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Types and terminology of remote project teams

N. Krasnokutska[†], T. Podoprykhina[#]

Purpose – to develop project management terminology.

Findings. This study indicates the significant changes that occurred in working conditions in the last centuries that led to the new models' formation of employee interaction at enterprises, especially remotely, such as distributed, virtual, and dispersed project teams. Clarification of the terminology of project management indicates the meaning of the term "distributed team". This paper separated the term from several related concepts and demonstrated the benefits of integrating distributed project teams within an enterprise.

Originality/Value. Paper analyzes the term, features and differences of the distributed project team from other types of remote teams.

Practical implications. The terminology of remote project team can be used by project managers from a theoretical point of view.

Research limitations/Future research. Future research can focus on the way to manage a distributed project team effectively.

Paper type – theoretical.

Keywords: project management; project team; distributed project team; collocated project team; virtual project team; dispersed project team.

[†]*Natalia Krasnokutska,*
National Technical University "Kharkiv Polytechnic Institute",
Kharkiv, Ukraine,
e-mail: krasnokutskaya.natalia@gmail.com,
https://orcid.org/0000-0001-8184-3816

[#]*Tetiana Podoprykhina,*
National Technical University "Kharkiv Polytechnic Institute",
Kharkiv, Ukraine,
e-mail: tanyaoset3007@gmail.com,
https://orcid.org/0000-0001-7908-8639

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Види і термінологія віддалених проектних команд

***Наталія Краснокутська*[‡], *Тетяна Подоприхіна*[‡]**

[‡]Національний технічний університет «Харківський політехнічний інститут», Харків, Україна

Мета роботи – розвити термінологію управління проектами.

Результати дослідження. Це дослідження вказує на значні зміни, що відбулися в умовах праці в останні століття, що призвели до формування нових моделей взаємодії співробітників на підприємствах, особливо віддалених, таких як віддалені, віртуальні та розпорошені команди проектів. Уточненою термінологією управління проектами вказано на значення терміну «розпорошена команда». У цій роботі цей термін виокремлено від кількох суміжних концепцій та продемонстрано переваги інтеграції розподілених проектних команд у межах підприємства.

Оригінальність/Цінність/Наукова новизна дослідження. Проаналізовано термінологію, особливості та відмінності віддаленої команди проекту від інших типів віддалених команд.

Практичне значення дослідження. Термінологія віддаленої команди проектів може використовуватися менеджерами проектів з теоретичної точки зору.

Обмеження дослідження/Перспективи подальших досліджень. Майбутні дослідження можуть зосередитись на способі ефективного управління віддаленою проектною командою.

Тип статті – теоретичний.

Ключові слова: управління проектами; проектна група; розподілена команда проекту; класична команда проекту; віртуальна команда; розпорошена команда проекту.

Виды и терминология удаленных проектных команд

***Наталья Краснокутская*[‡], *Татьяна Подоприхина*[‡]**

[‡]Национальный технический университет «Харьковский политехнический институт», Харьков, Украина

Цель работы – развить терминологию управления проектами.

Результаты исследования. Выявлены существенные изменения, произошедшие в условиях труда за последние столетия, которые привели к формированию новых моделей взаимодействия сотрудников на предприятиях, особенно удаленно, таких как удаленные, виртуальные и рассредоточенные проектные команды. Уточненная терминология управления проектами указывает на значение термина «распределенная команда». В этом документе этот термин отделен от нескольких связанных понятий и продемонстрированы преимущества интеграции распределенных проектных групп в рамках предприятия.

Оригинальность/Ценность/Научная новизна исследования. Проанализированы терминология, особенности и отличия удаленной проектной группы от других типов удаленных команд.

Практическое значение исследования. Термин удаленная проектная группа может использоваться менеджерами проектов с теоретической точки зрения.

Ограничения исследования/Перспективы дальнейших исследований. Дальнейшие исследования могут быть сосредоточены на способах эффективного управления удаленной проектной командой.

