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PROJECT MANAGEMENT IN THE FACE OF CHANGE. IDENTIFYING TRENDS AND THEIR IMPACT ON TEAM COMPETENCIES

ZARZĄDZANIE PROJEKTAMI W OBLICZU ZMIAN. IDENTYFIKACJA TRENDÓW I ICH WPŁYWU
NA KOMPETENCJE ZESPOŁU

Keywords: project management, project team, project management trends, project team competencies

Słowa kluczowe: zarządzanie projektami, zespół projektowy, trendy w zarządzaniu projektami, kompetencje zespołu projektowego

Abstract

The aim of the article is to identify the trends shaping contemporary project management practices, with particular emphasis on changes in the competencies required of project team members. The results obtained from the author's own research, as well as the analysis of the literature, have made it possible to identify key trends influencing current project management practices and to highlight the fact that changes in project management lead to evolving competency requirements for those involved in project implementation.

Streszczenie

Celem artykułu jest identyfikacja trendów kształtujących współczesne praktyki zarządzania projektami ze szczególnym uwzględnieniem zmian w zakresie wymaganych kompetencji członków zespołów projektowych. Wyniki uzyskane w badaniach własnych, jak i analiza literatury, pozwoliły zidentyfikować kluczowe trendy, które kształtują obecną praktykę zarządzania projektami oraz wskazać na fakt, że konsekwencją zmian w zarządzaniu projektami są zmiany w potrzebach kompetencyjnych osób realizujących projekty.

INTRODUCTION

Today's project management takes place in a dynamic and changing environment resulting from constant economic, technological, and social changes. The consequence of this is changes in the competence needs of people implementing projects. The purpose of the article is to identify trends shaping contemporary project management practices, with particular emphasis on changes in the required competencies of project team members. The structure of the article has two parts: theoretical and empirical. The theoretical part includes a review of the literature on current trends in project management and related competency changes in project teams. The empirical part presents the results of the own survey. In the survey, the respondents shared their opinions on the observed trends in project work and the resulting changes in the competences of project team members. The results of the study were developed using descriptive statistics. The presented results can be a valuable source of knowledge for both researchers and practitioners, indicating the competence needs of project teams. The main limitation of the study is its scope. The sample included 86 respondents, which results in limited possibilities of interpreting the results. However, the article is a starting point for further analysis of issues related to the future of project team management in the era of digital transformation. The authors plan to expand the research sample in the future.

TRENDS IN PROJECT MANAGEMENT AND THE COMPETENCES OF PROJECT TEAMS

In the face of uncertainty and rapid technological change, projects are seen as key tools for the implementation of organisational strategies [Ochoa Pacheco et al., 2023, p. 2]. In the last decade, changes have been observed from the traditional approach to project management, based on classic planning, to agile management, where the creativity and speed of the recipient-oriented project team play a major role [Peszko, 2022, p. 141]. This is evidenced by: the PRINCE2 Agile methodology [AXELOS, 2021], changes in the seventh edition of PMBoK [Project Management Institute, 2021] or changes in the seventh edition of PRINCE2 [AXELOS, 2023], as well as the great popularity of the SCRUM methodology [Schwaber, Sutherland, 2020]. Agile methodologies enable fast and flexible project delivery and also support the integration of new technologies such as artificial intelligence and big data analytics [Felcenloben, 2023, p. 4]. However, in many projects, the condition for effective management is the need to use uniform procedures and similar general knowledge, which is characteristic of the classic cascade approach to project management. It seems increasingly obvious that hybrid project management methodologies are a new trend combining both classic and agile project management approaches [Gemino et al., 2021, p. 165]. The integration of the agile approach with the classic approach allows the methodology to be adapted to the specifics of the project and the organisation. Hybrid models provide greater flexibility, iteration, and the ability to respond quickly to changes and customer needs [Stan et al., 2024, p. 32]. With the growing popularity of agile and hybrid methodologies, project teams must develop not only substantive competences, but also competences related to coordination, communication, inter-team cooperation, conflict resolution, quick decision-making, and working under time pressure [Peszko, p.170].

