

UNIVERSITY OF TARTU

Faculty of Social Sciences

School of Economics and Business Administration

Gleb Gomankov

**Opportunities and challenges of international virtual teams
from managerial perspective**

Bachelor Thesis

Supervisor: Marge Täks,
Lecturer at University of Tartu

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This paper conforms to the requirements for a Research paper

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(signature of supervisor)

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I have written this paper independently. Any ideas or data taken from the authors or other sources have been fully referenced.

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(signature of the author and date)

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Introduction

Virtual teams are becoming more and more common. Nowadays, technologies have advanced enough to allow optimal conditions for collaboration for people from different parts of the globe. The online environment became an alternative to an office for many employees. The opportunities, provided by virtual teams, are attractive to many international companies of different size but, unfortunately, with great opportunities come great challenges. The topic of managing a geographically dispersed online team is of high interest from entrepreneurs.

The process of establishing a new complicated entity such as a virtual team is usually followed by many challenges. For example, dealing with differences in time zones became a routing work for managers (Zneimer, 2018). Software and hardware issues remain relevant, and technical progress creates challenges for the companies (Teece, Pisano, & Shuen, 2003). Virtual collaboration is cheaper than face-to-face operations, more flexible, and more convenient because this type of collaboration is characterised by time cost reduction and reduced workplace costs (Horwitz, Bravington, & Silvis, 2006). Digital space can bring together experts from various fields and countries to work on a specific project. Lerner (2015) claims that this opportunity gives tactical advantages to companies. Dulebohn and Hoch (2017) stated that virtual teams' challenges are related to lack of engagement and dedication, trust issues and difficulties in regulating the communication. Another drawback that they pointed out is related to cross-cultural conflict among the employees. Managers of both the real-life teams and the virtual groups have to be ready to deal with conflicts, caused by cultural differences (Ting-Toomey & Oetzel, 2015).

Challenges related to cultural differences are still relevant even in the digital environment. They have both positive and negative potential impact on the overall performance of both the real and the virtual company. According to Deloitte Insights, the culture of the employee might be considered as an advantage while competing with other market players. (Kaplan, Dollar, Melian, Van Durme & Wong, 2016). Brandt, England, and

Ward (2011) claimed that cultural differences might lead to unintentional conflicts between employees because they act in a particular way, which is acceptable in their culture but is not appreciated in many other. All the minor and major conflicts raised upon the topic of cultural differences might cause the problem with cohesion. Virtual teams can suffer from lack of dedication, and if the collective struggles to find common ground due to the non-identical values or beliefs, its effectiveness decreases. (Hartman & Guss, 1996)

With all these traits of a virtual team, it must be challenging to find the right approach to such a complicated structure. Many authors tried to analyse a particular part of online collaboration and expected to find the key to success by improving a separate factor of the virtual team. However, there is a lack of works that represent the manager's or the team leader's perspective of the multicultural virtual team management as a solid entity. The usage of the virtual team has both negative and positive sides that may be divided into categories. The manager or the team leader has to take into account numerous factors that may change the result of workers collaboration.

This thesis will aim to understand the challenges and opportunities of the virtual teams from manager's or team leader's perspective. The final goal is to understand the limitations of the new opportunities and collect a number of recommendations for solving the problems. The work will focus on four categories of challenges and opportunities, identified by the author.

To achieve the aim several tasks has to be accomplished:

- Compile identified challenges and opportunities of the multicultural virtual teams from relevant articles and divide them into categories.
- State the expected behavior of managers to solve the occurring issues for each category.
- Compare the findings with the actual experience of the respondents who have been managing a virtual team.

- Conclude by proving the relevance of each category's challenges and providing opportunities for managers of the multicultural virtual teams to solve them.

The process of gathering data will consist of collecting materials from both online and printed resources and dividing them into categories. Both academic articles, research papers, and online manuals will be used as the resources. All of these sources will be used because the online environment is constantly developing and to keep up with the evolving demand, a manager has to use all the available resources. In addition, in case of the online environment, many instructions are recent and were only published on the web pages. The author of the thesis decided to use Lerner (2015) and Link, Sulakatko, & Meriloo (2016) works as the core base for identifying the categories. Both of these papers have been researching virtual team collaboration from different perspectives and have discovered different challenges. However, they were aimed at a specific context and were studying virtual team collaboration from a strict angle. This work will try to represent things from a manager's or a team leader's point of view. For this work, a manager and a team leader are synonyms as the tasks of controlling and moderating the teamwork are the same for both of position.

The main sources of data will be related to the problems that a manager might face while working with virtual teams and the solution that has already been used to deal with those problems. The empirical part will consist of interviews with people, who have experience in managing the virtual teams. The questions will be formulated based on the results of gathered materials for the categories of challenges.

Keywords: virtual team, online management, online collaboration, challenges, globally dispersed team.

1. The identified categories that affect the virtual team

1.1. The virtual team concept

One of the core terms of this research is a "virtual team". The global virtual team or geographically dispersed team is a concept that started to be built at the time when the Internet collaboration started gaining popularity. The basic definition of the virtual team or geographically dispersed team is "*A group of individuals who work across time, space and organizational boundaries with links strengthened by webs of communication technology.*" (Virtual team, n.d.). According to Olariu & Aldea (2014), virtual teams only exist because of information technology. They brought another definition of the virtual team, according to which, a virtual team is a group of people that ignored geographical and organisational barriers and uses technologies to work on the company's projects. The global virtual team might be called as a structure within the company that has higher flexibility and dynamic but, at the same time, suffers from socio-technical conflicts (Harvey, Novicevic & Garrison, 2005)

According to researchers, in their essence virtual teams are groups of professionals, which members are geographically dispersed and heavily rely on online communication (Hung & Nguyen, 2008). There can be different types of virtual workgroups. The first one is Local virtual team. The one company's employees usually represent this kind of team. Another example is the Global virtual team. Members of this team can be located in different countries and work on one or several companies at once (McConnell, 2010). Vast distance is no longer a barrier for employees, as they do not need to be present in the office. This fact allows companies to gain the strategical advantage by hiring specialist in different fields from abroad. (Lerner, 2015) The new strategies of doing business have been presented and, according to one of them, it is more reasonable to allocate people to projects based on their expertise, than their current location. By doing this, organisations can manage the flow of the working force and send the most qualified specialist to deal with the most complicated cases.

It allows to reduce workplace expenses and, also, it gives an opportunity to increase productivity by getting rid of travel or frequent relocating. (Vinaja, n.d.) These benefits are impressive, and they are attractive to both small and large companies but the list of advantages that virtual teams have even more bonuses.

In his work, Lerner (2015) has listed the strengths of multicultural virtual teams, and his points match the definition perfectly. First, companies get access to the international labour market and can find the most talented specialist from different countries. Second, the global workday equal to 24 hours, which may give an incredible advantage to the company. Finally, Lerner claims that multicultural virtual teams support the globalisation of trade activity by providing companies with the flexibility to be more competitive and responsive to local markets.

Based on all the characteristics of the Global virtual team, it is possible to state the following definition of this phenomenon: A global virtual team is a group of professionals that are united by online communication technologies, which allow them to ignore geographical, organisational and time-zones barriers while working on the project.

The next step will be to get deep into each of these categories and see how modern managerial guidelines reflect on the relevance of the issues, listed under each category. It is necessary to mention there are several aspects that belong to several groups. It is possible to place them in between two or even more categories. There is no strict borderline and interpretation may vary.

1.2. The categories of challenges and opportunities of the virtual teams

1.2.1. Communication in virtual teams

Communication, in general, is the foundation of any teamwork. The ability to present information to the colleagues in an appropriate way is of the great focus, and its role is hard to overestimate especially in case of virtual teams. Factors that limit communication process, such as the language barrier, have a strong influence on the teams' productivity (Lerner,

2015). The language barrier can be defined as a communication barrier resulting from speaking different languages. It usually causes misunderstandings and, as a result, the inability to communicate accurately (Language barrier, n.d.). Many types of research including those related to virtual teams' performance have pointed out the importance of the language barrier (Harzing, Koster, & Magner, 2009; Madera, Dawson & Neal, 2014; Giovannovi & Xiong, 2019). Hung and Nguyen (2008) tested the significance of this challenge. They concluded that the lack of proper explanations in addition to misinterpretations has a strong impact on the performance indicators of the team. The most important conclusion they made is that misunderstandings and misinterpretations affect both foreigners and native-speakers.

Tenzer and Pudelko (2015) found out that the usage of slang may change the whole meaning of a particular sentence. Moreover, the usage of slang might put a non-native-speaker in a situation when he or she would not be able to understand the order or a command. Considering challenges related to slang are essential for a manager, especially when the communication is happening in virtual environment, and different acronyms or typos have a stronger impact. Using slang may lead to an emotional conflict caused by the fact that foreigners would feel embarrassed with their poor vocabulary or other conditional flaws. To avoid this type of conflicts, strong speakers have to exclude slang from their speech. (Neeley, 2015). A dissatisfied employee has a lower motivation and may negatively affect co-workers. (Halkos & Bousinakis, 2010) It is crucial to pay attention to language barrier issues in case of multicultural virtual teams, where employees cannot find suitable words because of their cultural background. The perception they got by growing up in a particular environment may influence their actions caused by intense emotions, and it is not reasonable to escalate these kinds of conflicts. (Von Glinow, Shapiro & Brett, 2004)

At the same time, the language barrier can also become an instrument of manipulation for employees, who do not want to change their attitude and behaviour. The explanation said

that the manager gave the wrong instructions while the real reason was the unwillingness of an employee to follow these instructions. The main excuse for both parties of this argument was the language barrier. (McIntire, 2014).

Overcoming language barriers has been a common problem for managers of multicultural teams for an extended period. Numerous attempts to create a particular manual for solving these problems were made. One of those, produced by Cratis (2016) claims there is a list of tools that help to deal with differences in language proficiency — found among them, usage of everyday language, flexible translating tools, proper and detailed explanations that would minimise chances of misunderstandings, classes to improve employees' language skill, repetitive commands, etc.

Tenzer, Pudelko, and Harzing (2014) have claimed that managers have to expand the knowledge of the employees about communication and language barrier problems. The suggested is to explain the problem by practicing meta-communication. That means to describe the particular traits of languages and to repeat the same material using synonyms or simplified verbal constructions.

To sum up, multicultural virtual teams have to face the language barrier challenges. What makes it more difficult to deal with them in the virtual environment is the fact that there is no actual real-life contact between the workers.

Another crucial part of communicating process is the communication structure. The structure of communication is essential especially when certain boundaries are hard to overcome. Virtual teams have to work in an online environment and there certain boundaries that influence the communication process. In the case of the virtual team, the face-to-face conversation does not exist, and the employees have to communicate via various web-resources. It is crucial to set the right structure of communication in the organisation to avoid chaos, uncertainty, and overlap of responsibilities.

Barteit and Dennis (2014) have discovered that communication in teams is affected by genre rule. According to them, genre rules are the social structures used to lead the way communication occurs. Each member of the group has its role that follows the genre rules. Social structures are not as crucial in the virtual environment as they are in real life. However, the virtual team member has the same roles; the only thing that may vary in their attitude to the roles. The competence of some participant might be higher than the expertise of their colleagues. (Jones, 2017). In that case, the roles might change quickly, and there might occur a conflict over dominance. This fight can escalate into an interpersonal conflict between two or more employees.

As for the actual interpersonal collaboration, it might seem like virtual teams are granted with more autonomy, and their members are less interdependent as they do not have to face each other in real life. Unfortunately, it is not so, and virtual team member heavily depends on each other especially when doing small projects. (Halverson & Tirmizi, 2008).

The wrong set of communication channel might destabilise the workflow of a whole virtual team. Online chats of big virtual teams consist of thousands of messages. Online chat may be flooded with text-messages on different topics, mainly if a group use only one channel. In that case, it easy for an employee to miss part of the vital information. (Bergiel, Bergiel & Balsmeier, 2008). The problem of asynchronous communication is that it does not match with the tasks that require an immediate response. Some questions and orders may vanish in the constant wave of chat messages. (Thorne, 2018). In addition, asynchronous communication needs a clear structure to be efficient, and it is better not to expand the network of online messengers too far. Otherwise, it would be impossible to track the workflow.

Constant communication and weak structure of the communication channels may lead to the situation when employees will lose their willingness to share knowledge and information at all. The working process is not only about doing the job but also about

developing yourself. If colleagues will not cooperate and share their knowledge, the personal progress of the team members will not satisfy them. It will severely damage the job climate and may affect real productivity (de Vries, Van den Hooff, & Ridder, 2006).

Speaking of digitalised teams, Eisenhauer (2016) gives five reasons with virtual communication might cause barriers to understanding. He claims that online chats have many disadvantages in comparison to real-life face-to-face communication. According to him, chats often miss context due to external factors such as distraction of the user, problems with devices and even weather condition. Body language and emotional content also have to be excluded from online chats. According to Eisenhauer, It is easier to argue online when an opponent cannot get physical.