Тип статьи – теоретический.

Ключевые слова: управление проектами; проектная группа; разделенная проектная команда; совместная проектная команда; виртуальная проектная команда; удаленная команда проекта.

1. Introduction

While practicing project managers, we observed numerous terminological confusions to classify their teams based on their remote work organization. Today, the difference between one form of the project team and another requires speaking the same language with business stakeholders and project managers in the scientific community. Recognizing the emergence of distributed project teams at the enterprise is essential today during the pandemic that motivated us to develop the article. The investigation way of this paper allows identifying areas that were not sufficiently considered in previous papers. This paper also helps to determine the main advantages of the distributed project teams.

2. Theoretical background

As the work organization format in teams is popular within the corporate system, the number of studies that examine team concepts increased (*Kozlowski & Bell, 2016*).

Many scholars reflected distributed teams in project management processes during the last century. In particular, researchers (*Harrison, Wheeler & Whitehead 2003*) focused on the digital revolution and the technologies that gave the virtual space for interaction among employees in distributed project teams, which are indefinite without excessive resource consumption. Another scientist (*Glebov, 2010*) focuses on international relations development and its impacts on global organizations. Available literature extensively focuses on the correlation between distributed project team productivity and the geographical distance among team members (*Zibratt, Hoegel, 2009*). Some authors (*Bergel, Balsmer, 2008; Gajendran, Harrison & Delaney, Klinger, 2015; Berntzen & Wong, 2019*) suggest using digital communication tools between team members and other processes for significant interaction in distributed project teams. Simultaneously, according to Schulze, companies should consider the challenges distributed teams face to mitigate technology (*Schulze, 2017*).

With a wide range of communication channels possible, distributed teams are becoming increasingly popular in small and large organizations (*Eubanks et al., 2016; Noroozi, 2018*). Other favorite terms for the remote work environment are virtual, scattered, or dispersed work organization types in the projects (*Makarius & Larson, 2017*). Authors assume that virtual teams are not about the distance among team members and the organizations, but more about the team's function (*Liao, 2017*). In terms of disadvantages still, we see that authors see risks behind such a work organization from the publications. Virtuality on a team does give the leader, organization, and team mobility, which still encourages interpersonal challenges as social contact decreases (*Hoch & Kozlowski, 2014*). The mentioned difficulty is also supported by the fact that virtual teams work in different time zones regularly, resulting in synchronization problems (*Rutkowski et al., 2007*). Fixing requires that modern team communication be more predictable, while regular time slots for team members' meetings should be set well in advance (*Gilson et al., 2015*). Another opinion on how to solve these communication issues in virtual teams is that this challenge is resolvable when the organization deploys the correct software tools and provides its staff members with the proper training (*Wildman & Griffith, 2015*).

There is an opinion on differences among team types that, unlike virtual, scattered teams or co-located teams of permanently placed team members in central locations (centers), distributed teams only positions the team leader in a central (*Bos, Shami, Olson, Cheshin & Nan, 2004*).

Nowadays, it becomes very typical for teams to be spread geographically and use communication tools (*Zaveri, 2020*). The recent studies are based on the abundance of reliable analysis and relevant corporate team knowledge (*Day, Fleenor, Atwater, Sturm & McKee, 2014*).

Despite the relatively large number of papers on this issue, the relevance of the further research of the new organizational structures formation to maintain a high level of project management efficiency still stands. Consequently, the existing developed practical tools require scientifically reliable and verified project management theories, which define the study's purpose and primary objectives.

3. Problem statement

This article aims to identify and summarize the typical vital features of a distributed project team based on secondary data and literature review analysis.

4. Methods and data

The literature review describes the key features of the globalization period in more detail, how technology has affected the global market, and organizational principles that resulted in the new form of project organization via distributed project teams. Secondary data from employment, skills, education, and technologies are further elaborated on in the results section. The chosen method consisted of the three main steps: (1) Collection of studies; (2) Selection of the proper ones; (3) Key points assuming.

