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Advantages and disadvantages of international virtual project teams

International virtual teams are a relatively new form of working organisation, closely linked to the global development of information technologies. Their dynamic development is causing growing interest in both advantages and weaknesses of this form of cooperation in international business. The aim of this review paper, in addition to organising terminology related to different types of teams, is to identify the benefits and shortcomings of this form of working organisation. To achieve this aim, the descriptive method and qualitative approach were used. The basic method of collecting qualitative data were unstructured individual and group interviews and observation, in particular participant observation. These were supplemented by data from secondary sources, such as research papers and reports from quantitative studies. A comparative analysis of the data collected from primary and secondary sources allowed to identify the advantages and disadvantages of international virtual teams, with made it possible to formulate conclusions and recommendations.

Keywords: international project, virtual project team, traditional project team, virtual communication

JEL classification: F23, J24, M16

Wady i zalety międzynarodowych wirtualnych zespołów projektowych

Międzynarodowe zespoły wirtualne są stosunkowo nową formą organizacji pracy, ściśle powiązaną ze światowym rozwojem technologii informacyjnych. Ich dynamiczny rozwój powoduje wzmożone zainteresowanie korzyściami, ale także słabymi stronami tego typu współpracy w biznesie międzynarodowym. Niniejszy artykuł ma charakter przeglądowy, a jego celem jest, oprócz uporządkowania terminologii odnoszącej się do różnych typów zespołów, zidentyfikowanie korzyści oraz zagrożeń, jakie niesie za sobą ta forma pracy. Aby osiągnąć tak sformułowany cel, wykorzystano metodę opisową oraz podejście jakościowe. Podstawową metodą zbierania danych jakościowych były nieustrukturyzowane indywidualne i grupowe wywiady oraz obserwacja, w szczególności obserwacja uczestnicząca. Zostały one wsparte danymi pochodzącymi ze źródeł wtórnych w postaci publikacji naukowych i raportów z przeprowadzonych badań ilościowych. Porównanie wyników analizy źródeł wtórnych i pierwotnych pozwoliło na zidentyfikowanie zalet i wad międzynarodowych zespołów wirtualnych, co ułatwiło sformułowanie wniosków i rekomendacji.

Słowa kluczowe: projekt międzynarodowy, wirtualny zespół projektowy, tradycyjny zespół projektowy, komunikacja wirtualna

Klasyfikacja JEL: F23, J24, M16

Introduction

Although virtual teams have been evolving since the early 1990s, from the beginning of the 21st century their development has accelerated and become more dynamic [Breuer, Hueffmeier, Hertel, 2016; Gilson et al., 2015; Hoch, Kozlowski, 2014]. In the contemporary reality, people are closely connected to the virtual world in both their professional and private life, and many major companies rely on virtual teams. It can be assumed that the dynamic and ceaseless development of virtual teams will continue, along with such trends as cost reduction and engaging talents from around the world. Companies operate under the pressure of having to achieve competitive advantage on a global scale, which leads to acceleration and diversification of business processes. It is evident that innovation has become the driving force and the key weapon on this competitive battlefield. This motivates companies to intensify their search for highly educated, skilled, and creative professionals able to work together as a project team, irrespectively of their place of residence. Communication technologies and constant access to the World Wide Web allow the members of international virtual project teams to work from home on a 24-hour basis, even when the actual project is located abroad.

This form of completing tasks has both positive and negative aspects and the reason for taking up this topic was to identify them. The following aims have been formulated: to organise terminology and definitions related to virtual teams and to identify their advantages and disadvantages.