Another big problem is a delay-triggered misunderstanding. It is connected with asynchronous communication. People may have online status, but it does not mean that they are paying attention to the chat. As a result, some messages might be received with considerable delay, and this affects productivity negatively.

The key to making digital communication as user-friendly as possible lies beneath business ethics. Messages must be short and informative; the long text has to be sent via e-mails, conversations must have logical endings and users have to follow the topic. Lyons, Priest, Wildman, Salas, and Carnegie (2009) said that there are different strategies for controlling communication in an organisation and they consist of several correlated steps. They claimed that the most feasible way to organise communication inside the virtual team is to set the rules and explain the expectations for the employees as well as define the meaning of communication that will be used and how those programs should be used. They also pointed out that the team leader has to monitor the online interaction between the employees to notice any trending that may lead to a potential conflict. This part of management is crucial because according to Ferrazzi (2012) task-related conflict in the virtual team can quickly

escalate into the relationship conflict due to the lack of face-to-face conversations. The conclusion is that the team leader has to be monitoring the online chats of the team regularly.

From all of the sources listed above, it is becoming obvious that communication is one of the most important if not the most important part of the team's collaboration. The fact that in the virtual team all communication is limited by online services, makes it even more influential in case of the virtual teams. The structure of communication is an essential part of the team working in a virtual environment. Employees have to be aware of their roles and responsibilities. The manager should ideally create a network of online platforms that will be used for different purposes. One chat is not enough for a virtual team. There must be cooperation between colleagues outside of the common group-chat. It will help to build interpersonal relationships, and it will also provide an opportunity to share knowledge. Moreover, online chats have to be moderated, and the manager has to keep an eye on any cases of asynchronous communication because this is how crucial pieces of information might get lost.

To sum everything up, here is the list of recommendations for managers of the virtual team that can be made, based on the identified challenges and suggested solutions:

- The manager has to explain the problem of the language barrier to the team members and make it clear that it can be avoided by proper descriptions and usage of synonyms.
- The manager has to explain that the best way of communicating is to avoid slang, idioms, and complicated structures in your speech. The international team should speak the most simplified version of the language.
- Instructions and documentations have to contain simple language as well. Ideally, there should always be an option to explain the most complicated parts of the text by using synonyms.

- The manager has to keep an eye on any conflict situation happening in an online chat. Personal conflict should be resolved fast and preferably outside of the working environment.

1.2.2. Cultural difference's role in virtual teams

Cultural background is one of the things that influence a person's decisions. Based on the personal experience and traditional approaches, common in a particular environment, a person can perform in a way that is different from what is expected from him or her. The differences in cultural perception are important as they may influence the group work. Riedl, Gallenkamp, Picot, and Welpel (2012) claimed that communication has a strong impact on how representatives of different cultures collaborate. They suggested that people from individualistic cultures get more benefits from richer communication. They also suggested that the main reason for that is the absence of group understanding and lack of cohesion.

Difficulties in cross-cultural collaboration are negotiable and one of the aspects that should not be ignored is behavior adaptation. Anawati and Craig (2006) researched cross-cultural behavioral adaptation in virtual teams. Their findings show that socialising in a dispersed team may meet several barriers such as strange humor, non-constructive criticism, slang, jargon, and unfamiliar acronyms. This part is very similar to the "Communication" category. However, Anawati and Craig's work included also religious factor and usage of idioms, which can be qualified as cultural aspects.

Speaking of religion, Wu (2009) has mentioned that religion affects the way people treat time. This statement is fair because various religions have their own celebrations and holidays that may also affect the working days. Lee (2014) says that some religious practices might cause conflicts inside the virtual team, however, the online leader should not prevent employees from following their traditions as long as it does not affect the others. What is more, Lee said that the interaction between the representative of different religions may actually increase the level of cohesion between the colleagues and have a positive impact.

According to Lee, religious diversity, as well as the diversity of expertise among employees can become an advantage if it has been approached from the right side.

In his paper, Lerner (2015) has indicated the problem of gender inequality inside the virtual team. He did not research this particular problem because it was not his focus, but he insisted on the importance of this issue and referred to it as a challenge caused by differences in cultures. These days the problem of gender inequality remains one of the most discussed and yet still unsolved. The United Nation Development Programme has been collecting the data related to this topic, and their report shows that a considerable number of countries suffers from gender inequality (GII, 2017). According to Lamson (2018), there are differences in the attitude towards work when it comes to the gender question. According to her, women are more focused on teamwork and their motives are different from male workers, who are seeking for influence and recognition. Furumo, Buxton, and Higa (n.d.) found out that males tend to be social loafers in virtual teams and usually dominate in conflict management. They also concluded that women more often rely on building relationships and maintaining communication.

Muethel and Hoegl (2010) concluded that power distance is an important factor in virtual dispersed team. According to them, it has both cultural and societal roots and it may lead to the situation when team members will fight over domination because they can see the power hierarchy in the team.

Culture and gender issues play an influential role in virtual teams. Managers can diminish the number of conflicts caused by culture by promoting and encouraging employees to follow the rules of the corporate culture. At the same time, the team leader has to respect other people's beliefs and principles. The gender question remains an outstanding aspect of the cultural differences. Inequality in performance and attitude may influence collaboration online in a negative way. Representatives of different gender might approach tasks from opposite perspectives and hence have different methods of dealing with the challenge.

Gender issue might be connected to the cultural issue as in some cultures the inequality is more obvious. Since the virtual environment ignores the geographical barrier, one team may have participants both from very conservative pro-masculine culture and a member from the state where the rights tend to be more or less equal. In the case of virtual teams, corporate culture has a weaker role and if the set of rules will not regulate the cross-cultural collaboration, than gender question may cause serious conflicts.

Based on this information, there are several recommendations for a manager:

- Diverse labour resources with different expertise and different cultural background might become an advantage but the manager has to find the right approach to each member.
- Any fighting over dominance should be avoided by setting the hierarchical order where a manager or a team leader has the highest power and others are equal.
- Social loafing must be avoided disregard of the gender. The manager has to motivate the virtual team members to work productively.
- Religious traditions should not affect the workflow in a negative way. That is why the good idea for a manager is to take into account possible religious celebrations while scheduling the project.

1.2.3. Trust issues and building trust in virtual teams

In fact. It is hard to define trust. According to Choi and Cho (2018), trust is represented by a psychological state that assumes that the other will not betray the common goal in order to increase personal welfare. Trust affects overall collaboration inside the team and has a direct impact on the outcome. In their research Cheng, Fu, Sun, Han, Shen, and Zarifis (2016) concluded that the trust level of the members of the heterogeneous team decreases as the time passes. They also found out that the groups, where all participants have the same cultural background, on the contrary, develop trust and make it more stable as they interact more. The reason for that is that common origins and values make the working

process smoother in case of the unicultural team. In their research, Choi and Cho (2018) tested several factors that affect the trust in a virtual team and they got a number of important conclusions.

The interpersonal trustworthiness depends on the positive evaluation of the members' ability to integrate and contribute to the teams' goal. That means that people trust others based on their own subjective evaluation of others' capabilities

Common goals and a high level of dedication to them also increase the trust level of the team. When people are focused on the same goal and they are creating alternative ways to reach the goal, they tend to trust each other more.

Another notable conclusion says that the systems' design and performance affect trust. It might be the outcome of the rational method of dividing the responsibility according to employees' competence.

Teams that have to deal with tasks, which require a higher level of competence, tend to have a higher level of trust than the teams that deal with simple tasks. This can be explained by the fact that complex tasks demand more collaboration and detailed expertise so workers have to communicate more frequently.

These results show that collaboration and cooperation play a great role in forming trust (Choi & Cho, 2018). The value of communication between the virtual team members cannot be overestimated. It is fair to say that trust depends heavily on communication especially when dealing with virtual collaboration. In their work, Gibson and Manuel (2003) claimed that communication is the key to build trust and they identified the main reasons for this. Firstly, constant communication can recognize the differences among the team members and highlight the conflicts that may occur before it became a fatal issue. In addition, team members need to get a picture of their colleagues in order to understand how reliable they are and who would they trust more. It helps when it is time to divide responsibilities for the

projects. Tenzer and Pudelko (2015) claimed that constant interaction makes it easier to learn the differences between the cultures of the workers and find the common ground.

The list of tips that has to help in building trust in multicultural teams consists of several essential steps. Found among them is setting clear rules and obeying them. This step has to prevent any intercultural conflicts related to workplace behavior. It also helps to build the trust by creating a situation where everyone is following the same set of norms where deviant or irresponsible behavior will be punished so everyone has to deal with their parts and contribute according to their role. Another step that helps with trust is building personal bonds. The core idea of this step is to make employees finding the common ground. Various cultures have different approaches toward building a friendship and it might take time before the relationships will be made but when the group members find commonalities, it gets easier to build trust between them (Malinsky & Gundling, 2016).

Paul, Drake, and Liang (2016) have been researching the role of trust in multicultural virtual teams. The results showed that project coordination is crucial to building trust in the online environment. Virtual team members have no physical contact and that is the reason with it takes more time to build individual trust for them. Trust forms cohesion inside the team, which is generally beneficial for a company. (Lilian, 2014). Nevertheless, the lack of trust and overdose of it may lead to idleness and destroy the cohesion. Team training also helps to maintain trust or to build it in the very beginning. Face-to-face conversations where team members would share their interest and their beliefs are also helpful but since all meetings occur in digitalized form, the best possible option for that is using Skype conferences. The knowledge sharing process is what helps team members to build personal bonds, and this especially important in diverse global virtual teams (Pinjani & Palvia, 2013). It is very important to create an opportunity for people to communicate synchronously in order to prevent breakdowns related to asynchronous chatting (Hacker, Johnson, Saunders & Thayer, 2019). Malhotra, Majchrzak, and Rosen (2007) also pointed out that asynchronous

communication and its frequency should be considered as the bell for the manager. They recommended organize an online conference and clarify all the questions and disputes. By doing this regular "check-up", the manager reduces the tension inside the team and makes the working environment friendlier.

Building trust in a virtual environment is challenging, especially when it has to be done for a multicultural team. The long-term collaboration requires much effort to build and maintain trust. First, people with different values and different beliefs see the world from different perspectives. They have their own set of priorities and it is extremely hard to make everyone put the common goal on top of this hierarchy. (Benetyte & Jatuliaviciene, 2013). Second, team members have to get rid of the stereotypes about certain nations. This will help with building personal bonds and creating own perception about the colleague. (Kong, 2018). In order to make the process of getting familiar with each other smooth, it is recommended for a manager to organize a video conference. (Ford, Piccolo & Ford, 2017). This action will provide people an opportunity to realize that they are working together with actual human beings, not only the usernames. It is important to create the right setting for team members to know each other well. By creating a friendly atmosphere among the team member, the team leader can prevent many unwanted issues in the future.

There is an alternative way of building trust. Meyerson, Weick, and Kramer (1996) have explored the concept of swift trust, the relationship when trust is pre-assumed. According to them, swift trust is a pragmatic strategy that allows maximising cohesion and productiveness inside a group of strangers. It works fine when the team is working on a short-term project and it is especially beneficial when the amount of project is huge (Robert, Dennis, & Hung, 2009). This type of trust gain popularity in the digitalized environment because it is convenient for virtual teams. Nevertheless, Germain and McGuire (2014) claimed that swift trust in virtual teams has to deal with different barrier both from organisational, technological, and psychological perspectives. However, they concluded that

swift trust is the most suitable option for the virtual teams, taking into account the specific traits of the modern generation of employees. Swift trust seems to be a convenient option for the virtual teams that are working on the short-term projects but it has a numerous barrier that has to be overcome, hence the process of building trust in a virtual team remains challenging.

Building trust is one of the most challenging missions for a virtual team manager.

Each case is certainly unique, however, there are unified instructions that may help almost in all cases:

- The manager has to encourage interpersonal communication and the process of building interpersonal bonds inside a virtual collective.
- The manager has to give a set of rules for everyone so that employees will get a perception that they all are following the same standards while building trust.
- The manager can organize a sort of special activities aimed at learning your teammates better just to make the process of collaboration more personal and less faceless.
- The manager should properly explain pre-assumed stereotypes about cultures and nationalities and then they must be excluded from the working environment.
- The manager has to promote cohesion and dedication, especially for long-term projects so that employees will not get demotivated and leave the group to work on their own.

1.2.4. Technologies and apps in virtual teams.

When it comes to the virtual environment, the role of technology is impossible to overestimate. The technological advance allowed us to use the Internet to communicate with people from far away. Technology gave us this opportunity but in order to get the maximum efficiency, the users must know how to properly use it.

When a virtual team establishes its communicational channel it is important to pay attention to which channels of communication to choose. Laitinen and Valo (2018) found out

that virtual team members appreciate video conference platforms because they help with understanding each other better. They also mentioned that users choose communicational technologies according to their personal relationship so this aspect is correlated with trust and communication. Graham (2016) also highlighted the importance of video conferencing. Her list of useful tools for virtual teams contains Chat apps, virtual phone system, and shared documents. These channels give a team power to work efficiently if all members have basic knowledge of how to use these tools.