Various sources and databases such as Google Scholar, Springer, ProQuest, ScienceDirect served as sources for summarizing the literature and secondary data. The literature review was performed on the basis of the top-ranked journals and articles using the Boolean search operators and the Google Scholar database and searching articles in incognito mode for more reliable results. We relied on the sources above for its provision with the most significant worldwide library of business information, and the sources could be filtered by reputation and quoting rate in various areas. Besides, we applied the advanced search logic to obtain more precise results via browsing this review's main keywords. Our structured literature review includes beneficial recommendations for future research and is also relevant for a practical perspective. Our literature review results are especially relevant for project managers to use the correct terminology to mainly influence stakeholders' reactions and, thus, the company's reputation.

5. Results and Discussion

Active development and introduction of modern technologies, globalization, changes in the system of needs, and many other factors have led to the significant expansion of the companies' and organizations' capabilities. As for today, the employees of a company can live in different cities or even countries, speak various languages, and belong to different cultures but still work in one corporate environment (*Paul, 2016*).

Nevertheless, it was not always the case, as at the beginning of the 19th century, the specialists did not work remotely, and the employees' workplace in the office building was employment's mandatory attribute. In the mid-1900s, organizations' development strategy shifted to a single and controlled space to ensure maximum productivity of human and production units (*Harrison, 2003*). In the 1960s, office space worked as a communications environment where business executives tried to streamline the information flow between employees and remove physical barriers among colleagues. In the 1980s, the workplace's understanding changed towards the computerization around the world, when computers evolved and became more accessible. Computers and the digitalization era have begun to organize office workplaces in a new manner to optimize specialists' actions and transform information from written sources to digital format.

At the beginning of the 1990s, the introduction of "new ways of work" in response to the awareness that technology transforms cultural, social, technological, and construction processes worldwide (*ECATT Final Report, 2000*) caused the second phase the

office space change. Meantime, the virtual world and digital instruments reduced office employees' need in synchronous, direct communication, and work in a single location to perform specific tasks. Today, the global economy features the increasing virtualization of products, processes, organizations, and relationships. New production in the economy no longer requires people to work together in the same physical space to gain access to the tools and resources they need for productive activity. Simultaneously, it allows them to distribute work among employees (*Harrison, Wheeler, 2003*).

Globalization is another trend in the modern world. The "globalization" term is widely popular and determined in various ways (*Hoegl, Proserpio, 2007*). From "the process of global economic, political, cultural and religious integration and unification" to "the current trend that applies to organizations crossing economic and geographical boundaries and changes the regional perspective to global" (*Glebov, 2010; Bhagwati, 2004*). Globalization is also described as a feeling that the world is getting smaller, while the world economy is becoming wider (*Friedman, 2005*). According to M. Friedman, organizations can connect different societies, geographic regions to achieve business objectives and search for opportunities to benefit from. Over the past decades, this process has accelerated, as technology contributed to information and knowledge flows, and led to the search for human resources irrespectively to the geography. Many authors agree that modern times' technological progress accelerated human ability to interact as a global society in different aspects and contributed explicitly to achieving business goals (*Friedman, 2005; Martinelli, Waddell, 2010*).

The following factors (*Priklandnicki, Audy, Evarito, 2006*) shifted the massive investments from local to global markets on the point of creating new cooperation forms:

– raising awareness of the benefits of doing business around the world, including customer knowledge and local conditions;
– shorten project timelines and reduced time to enter the product market due to time differences in different time zones;
– availability of a global base of the qualified resources on a global scale for the products development at different prices (*Herbsleb, Moitra, 2001*);
– investment allocation by region also minimizes risks in natural, economic, and other disasters (*Lehtonen, 2009*).

To support key strategic initiatives in global trends such as globalization, outsourcing, and strategic partnerships, organizations increasingly turn to geographically dispersed groups that rely on technology and digital communication tools for distributed project team members.

However, before discovering the benefits of such a team, in our perception, it is worth defining the terminology, as there are several similar concepts in papers and project management practice (*Table 1*).