To achieve these aims, the qualitative approach was applied in the research process [*Introduction to Research, 2017…*], which usually employs direct contact with individuals in a one-to-one situation or a group setting. The basic methods for collecting qualitative data include individual interviews, group interviews, observation, and active research. This article has been based on the following methods: unstructured individual and group interviews and observation, including participant observation. The interviews were conducted in 2016 and 2017 with managers attending Executive MBA courses and participants of post-graduate courses on international business and international marketing, who were actively involved in virtual project teams. The vast majority of EMBA students participated in international virtual projects, whereas among the students of other courses only a minority had such experience. Participant observation consisted in taking part in international projects such as 'Catching the future: Business and development exchange in the South Baltic region' in 2010–2012, 'RECReate: Revitalisation of the European Cultural Route in the South Baltic area' in 2013–2014; observation and unstructured group interviews were conducted during the 2016 international didactic project 'Pilot intercultural dialogue', involving students from the Netherlands, Mexico, Uganda, and the Faculty of Economics at the Uni-

versity of Gdańsk, Poland. The research also involved international students from Russia, Ukraine, and China as well as Erasmus students from Belgium, Croatia, France, Germany, Italy, Portugal, Spain, and the Netherlands who studied in Poland in 2015–2017. Polish and foreign students had to collaborate with students from Mexico, Uganda, and the Netherlands using solely virtual communication tools such as Skype and e-mail. In addition to participating in unstructured interviews during classes, students were also asked to write reports assessing the benefits and shortcomings of this type of cooperation. The same task was assigned to EMBA and post-graduate students. These methods were supplemented by collecting relevant information from secondary sources such as articles in journals, books, and reports. A comparative analysis of the collected materials allowed to formulate results and conclusions of the conducted research, which are presented using the descriptive method. It has been noted that, unlike quantitative systems, qualitative methods do not allow for generalisation, but their results can be used to formulate hypotheses and design questionnaires. Since the collected data can be handled by statistical methods to achieve results and draw generalised conclusions, it can be used as a base for further quantitative research.

The paper consists of four sections. Section one presents an overview of the terminology and provides the basis for further considerations and findings. The characteristic attributes of international virtual project teams are discussed in section two, making it possible to identify the benefits and shortcomings of this type of working organisation in sections three and four. The closing section presents conclusions and recommendations.

1. Terminology overview

In the era of permanent change in the business environment, extreme pressure is put on companies to be flexible, responsive, and faster than their competitors. Inability to follow, adapt to, or even initiate change can result in market failure. To counteract this risk, companies have to monitor their internal and external environment by conducting at least annual marketing audits and respond very quickly to the emerging threats and opportunities. The globalisation processes significantly expand the business environment, making it necessary to analyse the situation in a global context. Businesses are facing challenges resulting from constant and dynamic technological, economic, political, and social transformations and seeking technological solutions to improve their position in the market. The rapidly growing information technology sector supports many aspects of business activity and makes it possible to rely on and use talents from all over the world. Nowadays, thanks to the Internet, there is no need for employees to gather

in one workplace. This revolutionary change in working organisation is being implemented by an increasing number of companies operating in both domestic and foreign markets. In this era of dynamic transformations, which result in, i.a., dramatically shorter life cycles of products and industries, organisations try to ensure access to, instead of ownership of, necessary resources. This business philosophy also applies to people. Organisations employ talents, professionals, experts, and consultants, offering them contracts for the duration of a particular task or project. Many of them, in particular those who work as managers or members of project teams, are freelancers. International virtual teams thus increase the cultural diversity of human capital [Gilson et al., 2014] and transform the organisational structures of companies.

Along with the dynamic development of virtual teams, the relevant terminology is also evolving, and requires clarification.

The shortest and simplest definition of the term 'team' is proposed by the Business Dictionary, according to which it is 'a group of people with a full set of complementary skills required to complete a task, job, or project' [BD]. Another definition describes teams as 'small groups of interdependent individuals who share responsibility for outcomes for their organisations' [Sundstrom, De Meuse, Futrell, 1990]. A more elaborated definition views a team as a group of two or more individuals who interact socially (often face-to-face, but increasingly virtually), which possess one or more common goals, is formed to perform organisationally relevant tasks, exhibits interdependencies with respect to workflow, goals, and outcomes, has a differentiated structure of roles and responsibilities, and is embedded in an encompassing organisational system, with boundaries and linkages to the broader context and task environment [Kozlowski, Ilgen, 2006; Kozlowski, Bell, 2013]. As stated by Naresh [2009], 'team members need to learn how to help one another, help other team members realise their true potential, and create an environment that allows everyone to go beyond their limitations'; Hackman [2002] adds that a 'truly effective team will contribute to the personal well-being and adaptive growth of its members'.