Zofi (2017) explains the importance of translation in cross-cultural communication. Her article describes the problem related to translation technology. She shows how a lack of context or insufficient understanding of language structure may change the meaning of a particular sentence. Found among the examples are phrases translated from different languages that represent different approaches toward the conversation. Now, this article shows that the technological aspect of virtual team collaboration can be connected to cultural category.

Technological advance has opened new opportunities to solve the language barrier problem. Nagao (2008) predicted that speech translation is a field that develops gradually and that the quality of the translations will increase in the future. Later Bradford and Pozniak (2014) claimed that modern machine translation is accurate enough to be used for corporate translation conversations. Advanced technologies in the field of translation help international employees with avoiding conflicts caused by a language barrier. However, the critical condition is to make sure that the workers are aware of the existing programs that help with translations and that they learned how to use them.

To sum up, technological progress made it possible to create virtual teams. It brought the civilisation further and increased the speed of globalisation. Nowadays, employees have to face strict requirements when it comes to software skills. A good worker has to know how to deal with basic programs such as Skype, Google doc, MS office, etc. What is more,

translation tools have developed but they are still imperfect and cultural perception may change the meaning of the work said. This is why the best way to operate inside a virtual team is to use simple language and avoid idioms. Online communication is dangerous because some messages might get lost. This phenomenon has been already described in the "Communication" category. A good manager has to be sure that all members understood the task, learned how to use the programs and will use the communication channels properly. The technological aspect of working in a virtual team requires some basic skills and knowledge connected to the IT sphere.

- The manager has to be sure that all of the team members are aware of how to use software and communication channel in a proper way.
- The manager has to keep an eye on the workers who spend too much time online and try to notice whether those participants have an addiction or other problems with social life.
- The manager has to pay attention to shift management. Since everything is online and the team members might be from different time zones, it is important to make sure that different department will be able to collaborate with each other on time.
- The manager has to be aware of the current status of each participant and request help in case somebody is experiencing troubles with either software or hardware. It is not the obligatory mission, but it will certainly affect the productivity of the project.
- The structure of communication has to include at least two channels so that the main chat will not be full of instant messages and asynchronous communication will not occur.

2. The results of the interview analysis

2.1. Previous studies of the virtual team collaboration aspects

There are many different studies dedicated to collaboration in the virtual environment. (e.g., Anawati, D., & Craig, A. (2006), Bergiel B. J., Bergiel E. B., & Balsmeier P. W.

(2008), Choi, O-K., Cho, E. (2018), Tenzer, & Pudelko (2015), Furumo K., Buxton M., Pillis, E.D., Higa K., & Furumo H. (2014), Harzing, Koster, & Magner (2009)... and others).

Not all of them are necessarily tied up with the virtual team performance. Some of them explore only the particular aspect of the subject. The most recent research articles are represented in Table 1. It consists of the research done on the topic of virtual collaboration and it shows the key findings as well as the methodology that the authors were using to collect the data. These articles represent different categories that were discussed in the theoretical part of this paper. The topic of communication repeatedly appear in the majority of them and the reason for that is the importance of communication and its role as a supplement to almost every other aspect.

The most common method of researching this topic is an inductive semi-structured interview. The managers or the participants of the virtual teams, who have experience in working online, usually represent the sample of those interviews. The experience of the actual virtual team's members is of great demand when it comes to analysing the disadvantages and recognizing the benefits from online cooperation. Qualitative method prevails in this kind of researches since the problems that are connected with virtual collaboration are usually including detailed data and individual attitude towards specific aspects of the working process.

Table 1

An overview of the virtual collaboration explorations

Author	Methodology	Key findings
Lerner (2015)	Online interviews with virtual team members	Lower satisfaction when working with people from different culture. Importance of communication in virtual teams. Hierarchical problems related to gender.
Harzing, Koster, & Magner (2009)	Qualitative interview	Language barrier remains relevant issue in virtual collaboration. Misunderstanding may occur due to existence of unique phases in the national languages of the workers.
Link, Sulakatko, & Meriloo (2016)	Qualitative semi-structure interviews with people from virtual team	Trust issues and lack of responsibilities is a problem of the virtual teams. Conflicts, based on culture are relevant and might be related to communication. Communication channels must be structured.
Pinjani & Palvia (2013)	Qualitative open-ended questions.	Building mutual trust is crucial for commitment in the virtual team. Technologies became the main factor of online collaboration.
Tenzer, & Pudelko (2015)	Qualitative semi structures interviews.	Language barrier may trigger anxiety and prepare the base for massive conflicts. Employees need to get an explanation of the challenges they may come across during the working process with non-native speakers.

Source: Lerner (2015), Harzing, Koster & Magner (2009), Link, Sulakatko & Meriloo (2016), Pinjani & Palvia (2013), Tenzer & Pudelko (2015).

Based on the literature related to the topic of managing the multicultural virtual team and research done for different aspects of those team member's performance, the author of this paper has created a summary figure. It includes the main points of different categories that were defined in the text. The most significant parts of the data were included in the figure. These aspects were chosen based on the potential effect that they may have on the virtual team performance. They were mentioned in the articles that became a foundation for further analysis and their role in the process of virtual collaboration is of the high value.

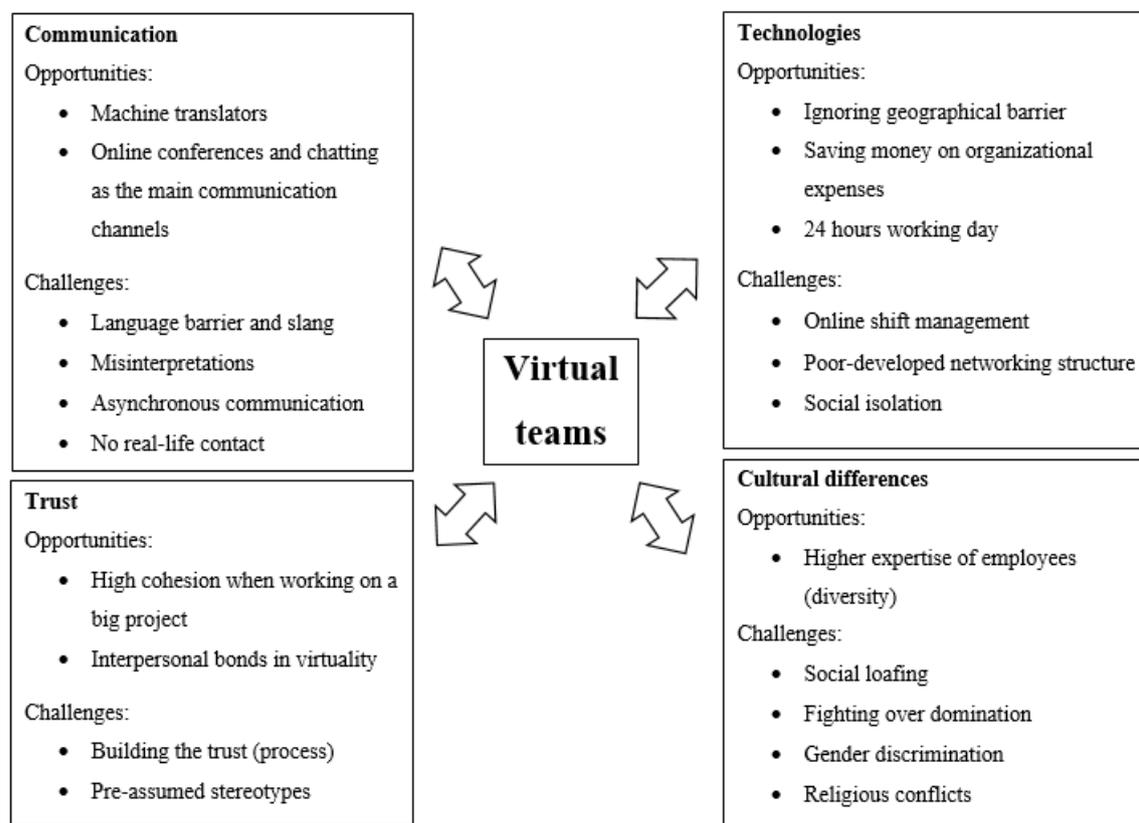


Figure 1. Virtual team performance's categories.

Source: author's compilation based on McConnell, (2010); Lerner, (2015); Vinaja, n.d.; Horwitz, Bravington, & Silvis, (2003); Tenzer & Pudelko, (2015); Jones, (2017); Halverson & Tirmizi, (2008); Thorne, (2018); Choi & Cho, (2018); Kong, (2018); Lerner, (2015).

2.2. The research methods overview

Considering the aim of the thesis, two research questions were established:

- What are the challenges of virtual teams from the manager's point of view?
- What are the opportunities of virtual teams from the manager's point of view?

In order to answer the research questions and gather more information about the relevance of the described categories, the author of this thesis has conducted five qualitative semi-structured interviews with the managers of the multicultural virtual team. This kind of method was chosen because the topic is complex and some parts of it might be controversial. It also allows seeing the reflection of the real experience and its correlation with theories and recommendations given by third-party managers. Tenzer and Pudelko (2015) claimed that

this is the optimal way of obtaining data about the virtual environment since many of the topics are controversial and require proper discussions and explanations.

The questions were formulated based on the information from the literature analysis in the theoretical part (see Figure 1). There were four groups of questions, related to each topic and focused on the most outstanding factors. Some of the questions were asking the approval from the participant. In case the negative answer would be received, those questions would reflect the contradiction to what the theoretical findings revealed.

The sample for the interviews consisted of the virtual team managers and team leaders. The main criterion that influences the selection process was the actual experience of leading the virtual team. The participants were asked to give information from their own working experience as a virtual team manager or a virtual team leader. Some questions were explained more precisely in order to avoid misinterpretations. The information about the respondent's background is presented in Table 2.

Table 2.

Respondents experience and background.

Participant	1	2	3	4	5
Gender	Male	Female	Male	Female	Male
Country of origin	USA	Russia	Russia	Russia	Australia
Age	27	26	23	26	55
Experience	Online project managers. Marketing research teams leader.	Online project managers, specialized on implementing CRM in the banking environment.	The leader of online marketing team and online communication manager for the electronic devices producer.	CEO of InspoHub Ltd.	The owner of Mindavation. Certified Project Management Professional. Intelligent The author of "Disobedience: The Difference Between Good and Great Leaders"

Source: compiled by the author.

The information was collected via online conversations and messaging. The sample of the transcript of the interviews is attached in appendixes as well as the list of questions. In order to make the discussion more opened and non-compromising, the names of participants were not listed, however, their positions were included to show their belonging to the field of the virtual working environment.

For the analysis, a deductive qualitative method was used. The data received from the interviews was precisely analysed based on the pre-determined categories, which were based on theoretical research. Each category included both opportunities and challenges for the manager of the virtual team, and the analysis of the respondent's answers was also aligned with these two dimensions. The analysis focused on testing the viability of the statements listed in Figure 1.

2.3. The results of the interviews

2.3.1. Communication in virtual teams

All of the participants have agreed that communication is very important both in virtual teams and in traditional teams. They named different argument why communication is important and all of them were related to collaboration, working and maintaining contact. Also, the respondents mention both formal and informal types of communication take takes place in the working environment.

"Confirming that a message has been received can also be more difficult, and virtual team members should have norms associated with confirmation of received messages to assist in that process". [...] (5)

[...]"It is impossible to work on a project without proper communication. People with simply start leaving"[...] (2)

The language barrier became a controversial topic. The opinions were different and the idea that this problem could have been avoided by paying attention to the selection process took the role of the main argument.

[...] "I have tested for language competency before selecting virtual team members." (5)

[...] "The language barrier is a strong issue, and Machine translators make it even worse if someone uses them to translate parts of the text without context" (4)

[...] "language barriers will continue to hinder the work across cultures." (1)

The topic of misinterpretation was clearer. Five respondents agreed that misinterpretations are a problematic aspect. Misunderstanding may appear in any environment and they usually lead to serious consequences. Misunderstanding can occur in online communication, face-to-face communication, and the process of fulfilling the order. Unclear instruction may also cause misunderstandings.

"There will often be misunderstandings, even between two native speakers" [...] (1)

"Confirming receipt and understanding of significant communications, as a regular habit, helps avoid misinterpretations" (5)

The points of view on the problem of asynchronous communication were also controversial. It seems like asynchronous communication might appear under different circumstances and its actual outcome depends on the conditions that caused it.

"Asynchronous communication also appears because of different time zones." (3)

"The work process does not always depend on other team members and it is not a big problem if you miss something or ignore the chat" [...] (2)

The question about online communication channel caused uncertainties. Three respondents said that video conferences are better when it is important to pass the information as they allowed seeing the body language and noticing the intonation changes. Two other respondents did not state that conferences are definitely better.

