 2. SWOT analysis of ZOOM Platform

Strengths	➢ Simplicity. ZOOM interface is quite simple even for unexperienced users. This implied its wide usage for video meetings and conferences. ➢ Free plan. ZOOM free plan provides a 40 min meeting of 100 participants. The continuation after 40 min limit is no more than start of a new meeting that takes 1-2 minutes. As to author's personal experience, this is quite permissible. ZOOM free plan would be used by a lot of enterprises and private persons. ➢ Video quality. ZOOM video quality is perfect both for translations and presentations. Slides are shown clearly.
Weaknesses	➢ Audio quality. Users claim ZOOM audio quality as unsatisfactory while both audio and video are available for a lot of participants. To avoid this, only presenters get audio on conferences. The audio quality becomes bad if other applications using audio are active; they should be stopped during ZOOM meeting. ➢ Mobile features. ZOOM features on smartphones and tables are restricted. For example, you can see

	on your PC all meeting participants at once while on smartphone or tablet only 4. Recording is available only on PC, etc. ➢ ZOOM was criticized for security problems.
Opportunities	➢ The COVID-19 pandemic presented a good opportunity for ZOOM growth. During the pandemic ZOOM could obtain much more users and provide much more video meetings. ➢ The growth of paid services permitted ZOOM to develop infrastructure, deployed new server and network equipment. Its cloud infrastructure got additional volumes.
Threats	➢ Intense competition means limited market share growth for ZOOM. Competitors are trying to oppose the weak sides of ZOOM with extended features of their systems, like recently added accessibility of Google Meet through Gmail. ➢ Many similar apps give people more choices and imply limited brand loyalty. ➢ Problems of security mentioned before can lead to the loss of many users who doubt the security of their data.

Source: elaborated by the authors

SWOT analysis shows that ZOOM technologic level is quite modern. Most features of ZOOM Platform are actual and satisfy ZOOM users. As to further development, the most actual problem is security and reliability. We could recommend to extend features of free plan.

Conclusions

Investments are required in the development of communication tools for various fields of activity and in training in their use. Great efforts should be made to provide maximum information support for those works that are not fully implemented through a computer or in an office, such as transport, catering, manufacturing, tourism, medicine, etc. Particular attention should be paid to the security and physical vulnerability of IT equipment.

SWOT analysis was performed to explain ZOOM Platform popularity. The analysis showed that most ZOOM Platform features are actual and satisfy users. Recommendations were proposed to avoid loss of ZOOM users attracted during COVID-19 pandemic.

The pandemic has given a powerful impetus to the development of virtual reality. It has become an unprecedented challenge for specialists in the field of IT, economics, and management, putting forward the task of developing new methodologies for the work organization.

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