We can distinguish traditional face-to-face (F2F) teams, conventional or collocated teams, and virtual teams. Members of traditional teams work together in physical proximity to meet pre-defined objectives and complete tasks [Chinowsky, Rojas, 2003], and meet regularly or immediately clarify all misunderstandings and emerging problems [Karoui, Guerkan, Dudezert, 2010]. One of the first studies of the differences between the results achieved by traditional and virtual teams was conducted by Burke and Chidambaram [1995], who found that 'face-to-face groups tended to exhibit more effective leadership and coordination competence over time', although in the long run 'electronic distributed work groups – with adequate time and training – can become cohesive and perform effectively'.

An early definition proposed by Townsend, DeMarie, and Hendrickson [1998] describes virtual teams as 'groups of geographically and/or organisationally dispersed co-workers that are assembled using a combination of telecommunication technologies to accomplish an organisational task'. Later, they began to be viewed as groups of interdependent people, sharing a common purpose and working towards realising this purpose across space, time, and organisation boundaries with the help of technology [Lipnack, Stamps, 2000; Shen, Lyytinen, Yoo, 2015]. The majority of researchers share a common point of view that can be found in their publications [Bell, Kozlowski, 2002; Chinowsky, Rojas, 2003; Hinds, Bailey, 2003; Breu, Hemingway, 2004; Hinds, Mortensen, 2005; Nader, Shamsuddin, Zahari, 2009; Huang, Kahai, Jestice, 2010; Clear, MacDonell, 2011].

The definition proposed by Karoui, Guerkan, and Dudezert [2010], based on a broad study of relevant sources [Bell, Kozlowsky, 2002; Johnson et al., 2002; Chinowsky, Rojas, 2003; Zigurs, 2003; Sarker, Sahay, 2003; Kirkman, Mathieu, 2005; Hertel, Geister, Konradt, 2005; Lee-Kelley, Sankey, 2008], seems the most fitting, as it describes a team as a group of people with complementary competencies who may be geographically and temporally dispersed, communicate via information technologies, and execute simultaneous and collaborative work processes in order to accomplish a common objective. The classification of various types of virtual teams has been presented by, i.a., Vlaar, van Fenema, and Tiwari [2008] or Duarte and Snyder [2011].

2. The essence of international virtual project teams

The term 'project' means a 'planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations', whereas a project team can be defined as a 'group of individuals assembled to perform activities that contribute toward achieving a common task-related goal' [BD]. It has to be said that projects are finite in nature, are subject to resource limitations, and have a certain uniqueness which differentiates them from routine operations [PMI, 1996].

A comparative analysis of various definitions [Pawlak, 2006; Haffer, 2009] reveals that projects are usually characterised in terms of the following attributes [Simpson, 2011]:
  – single use,
  – uniqueness,
  – fixed start and end dates,
  – specified purpose or goals,
  – implementation conditions,
  – responsibility,

– fixed budget,
– planning,
– monitoring results,
– involved parties.

According to Purvanova and Bono [2009], a virtual project team is character-ised by temporary lifespan and membership, spatial dispersion, and a wide use of computer-mediated communication. An international project team usually in-cludes members who originate from different organisations and geographic loca-tions [PMI; Babic, Ruzicka, Ruzicka, 2009], which gives particular significance to cross-cultural management [Adler, 1991; Stahl et al., 2010; Popescu et al., 2014].

An international virtual project team can therefore be perceived as a multicul-tural group [Adler, 1991] of individuals dispersed worldwide, without common past or future, relying on information and communication technologies [Lee-Kelley, Sankey, 2008] to work on specific projects. A similar but shorter definition describes virtual teams as not co-located groups of people who use electronic com-munication to work together toward a shared goal [Jones, Oyung, Pace, 2005]. Team members are usually located in different cities, regions, and even countries [Reed, Knight, 2010] and responsible for different tasks, such as entering new for-eign markets, launching new products, or conducting promotion campaigns [Bisbe, Sivabalan, 2017].