"It depends on the size of the team. If there are more than 5 people in a team then online conferences are ineffective" (2)

[...] "Nobody ever said they wanted to put a voice to a face, but they do say it is good to put a face to a voice!" (5)

2.3.2. Cultural differences in virtual teams

All respondents agreed that cultural differences remain a problem even in the virtual environment. They might be represented by minor issues and their role is less important than in the traditional teams but they still have an effect on the virtual team performance.

[...]" this must be managed diligently, patiently and with compassion for every team member "[...] (5)

[...] "Cultures look at work ethic in different ways and accomplish work in different ways. This could lead to conflict and often does" [...] (1)

The responses about diversified human resources and higher expertise got controversial responses. Three participants said that virtual teams indeed have access to more qualified labour resources. Others had some doubts.

"Usually you can find good human resources near to your company's location" (4)

[...]" it opens a larger workforce to the opportunities, but with that comes more people that must be sorted through to find the best candidates" (1)

All respondent agreed that social loafing is a big problem of the virtual teams. Social loafing is almost inevitable, however, there are some strategies to minimize the negative consequences of the social loafing.

"Yes, the problem of social loafing is still relevant and it is hard to deal with that"[...] (2)

"Yes, it may be an even more serious problem among virtual teams" (3)

Gender inequality and discrimination is a hot topic of modern days. According to the collected responses, two participants said that gender issue is a problem, the other two said that it is not and one responded stated neither agreement nor disagreement.

"I don't think that gender discrimination is a big problem" (3)

" This, of course, is an issue and again bleeds into the social issues between cultures. I would not say it is common in today's society but to deny that it is still present would be foolish." (1)

"It is a risk – but establishing norms early, and holding each other accountable is the best way to approach this, and minimize the potential issues." (5)

The list of cultural factors that may influence the virtual team performance can be continued with religion as three respondents said that this factor is important. The main disadvantage that can be caused by differences in religions is scheduling. Some religion has rituals and traditions associated with the holidays.

[...] "religion, gender inequality, and national celebrations may become problems." (4)

"Religion is probably a major problem, but every issue can be eliminated"[...] (3)

"Religion could be an issue depending on scheduling that may fall on holidays or religious events"[...] (1)

2.3.3. Trust in virtual teams

The respondents agreed that trust is related to communication, though it is harder to build trust in an online environment. There were several suggestions on how to organize communication in the virtual team to build trust faster and more effectively.

[...] "Way to build trust is to describe your motives and emotions during the working process" (2)

"Communicate readily, and share, both business and personal information, just as you would to establish rapport in a co-located team"[...] (5)

All five participants agreed that pre-assumed stereotypes are a relevant problem. However, the approaches that were suggested by the respondents are different and oppose each other in several cases.

"Team leader can avoid telling countries of origin of the team (members)" (3)

"This is a challenge, as bias can enter the equation very easily. I have always advocated having a discussion about cultures and expectations" [...] (5)

The next question showed a straight contradiction to the theoretical findings. All respondents said that the difficulty level of the project has no correlation with building trust. It seems like

respondent either did not experience this effect or had the opposite perception formed by their background.

"Effective communication generates trust, be the task easy or hard" (5)

"I believe a smaller task for a new team is best to build trust as the pressure of the tasks should be lower"[...] (1)

"The complicated project might be a format where the most productive member will take all the credits. In this case, the trust will be minimal." (2)

2.3.4. Technologies in virtual teams

All respondents agreed that social isolation is a problem. The social isolation became a problem that is hard to solve. Each respondent came up with a unique idea on how to solve the problem. It proves that managers implement different approaches.

The cost of virtual collaboration is also a debatable topic. It is becoming obvious from the collected results that there are different methods of counting the expenses and they are related more to the accounting field.

"Renting an office is a big cost, and I don't quite see how 'not renting one' causes higher hardware maintenance costs" (4)

"I would look wider at the cost/benefit ratio. A virtual team is not only higher maintenance cost but also the risk of missing the deadline" (2)

Theoretical 24 hours working day remains a theory. Three out of five respondents said that it should not be considered as even a conditional advantage. Two respondent said that it depends on the market field.

"It does give access to the group and work 24 hours a day but realistically the individuals will not be available to work these times" (1)

"It can work, but the work tasks must fit that model "[...] (5)

[...] "Theoretically, people can be 'present at work', but productivity will be highly questionable"[...] (4)

Networking structure was a debatable topic. The opinions were different. Two respondents said that one communication channel is enough. Two others said that there should be at least two. One responded said that it depends on the project but the rules "fewer the better".

"Email and Slack are more than enough" (4)

"One. There should always be a standard set so that communication does not break down" (1)

"I believe this depends on the mission at hand. Fewer apps the better" (5)

Four out of five respondents considered online shift management a difficult challenge. One respondent claimed that it is not a problem since shift management is always negotiable. The main thought of time management challenge is that some employees will have to work at the undesirable time and, hence, it is usually a matter of consensus.

"It is always possible to negotiate and find the optimal solution for everybody"

(4)

"That can be difficult, especially if the time difference is huge" (3)

"This problem will always exist, the impacts need to be minimized" (5)

Discussion

The results of the interviews show that communication in the virtual team is undoubtedly important. All respondents said that communication plays a crucial role in virtual teams. This is what was stated in the theoretical analysis and in that case, previous research supports the result. Translation software is widely used by the virtual teams but, the language barrier remains an issue. Three out of five respondents stated that. This result is controversial, however, the majority said that the language barrier is still an obstacle, so translation technologies are unable to solve all the problems in a multicultural environment. The statement that machine translators can exclude communicative barrier from the working process was not supported by the results of the analysis of the interviews. The majority of respondents said that asynchronous communication is a serious challenge and that it affects

the overall performance. The theory says that it is a challenge but the respondents mentioned that it can also be an opportunity. This topic remains debatable. Three out of five respondents said that online conferences are more preferable than chats. Therefore, online conferences might be a better way to collaborate with fellow workers. Body language is a bonus that can be obtained from using conferences but in an optimized team, it does not play a crucial role. All the respondents considered misinterpretations to be a relevant problem. That is aligned with the theory, and it shows that managers have to pay attention to how they formulate instructions and orders.

The overall summary of the comparison between theoretical statements and the interview's analysis is represented in Figure 2.

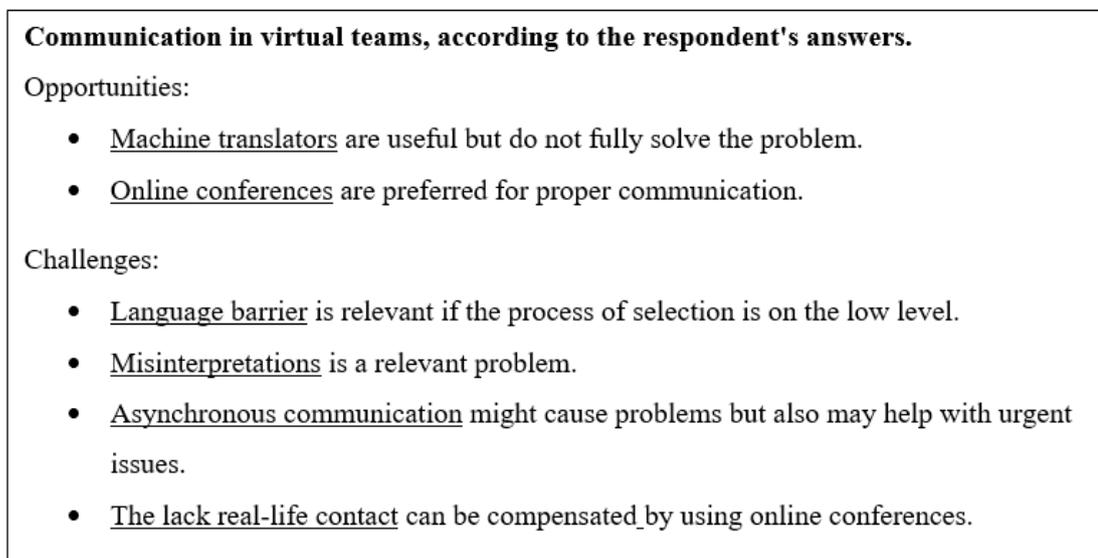


Figure 2. Communication in virtual teams.

Source: author's summarizing

The recommendations given by the respondents are presented in Table 3. Table 4 represents the limitations for communication in virtual teams.

Table 3.

Recommendations for virtual team's communication.

The problem	Recommendation for managers
Language barrier	Using translator. Improving the language proficiency Include language proficiency as a requirement for a position.
Misinterpretations	Providing an opportunity to clarify the instruction. Use synonyms for formulating the task Simplifying used language. Request a confirmation that the instruction is understood.
Asynchronous communication	Time management for chatting activities Chat control by the manager Establishing team norms for communication. Time restriction for a quick response.

Source: author's summarizing

Table 4.

Limitation for virtual team's communication.

The opportunity	Limitations
Machinery translator	Lack of context for a translated text. Cannot be used during a real-time call May use rare vocabulary that is hard to understand.
Online conferences	Depend on the amount of participant. Hard to schedule due to different time zones. Introverts might dislike this type of communication.

Source: author's summarizing

The topic of cultural differences also became controversial. Workforce diversity was not named the unconditionally beneficial factor. It was said that greater supply makes the selection process harder. Hence, higher expertise of employees was not approved as a granted opportunity, which contradicts the theoretical findings. Social loafing was named a problem, which is especially relevant for the virtual teams and all the respondents agreed with that. This statement was approved by the interview results. Gender inequality was a debatable

topic, the respondent's opinions contradicted each other. This topic requires further investigation. There are certain ways to avoid many problems related to gender topic. Three respondents named religion as a problematic issue. That proves the statement that religion is an obstacle in multicultural virtual teams. However, this is a debatable topic and it depends on the particular case. Religion-based conflicts require delicate approaches because this topic may cause serious consequences. The virtual environment might shielded employees from traditional rituals of some confessions, however, religious celebrations may become a problem when dealing with the scheduling.

The results of the analysis are represented in Figure 3.

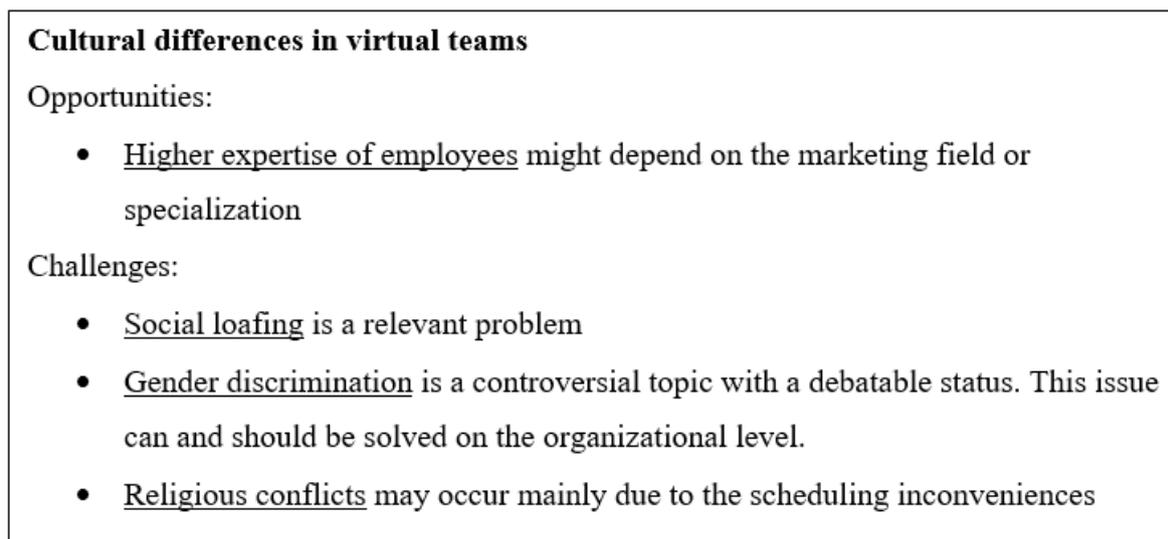


Figure 3. Cultural differences

Source: author's summarizing

The recommendations given by the respondents are presented in Table 5. The approaches of the respondents varied. This reason behind that might be experience or specific of the environment that they were working in.

Table 5.

Recommendations for how to manage cultural differences in virtual teams .

The problem	Recommendation for managers
Social loafing	New motivation system. Punishment for poor results. Strict control over the loafer. Deadline system.
Gender inequality	Avoid the conflicts Protecting the discriminated one. Establish norm early
Religious conflicts	Schedule with respect to religious celebrations (if possible) Selection process

Source: author's summarizing

The results of the interviews show that apart from the theoretical statement complicated tasks do not build a stronger cohesion. All the respondents disapproved this statement. All of them also said that communication helps to build interpersonal bonds in the virtual environment, which helps to build trust. This theoretical statement was approved. Stereotypes are still a challenge but all respondents claimed that they have their own approach of how to deal with them (Table 6). It again proves the theoretical findings.

