

Virtual Collaboration

Viola Suhayda

MSc student, Óbudai University, Keleti Faculty of Business and Management,
suhayda.viola@gmail.com

Wu Yue

MSc student, Óbudai University, Keleti Faculty of Business and Management,
w1187892536@gmail.com

Mohammad Abuissa

MSc student, Óbudai University, Keleti Faculty of Business and Management,
mohammadabuissa95@gmail.com

Abstract: *Humans have always created and organized groups to work and learn together to meet challenges. During the centuries, people have become able to cover even larger distances and cooperate with new people. Nowadays, the fast-developing technological system created the era of virtual collaboration, which benefits and difficulties we are still just learning. Due to the current circumstances that the world encounters, it is a priority to implement such collaboration methods.*

In our secondary research, we study scientific articles and research papers to create a broad picture about this collaboration. Moreover, we analyse the global situation and practices of the business and the education system. This research not only introduces and explains virtual collaboration methods, but also gives an overview about its impacts. Our main purpose is to facilitate this type of collaboration and to provide best practices for utilizing it in the most efficient and effective way.

1 Introduction

Nowadays, teamwork and collaboration play an essential and indispensable role not only in our personal lives, but also in the educational and professional fields. This cooperation allows us to exceed our individual capabilities and opportunities and also makes it possible to overcome many mistakes by helping each other. In this way, we can constantly set new, more difficult and complex goals, as well as rise to unprecedented heights. Due to the objectives and goals of globalization and also to the fast-changing and developing technological system and background, the era of the virtual collaboration has arrived. These days, with the proper technical devices and support, we can reach anyone at any time. In just a few years, virtual collaboration has gained key importance – especially in this situation – in our lives, due to its innovative nature and wide-range of possibilities.

In the beginning of our research, we formulated the following aims and objectives:

A1: Our first aim is to create a comprehensive and complex picture about the virtual collaboration and its impacts.

A2: Our second aim is to analyse the current situation of both the business and education systems.

O1: Our first objective is to analyse and collect the most important advantages and disadvantages of virtual collaboration.

O2: Our second objective is to provide best practices for utilizing this collaboration in the most efficient and effective way.

2 Secondary research

In our secondary research, we study international scientific articles and research papers to create the above mentioned broad picture about this collaboration. Due to the nature of this topic, we have always tried to use current and the latest available material.

2.1 Basic information and platforms

Collaboration is a fundamental factor with emerging importance not only within the organizations, but also in the education system. It is an intentional process that is aimed to create something new, or to solve a specific problem. It usually requires decision making of participants, thus enhancing common responsibility taking [1].

This cooperation process usually have some kind of “routine steps”, as first we need to generate ideas individually (or in pairs), then we can develop and build on those together as a group and finally we are working on the defined tasks again alone. The more complex the task, the more important to have this private thinking time [2]. It is important to truly work together and not just work “next to each other”, as this way we can be more than just a sum of individuals and become capable of extraordinary acts.

In simple terms, virtual collaboration involves all collaboration and team activities conducted via an online medium. The participants are usually geographically dispersed, but for example these days – during the restrictions aimed to moderate the effects of COVID-19 – companies encourage online meetings and schools are organizing online final exams and matriculations even if all the participants are in the same building. Due to the outbreak, we are forced to slow down and change the pace of our whole lives, like working from home office, meeting only family members and becoming conscious and self-sufficient [3].

This collaboration has three main groups, audio-, videoconference and computer-mediated communication methods. Audioconferencing manifests mainly in the form of phone and conference calls. The mostly used platforms are WhatsApp, WeChat (Work) and the ones that we list in case of videoconferencing. Video

conferencing is gaining huge popularity nowadays - mainly within organizations - as the bandwidth of the Internet and the capabilities of the devices are developing rapidly. The most well-known and used platforms are Skype, GoToMeeting, Webcast, Microsoft Teams, Zoom, Viber and Facebook Messenger. Finally, computer-mediated communication methods are all data exchange activities that are taking place with time delay. These can be emails, data shared by the help of servers and software, instant messages and so on [4] [5]. The platforms that are mainly used are the followings:

- emails: Outlook, Gmail
- data sharing: SharePoint, Google Drive, Dropbox
- instant messages: Facebook, WeChat, WhatsApp

As there are countless such platforms, in these lists we only collected the commonly used ones with the highest popularity and impact. All of the above mentioned (and not-mentioned) platforms have their own opportunities, advantages and disadvantages that we need to consider. This is why it is important to first define the exact needs and choose the proper platform only afterwards.

2.2 Benefits and obstacles

As any form of cooperation, virtual collaboration also has its own benefits and obstacles. In this part of the study, we collect and explain the main ones. In case of the benefits, the most important factor is that virtual collaboration enables teamwork at any time (real-time) and any place, so we can save both time and money on the organization processes. Also, due to the same reason, this collaboration broadens the reach, as we have the chance to meet people, we otherwise would never. Moreover, it is far easier to record the audio and video conferences and check back later if needed. Furthermore, sharing information takes only a few seconds and will be immediately available for everyone. Another benefit is that many platforms give the opportunity to edit the files and material at the same time and also record the changes if needed.