Table 1

Analysis of the project teams types*

Term	Definition	Examples
Co-located (traditional) team	Team members are working at one physical location with an ability to collaborate and communicate with each other face to face.	Production and manufacturing institutions as well as aviation companies or IT such as Yahoo, IBM
Distributed team	A cross-functional team, i.e., working at geographically distributed offices worldwide and interacting with each other using digital software tools to carry out the project tasks.	Companies like Trello, Basecamp, InVision, Zapier
Virtual team	A group of geographically distributed employees who deal with at least one task supported by information and communication technologies without physical offices (*Hoegl, Proserpio, 2001*)	Companies like GitLab, Automattic, Clevertech, FlexJobs
Scattered or Dispersed team	A project team of geographically distributed members is not a cross-functional team, most of whom work in the headquarters and interact with information technology for project tasks.	The companies like eBay, SAP, Yandex, Elastic, Volvo

*Source: Authors' elaboration based on their theoretical generalizations.

According to the previous table's theoretical study, they identified types of teams similar in terms of belonging to one project team but differed in their location and use of certain information and communication technologies. Also, dispersed team is very similar to a dispersed team, so further, we consider the features by which their differentiation becomes more understandable. For example, if the project has cross-functional teams in Kyiv, Chicago, San Francisco, and Bangalore, this can be called a project with four distributed teams. If the project includes four teams, each of which includes two developers from Kyiv, a manager from San Francisco, an analyst from Chicago, and a test engineer from Bangalore, these teams are not cross-functional since they can not be replaced one by another.

In this regard, the «distributed team» term, which the author defines in *Table 1*, will be further used in this study.

In general, distributed teams have many potential benefits (*O'Duinn, 2018*), the main of which, in our opinion, are:

– the development of world markets. With the expansion of business, organizations have the opportunity to gain experience in new markets through mergers/acquisitions or the creation of affiliated companies located in such markets;
– the world's talent base. Increasingly, companies are looking for highly skilled personnel outside the home country. The working visa, travel expenses coverage, and new employees willingness to make the business travels - are the prerequisites that company managers must find out at the stage of formation of a distributed team;
– the costs reduce. Companies often seek to cut down the costs by attracting external suppliers to regions with fewer overheads. For example, an outsourced service provider may represent an obvious cost savings of 25% compared to a domestic supplier. However, although individual team members' hourly costs may be lower, the reduced productivity and additional travel costs may offset the expected savings from attracting employees from other regions. Therefore, it is crucial to consider such a risk and reasonably decide to build a distributed team.

In the early 2000s, several researchers (*Bergiel, 2008; LaBrosse, 2008; Shachafa, 2008; Kuropuarchichi, 2009; Siebdrat, Hoegl, Ernst, 2009; Vasudev, 2010; Karia, 2016; McNeese, 2020*) consider the benefits determination of distributed teams. The summary of the distributed team advantages considered by the authors depicts *Table 2.*

Table 2

Main advantages of distributed teams in the papers 2008-2020*

#	Benefits	Authors							
		Bergel	LaBrosse	Shachafa	Kuropuarchichi	Siebdrat	Vasudev	Karia	McNeese
1	Reducing operating costs	yes	yes		yes	yes	yes		yes
2	Using the world talent base	yes	yes	yes	yes	yes	yes		yes
3	The flexibility of the talents search		yes		yes			yes	
4	Increase in productivity		yes		yes			yes	
5	Variety of personnel	yes	yes		yes	yes			yes
6	Reducing travel expenses	yes	yes		yes	yes			
7	Optimize the project life cycle			yes	yes	yes	yes		yes
8	Livelihood level increase				yes				yes
9	Reducing the environmental impact		yes				yes	yes	
10	Improving business strengths	yes	yes		yes	yes		yes	

*Source: Authors' elaboration based on (*Bergiel, 2008; LaBrosse, 2008; Shachafa, 2008; Kuropuarchichi, 2009; Siebdrat, Hoegl, Ernst, 2009; Vasudev, 2010; Karia, 2016; McNeese, 2020*).