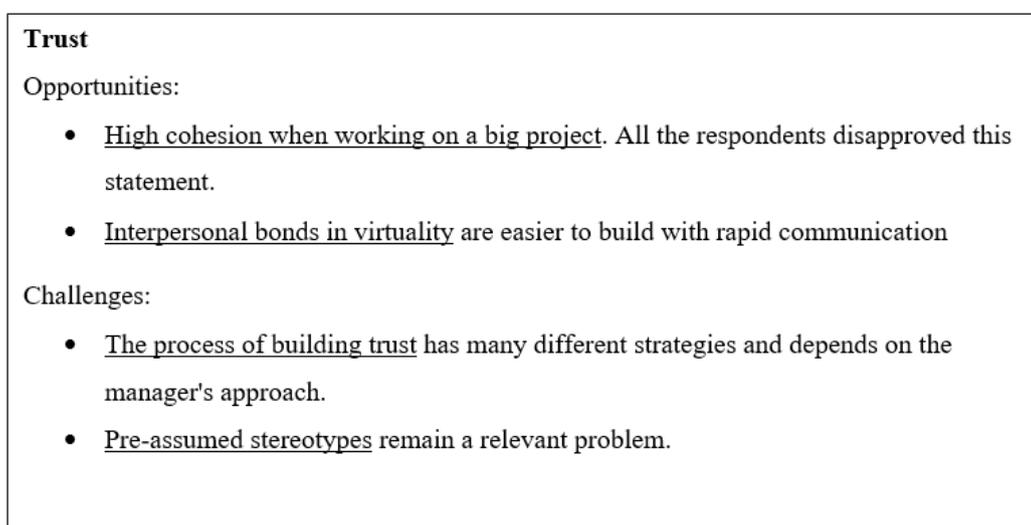


Figure 4. Trust in virtual teams

Source: author's summarizing

Table 6.

Recommendations for building trust in virtual teams

The problem	Recommendation for managers
Stereotypes	Avoiding them. Explaining and discussing during the first meeting. To discuss the expectation and make a proper introduction of yourself
Building trust	Online activities for all members Personal introduction (conferences) Explaining the expectations and setting the goals. Rapid formal and informal communication

Source: author's summarizing

Ignoring the geographical barrier was an obvious pre-assumed advantage. Workplace cost reduction became a debatable topic. Saving money on the office rent is possible but the cost also depends on the productivity of the employees. This theoretical finding cannot be fully supported by the interview result. Almost all of the respondents named 24 hours working day unachievable and unnecessary. This also contradicts to the theory. Networking infrastructure was also a debatable topic. The system of communication channel should be well-developed but it is a matter of manager's preferences how much channels there will be. Social isolation is a difficult issue and it is supported by the theoretical statement. The responders suggested different ways of how to treat this problem, and they all presented in Table 7)

Online shift management was named among the disadvantages. It was said that time-zone impact is inevitable and that it is a matter of consensus. Theory said that manager should moderate online shift, and this is true. Time management remained a problem.

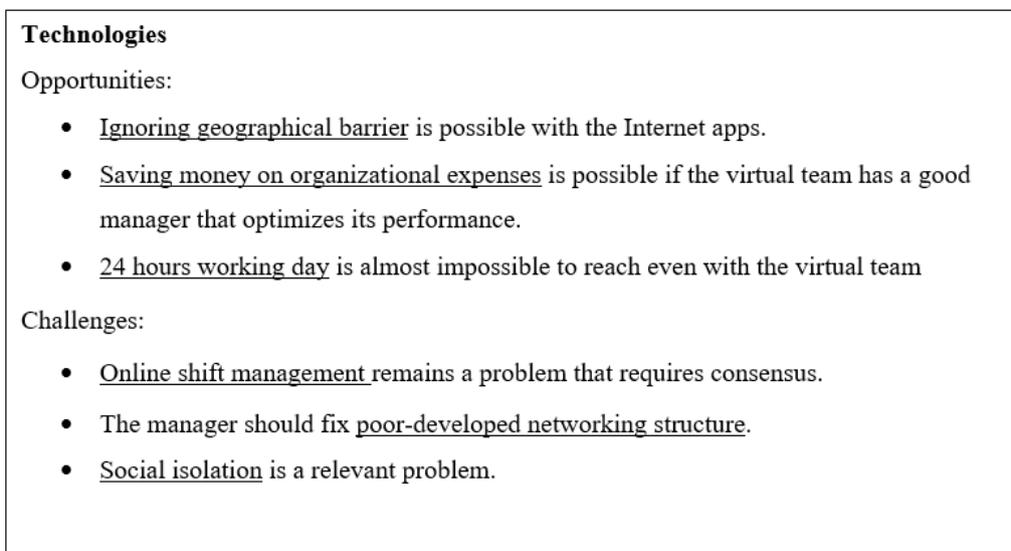


Figure 5. Technologies in virtual teams

Source: author's summarizing

Recommendations and approaches to the relevant problems are represented in Table 7.

Table 7.

Recommendations for technological issues in the virtual team.

The problem	Recommendation for managers
Social isolation	Inclusive scheduling Professional help More online interaction (or get-together activities if possible) Life-work balance
Communication channels (network)	Emergency line Informal/formal differentiation Clear structure
Online shift management	Minimize time zone impact Find the consensus Negotiate the shifts

Source: author's summarizing

The final question was about the future perspectives of the virtual teams. All respondents said that virtual team will not replace the traditional teams in the future. Nevertheless, one respondent actually said that they have a potential to do that. Anyway, they will remain a great alternative to the office-style collaborating but will not eliminate this way doing the job.

Conclusion

Multicultural virtual teams become more and more popular in the context of globalization and the development of information technology. These new entities have their own advantages and disadvantages and what makes a virtual team successful is a good leader. A good virtual team manager has to be aware of the challenges and opportunities that are brought by working in the virtual environment. Exploring specific challenges and opportunities of working in a virtual team was the main aim of this thesis.

For achieving the aim several tasks were accomplished. The analysis of theories and articles, related to the virtual team management was done. The literature review revealed the main sides of the virtual team management that provided benefits and caused problems. The aspects of the virtual collaboration were divided into four major categories, each of which consisted of a number of positive and negative factors. The expected behaviour of the managers was stated.

Afterward, field research was conducted. Five qualitative semi-structured interviews were taken with the people, who have a working experience of a virtual team manager or leader. Based on the responses of the participants the theoretical findings were tested for viability.

The findings of this paper show the controversy of many aspects of the virtual team's management. It was proved that language barrier, misinterpretations and asynchronous messaging are relevant problems and the virtual team managers have to be ready to deal with them. Online translators did not fully solve the problem of the language barrier. Also, this research found out that asynchronous communication might be beneficial, apart from the theory that stated that it only has a negative effect on online collaboration. The most significant result is that misinterpretations were considered to be a big problem of the virtual teams. All respondents agreed with this statement.

Cultural differences and human resource diversity also was a controversial topic. Not all of the respondents agreed that virtual team allows hiring employees with higher expertise. It was the contradiction to the theoretical statement. All participants agreed that social loafing remained a big problem in the virtual environment. This statement was supported by the theoretical overview results. Religion and gender role in virtual team commands need more investigation because these topics are complex and have several layers of challenges.

Trust building is a complicated process, and the respondents agreed that trust and communication are tightly connected. All respondents disapproved the statement that trust is easier to build in complicated projects with higher requirements. In addition, all respondents agreed on the importance of pre-assumed stereotypes. This is the challenge that every manager has to meet.

The role of technologies in virtual teams is crucial. They allowed people to ignore the geographical barrier and unite the whole globe under the World Wide Web. The respondents said that working in virtuality does not guarantee the reduction of cost, as it was stated based on the theoretical overview. Moreover, the 24-hour working day remained a concept as the majority participants agreed that it has no connection with reality. Online shift management is a challenge, and the interview results approved that. Social isolation is a big problem in the Internet era. Virtual team members might suffer from this more than others might. There were no strict rules about the communication channel structure. The interview analysis shows that every manager chooses different ways of establishing a networking structure.

The recommendations collected from the respondents show that each virtual team leader has its own approach towards the challenges of online collaboration. They also see the opportunities from the different perspectives and notices various limitation that prevent the virtual team from becoming more productive. However, there are challenges and opportunities that every manager has to face. This thesis identified and proved the relevance of a number of those factors.

The limitation of this paper is the sample size. More participant would bring more diversity into the approaches of how to deal with the problems. Another limitation is the categories that were compiled by the author. More aspects may influence the virtual team's performance. Because of the limited sample, the findings might be incomplete and might require further investigations.

Further investigation in the field of the virtual team management can explore the problems that are related to the categories that were described in this work or the new aspects that were missed. With the constant development of technologies, some of the challenges might soon be irrelevant but the ones related to technology and the social norm will appear because the world of the virtual environment is evolving.

References

1. Anawati, D., & Craig, A. (2006) Behavioral Adaptation Within Cross-Cultural Virtual Teams. *IEEE Transactions on professional communication*, 49(1). March 2006
2. Bartelt, V.L., & Dennis, A.R., (2014, June 1). Nature and Nurture: The Impact of Automaticity and the Structuration of Communication on Virtual Team Behavior and Performance. *MIS Quarterly*. 38 (2), 521-522.
3. Benetyte D., & Jatuliaviciene G (2013). Building and sustaining trust in virtual teams within organizational context. *Regional Formation and Development Studies*, (10), 18-30.2
4. Bergiel B. J., Bergiel E. B., & Balsmeier P. W. (2008) Nature of virtual teams: a summary of their advantages and disadvantages", *Management Research News*, 31. 2, 102.
5. Bradford R., & Pozniak J., (April 9, 2014). *Combining Modern Machine Translation Software with LSI for Cross-Lingual Information Processing*. 2014 11th International Conference on Information Technology: New Generations. Retrieved from: <https://ieeexplore.ieee.org/document/6822177>
6. Brandt, V., England, W., & Ward, S. (Nov/Dec 2011). Virtual Team. *Research Technology Management* (54)6, 62-63.
7. Checig X., Fu S., Sun J., Han Y., Shen J., & Zarifis A. (April 8, 2016) Investigating individual trust in semi-virtual collaboration of multicultural and unicultural teams. *Computers in human Behavior* 62 (2016), 267-276
8. Choi, O-K., Cho, E. (2018, September 26). The mechanism of trust affecting collaboration in virtual teams and the moderating roles of the culture autonomy and task complexity. *Computers in Human Behavior Journal*. 91, 309-312.

9. de Vries R.E., Van den Hooff B., & de Ridder J.A. (April 2006) " Explaining Knowledge Sharing The Role of Team Communication Styles, Job Satisfaction, and Performance Beliefs", *Communication Research*, 33(2), 126-128.
10. Dulebohn J.H. & Hoch J.E. (2017). Virtual teams in organizations. *Human Resource Management Review*, vol 27, 569-574.
11. Eisenhauer, T. (2016, October 19) *How to Avoid the Communication Barriers of Chat and Text*. Retrieved from:
<https://axerosolutions.com/blogs/timeisenhauer/pulse/392/how-to-avoid-the-communication-barriers-of-chat-and-text>
12. Eric McConnell (2010, April 29). *Virtual Teams – Definition, Management and Benefits*. Retrieved from: <https://mymanagementguide.com/managing-virtual-teams-understanding-definition-management-and-benefits/>
13. Ferrazi K. (November 19, 2012). *How to Manage Conflict in Virtual Teams*. Retrieved from: <https://hbr.org/2012/11/how-to-manage-conflict-in-virt>
14. Ford R.C., Piccolo R.F., Ford, L.R. (2017). Strategies for building effective virtual teams: Trust is key. *Business Horizon*. 60 (2017) 25-34.
15. Furumo K., Buxton M., Pillis, E.D., Higa K., & Furumo H. (2014) Differences between male and female communications and conflict management styles in virtual teams. *Journal of management and Market Research*, 17, 1-7
16. Germain M., & McGuire D. (2014) The Role of Swift trust in Virtual Teams and Implications for Human Resource Development. *Advances in developing Human Resources Vol. 16(3)* 356-370
17. GGI (2017) – Gender Inequality Index 2017. *United Nations development programme, Human development reports*. Retrieved from:
<http://hdr.undp.org/en/composite/GII>