3. Benefits of international virtual project teams

The easiest way to highlight the benefits of virtual teams is to compare them to traditional teams at the following levels:
– organisational,
– individual,
– societal.

The first level, which represents a company's point of view, can be defined in terms of economic benefits. The members of a face-to-face international project team have to gather in the same, properly equipped office space, which increases rental and maintenance costs. Moreover, if they originate from different coun-tries, it is necessary for them to obtain a job permission and a visa, and for the com-pany to cover travel costs and living expenses as well as to provide them with tem-porary accommodation with access to the Internet, a telephone, etc. In contrast, the only cost incurred in the case of an international virtual project team is the cost of virtual communication, which requires a significantly smaller budget. Addi-tional benefits can be obtained if the geographic dispersion of team members al-lows them to perform their tasks around the clock, thereby shortening product

development time and response time to market demand, which is vital in many industries and gives companies a competitive edge. Cost savings yield measurable economic benefits and are thus perceived as the factor of most importance.

Advantages can also be drawn from the unlimited access to global talent. Highly specialised professionals, experts, and consultants with different backgrounds, education, experience, and expertise can be invited to join a virtual project team without the need to move to another part of the world. This diversity can facilitate sharing and transferring knowledge [Pinjani, Palvia, 2013; Klitmoeller, Lauring, 2013; Alsharo, Gregg, Ramirez, 2016] and enhance creativity and innovative thinking that brings benefits at both the organisational and individual level. The unlimited availability of talents [Gibson et al., 2014] and the possibility to leverage knowledge and expertise gathered around the world cannot be overestimated [Clear, MacDonell, 2011]. It has to be remembered, however, that innovations will not occur automatically – this diversity needs to be properly managed and requires wise leadership supplemented by a trust-building strategy [Zhi-Ping et al., 2011; Germain, McGuire, 2014; Schiller et al., 2014].

Project teams have flat and lean organisational structures [Morley, Cormican, Folan, 2015], which contribute to the avoidance of many bureaucratic procedures and hierarchical relationships that could hinder both productivity and direct, open communication. However, certain awkwardness between members of high power distance societies using high-context communication and those originating from egalitarian cultures often using low-context communication is possible. Working in an international virtual team can teach them different ways of communication, increase their cultural sensitivity [Zakaria, Yusof, 2015], and eliminate stereotypical thinking.

The interviewed EMBA participants and post-graduate students declared that working in international virtual project teams enriched their knowledge about other cultures, allowed them to gather more international experience, and increased their confidence: 'Since I started working in international virtual project teams, my confidence and self-esteem have increased' (A.S.).

Similar opinions were expressed by students who took part in the international virtual project 'Pilot intercultural dialogue' and had to collaborate with students from the Netherlands, Mexico, and Uganda – they found it very fruitful and stated that it was an excellent learning experience:
- 'Exchanging views and opinions with people from different countries was quite beneficial. It also helped to free me from stereotypical thinking' (M.S.);
- 'My experience of working in an international project team was fascinating and definitely very valuable' (J.P.).

At the individual level, open communication and knowledge sharing enhances the global mind-set of virtual team members. Experience as well as professional

and intercultural knowledge gained from cooperation with foreigners result in increasing their market value, contribute to furthering their career, and can increase their self-confidence. The gained experience can be used in many different fields of professional and social activity and contribute to building social networks.

From a societal point of view, this type of working organisation creates new opportunities for those who are not or cannot be mobile, such as the disabled or those who do not want to relocate to a foreign country and work in an unfamiliar environment. Freelancers or independent people who do not like routine work or being tied to one company can find fulfilment in working with virtual project teams.