In terms of the obstacles, the main one is to find and use the proper platform. Also, we need to consider the existing infrastructure of the company or school that may narrow the opportunities. Another obstacle is that this kind of collaboration is always accompanied with a higher level of anonymity due to the lack of personal contact, thus gaining the trust is more difficult. Moreover, during a virtual collaboration in-group and out-group phenomenon can appear much easier than in case of face-to-face cooperation. These are the reasons why it is harder to motivate each other. However, virtual collaboration enables communication with many more people than we could otherwise, but it can also cause the feeling of being isolated.

We can state that there are almost as many obstacles as benefits of virtual collaboration, but we still need to use this kind of cooperation, so the key is to learn and practice it. Fortunately, many obstacles can be overcome by paying

attention to the previously mentioned purposes, capabilities and most importantly to the participants.

3 Situation considering business

In this and next part, considering the situation of the business and education system, we collect, introduce and also explain our connected personal experiences based on the fact that all of our authors are working during the study for an MSc degree in the same university in Hungary.

1. Time is saved, money is saved. During the COVID-19 epidemic management time in Budapest, most individuals' work is done at home. Companies do not need to pay rental fees or other fixed costs, thus saving money. For example, a start-up corporation does not need to afford the rental fee of a physical office as it just starts business. And the money on public resources for members is also saved. Common companies can also save much fixed fees, like training costs, utilities and management fees. As for members, we do not need to spend even several hours per day on the round-way routine, meanwhile the traffic costs are saved.

2. Work can be implemented more efficiently. A task leader can organize a meeting or task feedback as soon as possible using media tools. And it is very convenient to get everyone's time schedule and no need to consider the problem of physical distance and time of members. Members can see everyone's task deadline and content easily and clearly just by opening an app on their smartphone or notebook. A task leader can pick a meeting time with minority members very freely based on the flexible and convenient schedule. Sometimes a task can be done well even in a few minutes, which is much more efficient than physical work style.

3. Less possibility of conflict, less joint and more possibility of harmony. Nevertheless, sometimes it is hard to avoid conflict and misunderstanding with colleagues or managers. When work and tasks are divided by emails, data sharing and instant messages methods, people can not react immediately and have to have time to think passively, even though they are in an excited mood. After calm thinking, some misunderstandings can be solved before putting it forward to others. Usually, when we write something, we try to be polite and sometimes the emails, data sharing and instant messages methods cannot express bad mood as vividly as face appearance, hence the virtual business can not annoy others like speaking words. However, it means we, members, can not feel each others' real emotion, so we are just unemotional workers like robots to some extent. We can not know each other more, and we just try to avoid conflict and finish the task. In other words, it does not support team building and creating group passion.

4. Good opportunity to record the task process and feedback. Every task delivering and training context are exposed to everyone in the common apps and everyone can share and find the task sponsor. It is really easy for everyone to track, reflect and analyse their work process and results.

5. Less feedback from communication. When we consider real physical talk, sometimes we can create innovative ideas by getting some feedback from the speaker. Instead, in the case of virtual business we are just facing a screen, like watching a movie, so we cannot get more information stimulated by a counterpart than during real face to face collaboration.

To summarize, virtual business is more flexible and convenient, but sometimes it is better to meet colleagues face to face to improve team passion. The biggest problem is the influence of the bad quality of the Internet, which can waste a lot of time and enthusiasm. Proper combination of virtual and real businesses can be the perfect way.

4 Situation considering education system

The COVID-19 pandemic has released the largest unpredictable influence on the education system after the post-war era, which affected over 91% students (more than 1.6 billion) who have to transfer to online courses. For example, during the 30 days between April and May, there are 10.3 million enrolments in courses on Coursera, up 644% from the same period last year [6].

1. Virtual education releases students' physical pressure. In our university all of the international students have to live in a student hostel, which is so far from our faculty. It means every day we need to spend approximately two hours on the round-way road. Staying at home to attend lectures just costs one minute to switch on a notebook, computer or even smartphone.

2. Final exams format is easier. Final tests and exams format could be a presentation and essay, instead of a real face to face exam. It can lower students' anxiety and pressure of meeting a formal and serious personal exam. Therefore, we can avoid the unpredictable difficult questions and avoid the mistakes caused by nervousness when we are encircled by professors and colleagues.

3. Easier to pass the necessary exams. When we have to take an exam for some special courses that consist of many calculations, instead of memorizing them, we can use a sheet of the necessary formulas. Also, we can use for example Microsoft Excel to write these formulas in advance, to help us do the exam. So, we do not feel much pressure to remember the exact formulas, instead, we just need to know which formula we need to use in the particular question or exercise. On the other hand, some students may not understand the reason why they use that exact formula for the question, they just automatically use it.

This kind of study style towards professional knowledge is unhelpful or even harmful for a master student to conquer his or her own work task in the future, but it is really relaxing and easy to pass at present. In other words, this style taught us how to find the essence of solving a question in a really short time and how to use efficient tools to work out our difficulties.