18. Gibson C.B., & Manuel, J. A. (2003). Building Trust: Effective Multi-Cultural Communication Process in Virtual Teams. *Center for Effective Organizations*, 12-20.
19. Giovannoni F. & Xiong S. (2019). Communication under language barriers. *Journal of Economic Theory* vol. 180 (2019), p 274-303.
20. Graham, K. (March 2016) 5 Essential Tech Tools for Virtual Teams. retrieved from: <https://www.idealware.org/5-essential-tech-tools-virtual-teams/>
21. Gratis B. (2016, November 28) *Overcoming language barriers to communication*. Retrieved from: <https://www.typetalk.com/blog/overcoming-language-barriers-communication/>
22. Hacker J., Johnson M., Saunders C., & Thayer A.L., (2019) Trust in Virtual teams: A Multidisciplinary Review and Integration. *Australian Journal of Information Systems* 2019 23, 14-15.
23. Halkos G., & Bousinakis D. (2010). The effect of stress and satisfaction on Productivity. *International Journal of Productivity and Performance Management*. 59(5), 415-431.
24. Halverson, C. B., & Tirmizi, S. A., (2008) *Effective Multicultural Teams Theory and Practice*. 7-8. Retrieved from: https://books.google.ru/books?hl=en&lr=&id=WERRWf0FSI0C&oi=fnd&pg=PP2&dq=multicultural+virtual+teams+management&ots=S9rojoxFJd&sig=z4DU-4KndNhIjkU5IdInyg61i4Y&redir_esc=y#v=onepage&q&f=false
25. Hartman F. & Guss C., (1996). Virtual Teams – Constrained by technology or Culture? *IEMC 96 Proceedings.*, p 185-190
26. Harvey, M., Novicevic, M., & Garrison G (September 9, 2005) Global virtual teams: a human resource capital architecture. *The International Journal of Human Resource Management* 16, 1583-1599

27. Harzing A-W., Koster K., & Magner U. (2011). Babel in Business: The language barrier and its solutions in the HQ-subsiary relationship. *Journal of World Business* 46(3), 279-287(July 2011)
28. Horwitz F.M., Bravington D., & Silvis U. (2006). The promise of virtual team: identifying key factors in effectiveness and failure. *Journal of European Industrial Training*, 30 (6), 272-294.
29. Hung, Y. C., & Nguyen, M. T. T. D. (2008). The Impact of Cultural Diversity on Global Virtual Team Collaboration – A Social Identity Perspective. *Proceedings of the 41st Hawaii International Conference on System Sciences*.
30. Jones, L. (2017, September 26) *Homogeneous Vs. Heterogeneous Teams*. Retrieved from: <https://bizfluent.com/info-8357494-homogeneous-vs-heterogeneous-teams.html>
31. Kaplan, M., Dollar, B., Melian V., Van Durme, Y., & Wong, J. (2016, February 29) *Shape culture Drive strategy. Deloitte Insights*. Retrieved from: <https://www2.deloitte.com/insights/us/en/focus/human-capital-trends/2016/impact-of-culture-on-business-strategy.html>
32. Kong, D.T. (2018). Trust toward a group of strangers as a function of stereotype based social identification. *Personality and Individual Differences*. 120 (2018), 265-270.
33. Laitinen, K., & Valo, M. (2018) Meaning of communication technology in virtual team meetings: Framing technology-related interaction. *International Journal of Human-Computer Studies* 111(March 2018), 12-22
34. Lamson M. (2018) *How To Manage Gender and Culture in Virtual Teams*. Retrieved from: <https://www.inc.com/melissa-lamson/5-tips-for-managing-gender-culture-in-virtual-teams.html>
35. Language barrier (n.d.) *Businessstopia. Language Barrier to Communication*.

Retrieved from: <https://www.businessstopia.net/communication/language-barriers>

36. Lee, M.R. (2014) *Leading Virtual Project Teams: Adapting Leadership Theories and Communication Techniques to 21st Century Organizations*. Taylor & Francis Group, LLC
37. Lerner, V. (2015) Cultural Backgrounds Influencing Virtual Team Performance. *Walden Dissertations and Doctoral Studies collection*. 123-127
38. Lilian S.C. (2014). Virtual teams: opportunities and Challenges for e-leaders. *Procedia – Social and Behavioral Sciences*. 110 (2014). 1251-1261.
39. Link, T, Sulakatko, S. & Meriloo, R (2016) Enhancing collaboration in virtual teams in an international company – case "Innovation Norway".
40. Lippert H., & Dulewicz V., (2018) "A profile of high-performing global virtual teams", *Team Performance Management: An International Journal*, 24 (3/4), 170-171.
41. Lyons R., Priest H. A., Wildman J.L., Salas E., & Carnegie D. (2009). Managing Virtual Teams: Strategies for team Leaders. *Economics in Design*. Winter (2009), 9-14.
42. Madera, J.M., Dawson M., & Neal J.A. (2014). Managing language barriers in the workplace: The roles of job demands and resources on turnover intentions. *International Journal of Hospitality Management*. 42 (2014), 117-125.
43. Malhotra A., Majchzak A., & Rosen B. (2007, February 1, 2007). Leading Virtual team. *Academy of Management Perspectives*, 60-63
44. McIntire, M. (2014, June 3). *How to overcome language and cultural barriers in the Workplace*. Retrieved from:
<https://www.linkedin.com/pulse/20140603143206-20499125-how-to-overcome-language-and-cultural-barriers-in-the-workplace/>

45. Meyerson, D., Weick, K. E., & Kramer, R. M. (1996). *Swift trust and temporary groups*. In Thousand Oaks, CA: Sage
46. Molinsky A., & Gundling E. (2016, June 28). *How to build Trust on Your Cross Cultural team*. *Harvard business review*. Retrieved from:
<https://hbr.org/2016/06/how-to-build-trust-on-your-cross-cultural-team>
47. Muethel, M., & Hoegl M. (2010) Cultural and societal influences on shared leadership in globally dispersed teams. *Journal of International Management* 16 (2010) 234-246
48. Nagao M. (December 22, 2008). *Overcoming the Language Barrier*. Retrieved from:
<https://ieeexplore.ieee.org/document/4724431>
49. Neeley T. (2015). Global Teams That Work. *Harvard Business review*. October 2015 issue. 74-81.
50. Olariu, C., & Aldea, C.C., (2014). Managing Processes for Virtual Teams – A BPM Approach. *Procedia - Social and Behavioural Sciences*, 109(0), pp.380–384
51. Paul R., Drake J. R., & Liang H. (September 2016). Global Virtual team Performance: the Effect of Coordination Effectiveness, Trust, and Team Cohesion. *IEEE Transactions of Professional Communication*. 59 (3) 189-201.
52. Pinjani P., & Palvia P. (2013) Trust and knowledge sharing in diverse global virtual teams. *Information & Management* 50 (2013) 144-153
53. Riedl, B.C., Gallenkamp, J.V., Picot, A., & Welpe, I.M. (2012) Antecedents of Transactive Memory Systems in Virtual Teams – The Role of Communication, Culture, and Team Size. *45th Hawaii International Conference of System Sciences*. 2012
54. Robert, L.P., Dennis, A.R., & Hung, Y.C. (2009). Individual Swift Trust and Knowledge-Based Trust in Face-to-Face and Virtual Team Members. *Journal of Management Information Systems* 26(20) 241-279

55. Teece, D.J., Pisano G., & Shuen A. (January 12, 2003) Dynamic Capabilities and Strategic Management. *Essays in Technology Management and Policy*. World Scientific Publishing Co Pte Ltd.
56. Tenzer, H., & Pudelko, M. (2015, June 11) Leading across language barrier: Managing Language-induced emotions in multinational teams. *The Leadership Quarterly*. 607-608.
57. Tenzer, H., Pudelko, M., & Harzing A., (June 2014). The impact of language barrier on trust formation in multinational teams. *Journal of International Business Studies*. 45(5), 39.
58. Thorne B, (2018, August 31) Asynchronous Communication is the Future of Work. Retrieved from: <http://blog.idonethis.com/asynchronous-communication/>
59. Ting-Toomey, S., & Oetzel, J. G. (2001). *Managing intercultural conflicts effectively*. Sage Publications.
60. Vinaja, R. (n.d.) *MAJOR CHALLENGES IN MULTI-CULTURAL VIRTUAL TEAMS*. Retrieved from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.467.4219&rep=rep1&type=pdf>
61. Virtual team (n.d.) Free Management Library. Definition of virtual team. Retrieved from: <https://managementhelp.org/groups/virtual/defined.pdf>
62. Von Glinow, M. A., Shapiro D. L., & Brett, J. M., (2004). Can We Talk, and Should We? Managing Emotional Conflict in Multicultural Teams. *The academy of Management Review* 29(4), 578-592.
63. Wu, W. (2009). Boundary Issues in Global Virtual Teams. *Graduate Theses and Dissertations*. 10850. Retrieved from: <https://lib.dr.iastate.edu/etd/10850/>
64. Zneimer, L. (August 8, 2018) *How to Manage People in Different Time Zones*. Retrieved from: <https://www.entrepreneur.com/article/317811>

65. Zofi, Y. (October 26, 2017) *How Virtual Teams can Avoid Communications getting "Lost in Translation"* Retrieved from: <https://managemagazine.com/article-bank/leadership/team-leadership/how-virtual-teams-avoid-communications-getting-lost-in-translation/>

Appendix A

Interview with the representative of an X-culture programme. (1)

1) Do you believe that virtual teams provide opportunities that were unavailable for ordinary teams? If you do, can you list the most remarkable ones?

Virtual teams offer a unique opportunity for working independently. This is often more of an obstacle but if an individual has the proper skills, this can be an opportunity to fill a position that many cannot. Additionally virtual work gives the opportunity to work remotely and even from home. This is a benefit to many who wish not to participate in the standard office environment of work that has dominated for generations.

2) Communication is considered to be the most important factor in virtual collaboration. From your perspective, is it true?

Communication is always an important (if not the most important) aspect within a group. When communication breaks down, everything else typically follows. This logic has been shown to be true time and time again from office work to military operations. The ability to transfer information over distances effectively is imperative to virtual collaboration.

3) The online environment is providing users with machine translators, however, the language barrier is still a huge limitation for international virtual teams. Do you agree?

Online tools such as translators are opening new possibilities that were not available previously, however they do not fully span the gap and still require development. Additionally, until the ability to translate in real time becomes accessible in a large capacity, language barriers will continue to hinder the work across cultures.

4) Misinterpretations may occur when a non-native speaker gets an unclear order or the instruction is written with the usage of uncommon words. Can misinterpretations and misunderstandings be avoided? What is the most effective way of avoiding them?

There will often be misunderstandings, even between two native speakers. It is hard to say if there is a way to fully avoid. I would say that only keeping in mind who you are working with is the key way to avoid this as best as you can. For instance, if you are a native speaker, you should be aware of your “audience” and change your speech to accommodate this. As an addition, it can be asked of that person to repeat what they were instructed so an understanding will be agreed upon. Unfortunately this takes more time, but can save time in the long run.

5) Asynchronous communication caused by extensive usage of online chats may cause major problems in the virtual team and affect productivity. Is that true and are there any other challenges for online communication?

Unfortunately time zones are an issue that must be taken into account. Many times, part of a team will not be available as they are sleeping. Another example of an issue would be cultures. Many cultures interact in different ways and even prefer to speak in person or on video rather than only chat groups. Cultures play an immense role and can be large issues to work around.

6) Online conferences are more preferable than online chats in the case then it is important to build personal bonds inside the team. Is that so?

Depending on the person, some people prefer to speak face to face while others are more introverted and prefer the faceless chatting online. It really depends on the team and the project that is being operated in. In my experience, conferences are better as the communication can be clearly seen and ensured that information is properly being passed from one to another.

7) It has been said that trust and communication are closely correlated. What is the most effective way of building trust in an online environment?

Trust in an online environment is difficult. In my experience trust is something that is built over working longer periods of time with the same people. As those people come through and

can be relied on to finish their work, the trust builds. Conversely in the beginning it is often difficult to trust someone who has not proven themselves. Possibly video meetings to place a face with the name is one way to have a more practical relationship with this person who may be across the world.

8) Pre-assumed stereotypes about nations or countries may negatively affect the process of building trust in the virtual team. How can the manager or the team leader minimise damage from this factor?

As a manager, they have a choice of pointing out this issue or leaving it alone. This item could be talked about in the beginning and explained that everyone may have their differences personally but have the same goal as a team and need to work together toward this and personal issues should not be discussed in the team. On the other side, it could be left alone with the idea that as long as it is not being brought up, more focus on the possible issue may just make it worse.

9) Is it true that trust is easier to build when the team is working on a complicated project that requires higher expertise rather than when the team is completing an easy task?

I believe a smaller task for a new team is best to build trust as the pressure of the tasks should be lower. However, if the group is able to accomplish a large complicated project well, it could be jumpstart to trust. Seeing that someone is capable of larger workloads could help to build trust without as much time.

10) Technologies let us ignore the geographical barrier, however, social isolation became a serious problem, which is especially recognizable in virtual teams. How can the manager resolve this issue?

The manager can have proper scheduling that allows everyone to participate in meetings and having video meetings as I mentioned before could build interpersonal relationships that are difficult with online teams. Having that personal relationship could make or break a team such as this.