The revealed benefits indicate that distributed teams have vital differences from the collocated teams. Firstly, other teams or be the members of another organization engage team members in the same way as the team members of collocated teams. Secondly, distributed teams, unlike collocated teams, are constantly changing, so the membership in such teams is not permanent. Thirdly, the distributed teams are defined by a complex structure of subordination caused by team members' distributedness from each other and time difference.The main features that distinguish the distributed teams from the collocated teams have become scientific research of the authors (*Zigurs, 2003; Curseu, Schal, Wessel, 2008; Schlenkirch, 2009; Ahuja, 2010; Fovler, 2015*). We made the systematization of available copyright approaches in *Table 3*.

Table 3

Comparative analysis of the collocated and distributed teams in the papers dated 2003 – 2015*

#	Comparison Criteria	Authors				
		Zigurs	Curseu	Schlenkirch	Ahuja	Fovler
1	Collocated / Distributed groups	yes	yes	yes	yes	yes
2	One on one / Virtual Collaboration	yes	yes	yes	yes	yes
3	Different / Same Goals		yes	yes		
4	Different / Same time			yes	yes	
5	Different / Same Culture			yes	yes	
6	Various / Same organization			yes	yes	yes
7	One / Several teams			yes		yes
8	Specialized / Multifunctional team			yes		yes
9	Static / Flexible team			yes	yes	yes

*Source: Authors' elaboration based on the (*Zigurs, 2003; Curseu, Schal, Wessel, 2008; Schlenkirch, 2009; Ahuja, 2010; Fovler, 2015*).

According to *Table* 2 and *Table* 3, the difference between collocated and distributed teams is significant. Therefore, there is considerable discussion in the scientific world to find the answer to the question under which conditions it is necessary to use the team's collocated or distributed model. The papers of (*Mendoc, 2007; Thomas, 2008; Webster, 2008*) highlight attempts to determine such conditions. The mentioned scholars consider the following main requirements when making the decision:

– The team's size is essential (regardless of whether the team is collocated or distributed). Smaller teams work better than larger teams across various aspects, including trust, productivity, and knowledge sharing.
– The management scale matters - the teams' distribution should be based on team members' self-organization and their ability to build relationships distributedly and manage work alone. Thus, skilled management is more critical in distributed teams than in collocated ones.
– Social and team spirit is vital for the work performance - the team identity sense formation, trust in one another, and social development affect the atmosphere of both a distributed and collocated team. Part of this factor is related to the management style.
– The technical aspect of communication support is vital for the distributed teams; therefore, all team members must have excellent skills in their application (and the communication tools must be useful and reliable). Such interactions are possible via shared platforms, webchats, SMS, phone, and the like. One-to-one collaboration is considered to be a more straightforward form of communication, since, under these conditions, there will be subtle non-verbal signals.

Researchers have not found yet the fundamental difference between collocated and distributed teams regarding other factors, such as productivity, quality, and performance.

6. Conclusion

Consequently, the economic, legal, political, and cultural labor landscape changes (*Thomas, 2008*), leading to an increase in employees' geographical distribution and all the inherent complexities, are still relatively new to modern organizations. That leads to the distributed organizational forms of cross-functional interaction, where geographically distant employees use modern communication technologies and perform everyday tasks. Nevertheless, understanding the content, purpose, and benefits of the distributed teams are not enough to ensure their effective implementation.

When doing the literature review in this paper, we developed terminology to name different work organizations according to remote working methods, such as distributed team, dispersed, and virtual project team, and outlined the team's co-located type. Besides, this study highlights the advantages of distributed team integration into the corporate environment.

In our opinion, further research should relate to the substantiation of the SMART criteria for the feasibility of distributed teams in project management and methodological approaches to planning effective communication between team members.

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8. The competing interests

The authors declare that they have no competing interests.

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