4. Studying can be more efficient with various kinds of tools. As for the students whose master degree (teaching language is English) is so different from bachelor (not English) and English knowledge is not perfectly good, mainly

because of the poor vocabulary. It is relatively hard for them to follow the professors in lecture and even sometimes professors and classmates are very interested in their experiences and home country. In these cases, they have to reply or answer questions, but it can make them absolutely too nervous to think, or they feel more nervous and not confident due to the frozen air and silence. In virtual lectures, all of these anxieties from real people disappeared. Furthermore, these kinds of students can gain the required knowledge more efficiently, because they can get familiar with the meaning of the strange words as soon as possible by automatically translating them in just one second. Also, everyone can search for useful information to understand some professional terms amazingly quickly.

5. Higher education, wider scale. As almost each university offers the online courses beyond campus walls to global learners, students can study more resources from the worldwide famous universities, such as Harvard University, MIT, Stanford University and so on. Meanwhile, universities can also work together to launch a common credit or grading system for virtual learning spaces. They are able to personalize education for millions effective outcomes by advanced AI-powered adaptive learning [7].

6. Time and money value are improved via commoditized courses for both students and universities. Colleges can commit more resources to research-based teaching, personalized problem solving, and mentorship via commoditizing courses. Thus, campuses can facilitate social networking, field-based projects, and global learning expeditions that require face to face engagements. At the same time, students can have more resources at their disposal and use the precious time for electives, group assignments, faculty office hours, interactions, and career guidance, something that cannot be done remotely - via commoditized courses online at any convenient places and time, but under a cheaper cost - instead of four full years at campuses[8].

7. Our reaction and attitude to study are much closer to real situations. Sometimes we are not motivated enough to study, so we just spend our time with relaxing. This situation is similar to that, even though we attend classes, we do not think about them at all. It can happen that students join the lectures, but put it on mute to be able to do anything except studying. Also, sometimes students mute their own microphone against a professor's question, just like during physical lectures when they want to keep silent.

In short, virtual education makes students feel much relaxed and comfortable, but not helpful to improve and practice real life skills, which are necessary in the future work and study land. Moreover, it is especially difficult for those students, who lack professional knowledge, for international students studying in English and not good at it (but want to improve) and for other students, who fear social interaction.

5 Best practices

In general, managing teams can be considered as a challenging process, because team collaboration is the key element of success for projects, despite their

complexity and size. Virtual collaboration, due to the current situation of COVID-19 epidemic, has become the international trend for team collaboration in order to keep every project within its proposed schedule and outcomes.

Alignments and accountability are critical parts for successful virtual collaboration projects. According to Cambridge dictionary, alignment is an arrangement in which two or more things are positioned in a straight line or parallel to each other. It involves schedule and task orders for projects. Accountability is the fact of being responsible for what you do and able to give a satisfactory reason for it. In other words, assigning tasks for team members and holding them responsibilities to accomplish their tasks properly. Alignments and accountabilities should be given so much attention as they will result in successful projects progress and outcomes.

Virtual collaboration is nowadays the driving force of sustaining global economies and minimizing losses. There are many practices observed and proven by our personal experiences, in education and business, as the most efficient practices.

For educational purposes, recorded lectures using E-learning systems such as Moodle and EDUonGo then prescheduled time for consultation or questions, helped the students to review lectures any time and day during the week before the meeting time, no matter their region time zone. For team collaboration, students were arranging meetings by themselves and asking professors for preliminary feedback about the conceptual ideas of the projects and whether to proceed with the ideas or not. It is quite promising that this form of communication and cooperation can be formed into a really interactive learning process that can help early stage students to evolve efficiently in knowledge sharing through creative games, apps or some digital drawings [9].

For business purposes, developing share points helped to continue working consistently and smoothly on project progresses by setting weekly and day to day meetings. Assigning a meeting administrator, who is professionally trained with clear aims about each meeting, prioritizing these aims with items that require more discussions and attention to reach consensus to make better decisions. Evaluating meetings continuously by members beside recording the meeting for review and developing [10]. Reporting on status as a report on the status of their tasks is essential to keeping the project moving toward a successful conclusion. Specialised professional IT teams in charge of adopting these share points and online platforms can be considered as the base for successful adoption of virtual collaboration projects. Finally, continuous learning, observing and rapid response besides reporting systems are the key elements for prosperous projects in workplaces.

Conclusion

All in all, we can conclude that virtual collaboration is the new leading form of communication and cooperation, which globally proved its efficiency and importance in the recent months both in education and business fields. It helped in the continuity of learning processes in schools and universities worldwide. It also

supported sustaining global economies by keeping projects alive through online coordination and follow-up through monthly, weekly and daily meetings.

Virtual collaboration has many benefits and also some obstacles, previously mentioned in the paper, so it is really important in the future to minimize these obstacles. Moreover, it is key to become familiar with this collaboration and to develop the most favourable practices and perhaps adopt them in a wider range. This can be done by implementing R&D processes in such a way that companies and universities can maximize the utilization of the cooperation for the greater benefits of our education and business systems. Virtual collaboration enables us to preserve many financial resources for other uses, which has impact and importance in the sustainability and growth of our economies not only over the next few years, but also in the long term.

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