11) Virtual team collaboration is characterized by workplace cost reduction but at the same time hardware maintenance costs are becoming bigger. From your perspective, does virtual collaboration helps to save money on collateral organizational expenses?

It should help to avoid many of the fixed costs associated with the standard work environment being utilized. Of course the variable costs of maintenance and other itemized issues will come up, but not being tied to physical responsibilities that companies often have free up utility of funds and assets to be used elsewhere.

12) International virtual teams provide a theoretical opportunity to have 24 hours working day. Does it work in reality? Is it a feasible advantage?

This is not practical. It does give access to the group and work 24 hours a day but realistically the individuals will not be available to work these times. I would still consider it to be an advantage as work is accomplished in many different places, but it is not 24 hours a day.

13) Online communication channels have to be organized by a manager. From your experience, how many different apps should a productive virtual team use to communicate? Any specific software?

One. There should always be a standard set so that communication does not break down and have places where someone is not monitoring. It should always be set in the beginning and any changes should be explained clearly to each member. I have always used facebook messenger, but whatsapp and slack are examples I know that others use.

14) Will you agree with the statement that cultural differences are remaining the problem of management in the virtual team?

It is not "the" problem of a virtual team in particular but is still a large issue. Cultures look at work ethic in different ways and accomplish work in different ways. This could lead to conflict and often does if people are from drastically different cultures. Again this is the

responsibility of a manager to set the standards in the beginning and hold each member accountable to them.

15) Is it true that creating a team online allows the company to hire employees with the highest expertise?

In theory it opens a larger workforce to the opportunities, but with that comes more people that must be sorted through to find the best candidates. A larger pool is always great, but comes with more work to find those which will benefit the team in the best way.

16) Is social loafing still common among virtual team participants? What are the methods that can be used to resolve this problem?

This is a primary issue of virtual teams. Having timelines are one way to avoid large examples of loafing. This borders on micromanaging with could be an issue but depending on the members, it may be necessary. Having proper structure and motivation I believe are keys to avoid loafing within a team.

17) Another huge problem that is correlated with the cultural difference is gender discrimination. Is it common to come across conflicts caused by the unequal attitude towards gender representatives of different cultures?

This of course is an issue and again bleeds into the social issues between cultures. I would not say it is common in today's society but to deny that it is still present would be foolish.

18) What are other issues related to cultural differences that have a strong impact on virtual team performance? (Religion, gender, traditions, ideology)

Religion could be an issue depending on scheduling that may fall on holidays or religious events. The way in which individuals communicate could be another issue based on their cultures. Some cultures are very professional while others are casual. In a highly effective team, they can appreciate each others' differences and leave these out of the work.

19) Time management challenges are still relevant, especially among international virtual teams. Is it hard to manage shifts in an online environment?

It can be very difficult to manage time shifts. Everyone has their own lives and they view their own as the most important. Finding a proposition that fits all members is nearly impossible in some situations. Unfortunately when working virtually, you may have to make sacrifices for the betterment of the team.

20) Do you think that virtual teams will replace the real-life teams in the nearest future?

They will absolutely not replace real life teams. In many fields it is a great alternative, but will not be able to replace in place meetings in others. People are creatures of social activity. It will be incredibly difficult to replace the in person interactions.

Appendix B

Interview with the representative of the bank virtual project manager. (2)

1) Do you believe that virtual teams provide opportunities that were unavailable for ordinary teams? If you do, can you list the most remarkable ones?

Yes, I do believe so. Firstly, they allow building a team of high-qualified specialists. Sometimes regional markets require consensus due to the labor resources limitations. Secondly, different mentalities and approaches increase the number of ideas.

2) Communication is considered to be the most important factor in virtual collaboration. From your perspective, is it true?

It is a very important factor.

To begin with, It makes a group of people a team. It is impossible to work on a project without proper communication. People with simply start leaving (real-life experience, we had that case)

Asymmetric information is also a barrier. One employee will take some data for granted and will not put any explanatory text while the other worker will have no clue of what is going on.

We should not forget about the time. The opportunity to informally ask for a few details saves a lot of working time.

3) The online environment is providing users with machine translators, however, the language barrier is still a huge limitation for international virtual teams. Do you agree?

In my opinion, that language barrier is overestimated. If the team members know English at B2 level and higher than there will be no problems with the language. And yes, translators help a lot.

4) Misinterpretations may occur when a non-native speaker gets an unclear order or the instruction is written with the usage of uncommon words. Can misinterpretations and misunderstandings be avoided? What is the most effective way of avoiding them?

(The most effective way) In order to avoid interpretation, documents must include:

- international terminology
- simple grammar constructions
- synonyms for complicated part or rephrasing
- it is better to provide an option of clarifying any misunderstanding with an author (if it is possible)

5) Asynchronous communication caused by extensive usage of online chats may cause major problems in the virtual team and affect productivity. Is that true and are there any other challenges for online communication?

I would not agree with this statement. The work process does not always depend on other team members and it is not a big problem if you miss something or ignore the chat.

Although, the problem may appear when using the chat. What is more, extensive chat usage may affect work-life balance and this will affect productivity.

6) Online conferences are more preferable than online chats in the case then it is important to build personal bonds inside the team. Is that so?

It depends on the size of the team. If there are more than 5 people in a team then online conferences are ineffective. I think that informal communication in chats is helping to build bonds easier.

7) It has been said that trust and communication are closely correlated. What is the most effective way of building trust in an online environment?

I will agree. In my opinion, the explanation of the motivation behind particular actions may create trust. If a person is talking about the project precisely, then, in real life, others may follow the non-verbal signs. However, the Internet environment does not have this option, so an employee has to become a human being in the eyes of team members in order to build

trust.

Another way to build trust is to describe your motives and emotions during the working process (but avoiding annoying spam)

8) Pre-assumed stereotypes about nations or countries may negatively affect the process of building trust in the virtual team. How can the manager or the team leader minimise damage from this factor?

The first obligatory thing to do is to make team members get familiar with each other. The good way to start the introduction is by listing the personal traits and talents of each participant. If there is enough time, then a good idea is to explain and discuss the stereotypes in an informal way.

If there is a lack of time or the project requires not so many hours of working together, then it is more reasonable to just ban the nationality topic and all collateral jokes\conflicts.

9) Is it true that trust is easier to build when the team is working on a complicated project that requires higher expertise rather than when the team is completing an easy task?

I don't think that there is a correlation. The complicated project might be a format where the most productive member will take all the credits. In this case, the trust will be minimal. Meanwhile, simple tasks allow everyone to work calm and cooperative.

10) Technologies let us ignore the geographical barrier, however, social isolation became a serious problem, which is especially recognizable in virtual teams. How can the manager resolve this issue?

At first, it is important to talk to a person. There might be a chance that self-isolation is his/her conscious choice. In this case, there is no need for "saving" him or her. But if he or she is asking for help, then the manager has to look for working methods and maybe ask a psychiatrist

11) Virtual team collaboration is characterized by workplace cost reduction but at the same time hardware maintenance costs are becoming bigger. From your perspective, does virtual collaboration helps to save money on collateral organizational expenses?

I think yes. But I would look wider at the cost/benefit ratio. A virtual team is not only higher maintenance cost but also the risk of missing the deadline.

12) International virtual teams provide a theoretical opportunity to have 24 hours working day. Does it work in reality? Is it a feasible advantage?

It depends on the type of work. If it is, for example, coding, then yes. But if it is a group work then it is not fully true. It is uncomfortable when I am still working and another office is already closed so that I can't ask any questions.

13) Online communication channels have to be organized by a manager. From your experience, how many different apps should a productive virtual team use to communicate? Any specific software?

There should be at least 2 channels. One for the work time exclusively. When an employee is working, then he or she concentrates only on this chat. Team members do not pay attention to this chat while not on work. The second channel might be any of the popular messengers with the group chat for information communication and one emergency channel.

14) Will you agree with the statement that cultural differences are remaining the problem of management in the virtual team?

Yes, but it is less noticeable than in traditional teams. We often forget about the fact that there are representatives of another culture sitting on the opposite side of the Internet wire. Especially if they communicate similar to us.

15) Is it true that creating a team online allows the company to hire employees with the highest expertise?

It depends on the sphere of the market. At the moment, the majority of good specialists are working in traditional teams.

16) Is social loafing still common among virtual team participants? What are the methods that can be used to resolve this problem?

Yes, the problem of social loafing is still relevant and it is hard to deal with that. Probably it is a matter of precise selection and various motivation strategies. I know that total surveillance and time-sheets are decreasing the team's productivity.

17) Another huge problem that is correlated with the cultural difference is gender discrimination. Is it common to come across conflicts caused by the unequal attitude towards gender representatives of different cultures?

I've never come across this problem in the virtual environment

18) What are other issues related to cultural differences that have a strong impact on virtual team performance? (Religion, gender, traditions, ideology)

Two more factors that influence performance are age (different values generations) and working experience (not a cultural)

19) Time management challenges are still relevant, especially among international virtual teams. Is it hard to manage shifts in an online environment?

I think yes. You never see the full picture as it would be with working in a traditional team. And the amount of those, who want to disobey the rules is always high because online rules seem to be less strict.

20) Do you think that virtual teams will replace the real-life teams in the nearest future?

I don't think so. Offline job is not only the chores. It is also meetings, rituals, personal communication. We are humans and these things are important to us.

Appendix C

Interview with the representative of the virtual communication manager of electronic devices manufacturer. (3)

1). Do you believe that virtual teams provide opportunities that were unavailable for ordinary teams? If you do, can you list the most remarkable ones?

- I believe that there is the main advantage provided by the virtual team, which is convenience. By that, I mean the ability to work from a suitable location and plan your time rationally. It increases the productivity of the labour and helps to plan your time sufficiently.

2) Communication is considered to be the most important factor in virtual collaboration. From your perspective, is it true?

-Yes, that's true. Communication is the key factor of the teamwork both in real life and online. The quality of communication affects the team's performance in both negative and positive ways.

3) The online environment is providing users with machine translators, however, the language barrier is still a huge limitation for international virtual teams. Do you agree?

- Yes, translators are not accurate enough. Moreover, you have to spend some of your time on it, and time is one most precious resources a company has. From my experience language barrier is something that creates problems during online callings.

4) Misinterpretations may occur when a non-native speaker gets an unclear order or the instruction is written with the usage of uncommon words. Can misinterpretations and misunderstandings be avoided? What is the most effective way of avoiding them?

-Simplicity is probably the best answer for it. Also, you should discuss instructions with your team, not just avail them. Proper explanation is what needs to be done anyway. Without it, the team is destined to fail.

5) Asynchronous communication caused by extensive usage of online chats may cause major problems in the virtual team and affect productivity. Is that true and are there any other challenges for online communication?

-That's true. Asynchronous communication also appear because of different time zones. It is an unwanted obstacle that prevents teams from saving time.

6) Online conferences are more preferable than online chats in the case then it is important to build personal bonds inside the team. Is that so?

-Yes, it is. It will also help to get rid of misinterpretations. Also, body language is important as it may show the uncertainty or lie in speech.

7) It has been said that trust and communication are closely correlated. What is the most effective way of building trust in an online environment?

-A good idea for team is to spend their time not only on work but also on having fun together. These extra activities help to maintain team spirit and to get familiar to each other

8) Pre-assumed stereotypes about nations or countries may negatively affect the process of building trust in the virtual team. How can the manager or the team leader minimise damage from this factor?

- Team leader can avoid telling countries of origin of team members to each other. This is one of the most common ways, especially if the project is not going to take a long time.

9) Is it true that trust is easier to build when the team is working on a complicated project that requires higher expertise rather than when the team is completing an easy task?

- It depends on individuals that are in the team. It is not always the same outcome and you have to take into account way to much parameters.

10) Technologies let us ignore the geographical barrier, however, social isolation became a serious problem, which is especially recognizable in virtual teams. How can the manager resolve this issue?

- Team leader can also avoid providing team members with this information. It is not his direct responsibility to check the mental stability of the employees.

11) Virtual team collaboration is characterized by workplace cost reduction but at the same time hardware maintenance costs are becoming bigger. From your perspective, does virtual collaboration help to save money on collateral organizational expenses?

- I don't think that it makes a big difference in terms of saving money. The expenses depend on many factors and not all of them are obvious. That is why it is hard to say whether they are cheaper or not.

12) International virtual teams provide a theoretical opportunity to have 24 hours working day. Does it work in reality? Is it a feasible advantage?

- I don't think that anybody would like to work 24 hours a day. In my opinion, the advantage is that it is easier to start conversation and much more quicker to make amends.

13) Online communication channels have to be organized by a manager. From your experience, how many different apps should a productive virtual team use to communicate? Any specific software?

- I think it is better to use as less as possible. The wide network may cause some problems with missing data and using different chats in a chaotic way.

14) Will you agree with the statement that cultural differences are remaining the problem of management in the virtual team?

- Yes, I agree. I must add that cultural differences are still noticeable in the regular office teams as well.

15) Is it true that creating a team online allows the company to hire employees with the highest expertise?