4. Shortcomings of international virtual project teams

Communication and trust [Lockwood, 2015; Bisbe, Sivabalan, 2017] are the key factors determining the success of virtual projects. In many cases, their lack results in a failure. Sources of communication barriers include:
 – technological problems (lack of access to the newest technology, slow data transfer, incompatible equipment, interruptions in electricity supplies quite frequent in some African countries, etc.),
 – different preferences for using certain tools (instant messengers, e-mails, video-conferences, discussion forums, etc.),
 – cultural differences,
 – poor knowledge of English.

The success of a virtual project depends on the smooth and constant access to multiple communication technologies. Team members cannot rely on one tool – sometimes it is necessary for them to use synchronous communication tools whereas in other situations asynchronous systems are sufficient. The continual technological development generates costs by making it necessary to purchase, install, and maintain new equipment.

Both the participants of post-graduate courses and the students complained about how time-consuming the cooperation was because of the technological and cultural differences hindering smooth and effective communication.

When the 'Pilot intercultural dialogue' project started, it transpired that students from Uganda did not have e-mail and Skype accounts. Although they gradually obtained e-mail addresses, the Polish and Erasmus students were still unable to contact them. Communication with students from Mexico via e-mail was easier, but synchronous tools like Skype or instant messaging could not be used because of the time difference. Numerous students located in Poland reported

that culturally and technologically speaking it was the easiest to communicate with the students from the Netherlands:

– 'I must admit that our cooperation wasn't successful at all. I couldn't contact the Mexican and Ugandan students, it was just impossible because they didn't write back. I could only get in touch with the people from the Netherlands' (P.P.);

– 'At this point it is essential to say that, unfortunately, it was impossible to contact the people from Uganda and Mexico' (J.P.).

The students reported that even when they managed to contact the students from Mexico, there were language problems, in particular when it came to video conferencing through Skype. It can therefore be concluded that the fundamental communication problems resulted from the incompatibility of technological tools, cultural differences, and language barriers.

Concerning cultural differences [Shachaf, 2008], it has to be noted that the very open and direct way of communication characteristic of the Western culture is not accepted by the majority of other cultures, which perceive it as impolite or even rude. This observation was confirmed by the interviewed Polish managers, who also stated they had less problems communicating with Asians than their more open and straightforward German or Dutch teammates. This communication clash is the source of many conflicts and leads to mistrust, which hinders effective collaboration in international virtual project teams. Additionally, members of fluid-time societies have different attitude toward the concept of time, deadlines, and timetables, and are thus expected to not complete their tasks on time. Such delays can make the work of other team members impossible, which can lead to project failure or significantly increase the costs.

The interviewed managers pointed to communication barriers, very often resulting from different ways of thinking and solving problems, as the most significant impediment to collaboration.

The lack of non-verbal communication characteristic for face-to-face interaction, difficulty in sharing tacit knowledge, and the feeling of isolation also constitute barriers that can result in project failure. The virtual communication of geographically dispersed team members of the project team is aimed strictly at completing specific tasks and leaves no room for social interaction, such as informal chats at the coffee-machine or during lunch.

Conclusions

The research results show that the fast-growing phenomenon of international virtual project teams has both positive and negative aspects. In addition to maxi-

mising all the advantages, it is also vital to reduce the disadvantages associated with virtual work in general and the performance of international virtual project teams in particular. Although having professionals and talents from all around the world work together virtually to complete projects is undoubtedly beneficial from both an organisation and individual point of view, the cooperation is not always problem-free. Lack of trust and communication barriers resulting from technological or cultural differences are the most often reported obstacles to the success of international virtual project teams.

It is recommended that sufficient time be dedicated to the preparation phase of the project, i.e., to clearly describing the goals, time limits, responsibilities, and communication strategies, methods, and tools, as well as preparing an exact schedule of regular virtual communication. Before an international virtual team begins is work, its leaders and members should have an induction period with special training sessions and integration activities which will provide an opportunity for them to become acquainted. It can also diminish the feeling of isolation and psychological distance.

Leading international virtual project teams is a challenge for managers who have to demonstrate a wide range of managerial skills and attributes, including a global mind-set and cultural sensitivity. Although this issue does not fall within the scope of this paper, it certainly requires further and deeper research.

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