- Yes, it is true. In fact, online self-promotion is becoming more and more popular online. The access to specialized worker is easier now and helps to create new companies with great starting positions

16) Is social loafing still common among virtual team participants? What are the methods that can be used to resolve this problem?

- Yes, it may be even more serious problem among virtual teams. Motivation and rating system in team can be good methods. Also, teams can influence the less productive participant and provide some sort of help to him. This is the way that will solve the problem without serious drawbacks.

17) Another huge problem that is correlated with the cultural difference is gender discrimination. Is it common to come across conflicts caused by the unequal attitude towards gender representatives of different cultures?

- I don't think that gender discrimination is a big problem. There are of course some who create a problem out of it but it's their own problem. All these attempts should be banned by the team lead.

18) What are other issues related to cultural differences that have a strong impact on virtual team performance? (Religion, gender, traditions, ideology)

- Religion is probably a major problem, but every issue can be eliminated by good coordination and respect to the corporate culture.

19) Time management challenges are still relevant, especially among international virtual teams. Is it hard to manage shifts in an online environment?

- That can be difficult, especially if the time difference is huge. Some team members will probably have to work in undesirable time. But it is the price that has to be paid.

20) Do you think that virtual teams will replace the real-life teams in the nearest future?

- I think that both will stay. Each has its own benefits and it really depends on situation.

Appendix D

Interview with the CEO of InspoHub Ltd. (4)

1) Do you believe that virtual teams provide opportunities that were unavailable for ordinary teams? If you do, can you list the most remarkable ones?

Potentially, yes. If it is a challenge for a company to find the needed skillset in the same place (town), they can benefit from adding remote team members with the right skills.

2) Communication is considered to be the most important factor in virtual collaboration. From your perspective, is it true?

Communication is the most important thing in any collaboration, not only virtual.

3) The online environment is providing users with machine translators, however, the language barrier is still a huge limitation for international virtual teams. Do you agree?

Communication is the key. If team members misunderstand what needs to be done, the result will be poor. The language barrier is a strong issue, and machine translators make it even worse if someone uses them to translate parts of text without context.

4) Misinterpretations may occur when a non-native speaker gets an unclear order or the instruction is written with the usage of uncommon words. Can misinterpretations and misunderstandings be avoided? What is the most effective way of avoiding them?

To make sure that the other team member definitely understood what was ordered, for example, by asking them to rephrase the enquiry and describe them with their own words. It's also important to adjust your language and accent to make it easier to understand for other team members with limited language skills.

5) Asynchronous communication caused by extensive usage of online chats may cause major problems in the virtual team and affect productivity. Is that true and are there any other challenges for online communication?

Online communication misses the tone of voice (if emojis are not in use), making a lot of room for assumptions (e.g. is that person strict to me? upset with me?) which can mislead and arouse concerns on a personal level. Asynchronous communication is also a problem because some messages are becoming irrelevant faster than they should.

6) Online conferences are more preferable than online chats in the case then it is important to build personal bonds inside the team. Is that so?

Yes. Hearing another person's voice and understanding its tone brings a personal touch which leads to bonding!

7) It has been said that trust and communication are closely correlated. What is the most effective way of building trust in an online environment?

Trust means allowing people to do their job without a manager/boss interfering and micro-managing. More trust is needed for virtual teams as you don't see how people work as you are not in the same office with them. When you clearly communicate your goals and expectations from your team and make sure that everyone is on the same page, the best thing you can do is to step out and let them do their job.

8) Pre-assumed stereotypes about nations or countries may negatively affect the process of building trust in the virtual team. How can the manager or the team leader minimise damage from this factor?

They need to work on their personal unconscious bias. There are certain stereotypes about people of certain nationalities are particularly lazy or hardworking. But at the same time, many people are not their stereotypes at all. It's the job of a leader to find the way how to build a diverse team and trust within that team.

9) Is it true that trust is easier to build when the team is working on a complicated project that requires higher expertise rather than when the team is completing an easy task?

I don't really know, to be honest.

10) Technologies let us ignore the geographical barrier, however, social isolation became a serious problem, which is especially recognizable in virtual teams. How can the manager resolve this issue?

I reckon that organising 'get-together' days is a good way to make remote team members feel inclusive (if a company has such an opportunity).

11) Virtual team collaboration is characterized by workplace cost reduction but at the same time hardware maintenance costs are becoming bigger. From your perspective, does virtual collaboration help to save money on collateral organizational expenses?

Definitely. Renting an office is a big cost, and I don't quite see how 'not renting one' causes higher hardware maintenance costs.

12) International virtual teams provide a theoretical opportunity to have 24 hours working day. Does it work in reality? Is it a feasible advantage?

Statistically proven, that people can't work with high concentration for more than 4-6 hours a day. Theoretically, people can be 'present at work', but productivity will be highly questionable. So, what's the point of having 24-h work days then? To procrastinate?

13) Online communication channels have to be organized by a manager. From your experience, how many different apps should a productive virtual team use to communicate? Any specific software?

Email and Slack are more than enough. There is no need to create a large network of channels because it is difficult to find the right one every time you want to send the message.

14) Will you agree with the statement that cultural differences are remaining the problem of management in the virtual team?

Cultural differences are the problem of management in any team. Not only virtual.

15) Is it true that creating a team online allows the company to hire employees with the highest expertise?

I doubt that. Unless your business is based in the middle of nowhere where good experts don't live. It all depends on the market field. Usually you can find good human resources near to your company's location and there is no need for hiring someone from far away.

16) Is social loafing still common among virtual team participants? What are the methods that can be used to resolve this problem?

I believe that it is all personal. Some people are lazy while 'working from home'. Some people barely complete any work while sitting in the office. If a team member is not keen/motivated to do a job well, their location will not change much. Some people feel more productive in the office, some of them feel better at home. It is all personal.

17) Another huge problem that is correlated with the cultural difference is gender discrimination. Is it common to come across conflicts caused by the unequal attitude towards gender representatives of different cultures?

Yes, it is still a huge problem. Gender pay gap, gender opportunity gap... A lot of work still needs to be done in terms of equality in today's world.

18) What are other issues related to cultural differences that have a strong impact on virtual team performance? (Religion, gender, traditions, ideology)

They are just the same as in 'real' teams. That means that religion, gender inequality and national celebrations may become problems.

19) Time management challenges are still relevant, especially among international virtual teams. Is it hard to manage shifts in an online environment?

I don't see a problem with time management. It is always possible to negotiate and find optimal solution for everybody.

20) Do you think that virtual teams will replace the real-life teams in the nearest future?

There is a potential for that, yes. However, I also believe that humans will need a personal connection and more reality in their lives in the future. And that might affect still building 'real-life' teams.

Appendix E

Interview with the certified professional project manager. (5)

1). Do you believe that virtual teams provide opportunities that were unavailable for ordinary teams? If you do, can you list the most remarkable ones?

Access to skills that might otherwise not be available is the most significant benefit I have experienced with virtual teams. So, the opportunity is to have greater opportunities to upskill your team.

2) Communication is considered to be the most important factor in virtual collaboration. From your perspective, is it true?

Yes, and those managing a virtual team must put more effort into effective communication. Without the constant 2-way element of face to face communication, confirmation that your intended concept has been received properly must be done proactively – where in face to face communication you can do this more readily. Confirming that a message has been received can also be more difficult, and virtual team members should have norms associated with confirmation of received messages to assist in that process.

3) The online environment is providing users with machine translators, however, the language barrier is still a huge limitation for international virtual teams. Do you agree?

I am not sure I have experienced a “huge” limitation brought about by language. This is because I have tested for language competency before selecting virtual team members. I certainly have had some shall issues and stumbles due to misinterpreting language, but will diligent techniques and follow up, have been able to overcome them fairly quickly.

4) Misinterpretations may occur when a non-native speaker gets an unclear order or the instruction is written with the usage of uncommon words. Can misinterpretations and misunderstandings be avoided? What is the most effective way of avoiding them?

This goes back to my answer to question 2. People working in a virtual team are best served by making the effort to confirm the receipt and understanding of any significant communication that is distributed. While this takes effort, it is worth that effort if the team brings a greater set of skills to the table. So, confirming receipt and understanding of significant communications, as a regular habit, helps avoid misinterpretations.

5) Asynchronous communication caused by extensive usage of online chats may cause major problems in the virtual team and affect productivity. Is that true and are there any other challenges for online communication?

If I am in a conference room, face to face with my team, typically there are two levels of communication happening. The first is the spoken dialog, the second is facial expressions shared between attendees in the room. In a virtual meeting, you have the two communication elements of a face to face meeting, PLUS a third invisible layer of online chats that can be occurring between participants. This invisible layer can be both productive and detrimental, or distracting. Establishing team norms, and having team members hold each other accountable regarding this “invisible” means of communicating is wise. Norms such as keeping online chats to a minimum during meetings, or restricting them to the topic being discussed in the meeting can be helpful.

6) Online conferences are more preferable than online chats in the case then it is important to build personal bonds inside the team. Is that so?

I am not sure I understand this question. What I believe the intent here is to say that conferences, where you can see each other, helps build rapport more quickly. I do believe that

is the case, absolutely. Nobody ever said they wanted to put a voice to a face, but they do say it is good to put a face to a voice!

7) It has been said that trust and communication are closely correlated. What is the most effective way of building trust in an online environment?

Communicate readily, and share, both business and personal information, just as you would to establish rapport in a co-located team. There is no difference in the NEED, just a difference in the approach to make it happen (using technology).

8) Pre-assumed stereotypes about nations or countries may negatively affect the process of building trust in the virtual team. How can the manager or the team leader minimise damage from this factor?

This is a challenge, as bias can enter the equation very easily. I have always advocated having a discussion about cultures and expectations early during the construction of the virtual team. Sharing what people expect, how and when to communicate, and encouraging team members to educate each other leads to better understanding. The manager should encourage, support, and participate in these sessions enthusiastically.

9) Is it true that trust is easier to build when the team is working on a complicated project that requires higher expertise rather than when the team is completing an easy task?

I do not have any experience that makes this statement true. Effective communication generates trust, be the task easy or hard.

10) Technologies let us ignore the geographical barrier, however, social isolation became a serious problem, which is especially recognizable in virtual teams. How can the manager resolve this issue?

Be mindful of time zones, allow time for interaction with team members that aren't always focused on business. Virtual coffee breaks where sharing of a person's hobbies, or family status, weekend activities etc. can help, if team members are willing to share in that manner.

11) Virtual team collaboration is characterized by workplace cost reduction but at the same time hardware maintenance costs are becoming bigger. From your perspective, does virtual collaboration help to save money on collateral organizational expenses?

Yes, with a caveat. Management time is greater to manage the communication and trust building needed to make a virtual team work effectively. If that management time isn't allocated, then there can be issues with virtual teams which can offset the savings.

12) International virtual teams provide a theoretical opportunity to have 24 hours working day. Does it work in reality? Is it a feasible advantage?

I have seen instances like 24*7 help desks, that pass along problem tickets "with the sun" so they can be worked 24 hours a day. It can work, but the work tasks must fit that model, as does the technology to ensure the latest and greatest status and deliverables are available to be worked as they are "passed around the globe."

13) Online communication channels have to be organized by a manager. From your experience, how many different apps should a productive virtual team use to communicate? Any specific software?

I believe this depends on the mission at hand. Fewer apps the better. The key is to ensure all virtual team members are fully versed and capable of using the selected tools to the fullest capacity, to ensure team members aren't disadvantaged by not having the latest communication or status, or versions of deliverables.

14) Will you agree with the statement that cultural differences are remaining the problem of management in the virtual team?

Yes, this must be managed diligently, patiently and with compassion for every team member and their expectations.

15) Is it true that creating a team online allows the company to hire employees with the highest expertise?

It expands the possibilities for doing so, yes.

16) Is social loafing still common among virtual team participants? What are the methods that can be used to resolve this problem?

Establish expectations for deliverables, set deadlines and have clear cut tasks to accomplish, and manage to those deadlines.

17) Another huge problem that is correlated with the cultural difference is gender discrimination. Is it common to come across conflicts caused by the unequal attitude towards gender representatives of different cultures?

It is a risk – but establishing norms early, and holding each other accountable is the best way to approach this, and minimize the potential issues.

18) What are other issues related to cultural differences that have a strong impact on virtual team performance? (Religion, gender, traditions, ideology)

Timezones and work life balance is a big factor, based on what you are working on.

19) Time management challenges are still relevant, especially among international virtual teams. Is it hard to manage shifts in an online environment?

Yes...role definition and doing your best to minimize the overall impact of time zone differences is all you can do. This problem will always exist, the impacts need to be minimized with compassion for the team members and the business at hand.

20) Do you think that virtual teams will replace the real-life teams in the nearest future?

No – certainly not in all cases. I think technology improvements might make it seem more and more like we are “co-located” which can reduce some of these issues, but that is not in the “nearest future” from what I have seen.

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