As a result of the COVID-19 pandemic, there has been an increase in the importance of remote work in virtual project teams, which has resulted in a significant increase in the use of digital tools, online communication, and flexible work structures to manage geographically dispersed teams, which has strongly influenced the process of project work coordination [Teichert et al. 2024, pp. 234–236; Adeniran et al., 2024, p. 2644] the landscape of project management is undergoing significant transformation. The integration of digital technologies is reshaping traditional project management practices, presenting both opportunities and challenges. This paper explores the future of project management in the digital era, focusing on emerging

trends, evolving challenges, and potential opportunities. The digital revolution is driving several key trends in project management. First, the adoption of advanced technologies such as Artificial Intelligence (AI). Digital collaboration tools have enabled global teams to communicate effectively and complete projects in a remote environment [Savio, Ali, 2023, p. 240]. The use of this type of solution in project work often has a positive effect on improving the team's work and allows you to reduce the costs of project implementation [Bernat et al., 2023, p. 8]. Undoubtedly, remote work has enabled organisations to tap into a global talent pool [Dahmer, 2024]. On the other hand, the importance of properly motivating project team members, as well as communication skills, has increased. These changes have made it necessary to move away from classic project management, based on control, in favour of management based on the commitment, trust, and willingness to cooperate of team members [Tornjanski et al., 2023, p. 68]. Working on projects in a remote environment requires the constant, close cooperation of team members, despite the lack of face-to-face meetings. As a result, virtual teams must be increasingly interdisciplinary and self-organising. The importance of trust, transparency, and decentralised decision making is increasing. It becomes crucial to ensure an effective flow of knowledge and develop soft skills in teams. Not only is high substantive competence needed, but also social skills that enable good communication and cooperation [Peszko, 2023, p. 171]. The problems of virtual teams include problems with effective communication, knowledge sharing, building trust, and working conditions conducive to cooperation [Bernat et al., 2023 p. 18; Teichert et al., 2024 p. 145; Wawak, 2024, p. 62]. Modern project management is increasingly based on data and advanced analytics. The development of information technology and digitisation makes artificial intelligence (AI) an integral part of modern project management today. With fast and accurate AI-assisted analysis of large disparate data sets (big data), but also historical data, it is possible to forecast trends more accurately and make better strategic decisions [Adeniran et al., 2024, p. 2641]. AI enables automation of administrative tasks, better risk forecasting, more efficient resource management and cost estimation, and automation of routine processes, or real-time data analysis [Savio, Ali, 2023; Felcenloben, 2023, p. 20]. Artificial intelligence supports all phases of the project lifecycle, from planning and scheduling, through implementation, to effects analysis [Gorski et al., 2024, p. 8]. AI appears to be a tool that supports not only the operational implementation of projects, but also project portfolio management and strategic decision making. AI-powered systems can integrate data from multiple projects, provide recommendations to executives, and support the organization's learning process based on project experience [Felcenloben, 2023, p. 12]. However, the implementation of new technologies can be complex and expensive. The implementation of AI requires not only the right technological infrastructure, but also an organizational culture conducive to openness to change, the development of digital and social competences [Iriogbe et al., 2024, p. 2820; Adegbite et al., 2023, p. 530]. It should be remembered that AI is a technology, so it ignores (at the moment) human emotions and feelings. She lacks empathy, intuition, ambition, creativity, and cannot read non-verbal signals. Therefore, a prerequisite for the success of the use of AI is the close cooperation of artificial intelligence with the general, emotional, and social intelligence of the manager himself [Bieniok, 2024, p. 19]. The growing importance of information technologies and the dependence on digital platforms also generates the problem of cybersecurity and data protection in project management. This affects project management practices, with an emphasis on risk management and regulatory compliance (e.g., GDPR) [Adeniran et al., 2024; Stan et al., 2024, p. 40].

Creating virtual project teams is also part of the trend of sustainable management by reducing the carbon footprint and using resources more wisely [Teichert et al., 2024, p. 245]. In addition to business goals, social, environmental, and ethical aspects are increasingly taken into account in project implementation in project practice. The success of a project begins to be measured not only through the prism of the three classic constraints of time, cost, and scope of the project, but also by taking into account its compliance with Environmental, Social and Corporate Governance (ESG) values [Adegbite et al., 2023, p. 535]. The time, cost, and scope of the project are becoming insufficient for the needs of modern business. The sustainability

perspective is becoming an important aspect of projects [Vergara et al., 2025, p. 16; Soares et al., 2024, p. 45, Bernat et al., 2023, p. 16]. It enables the search for the best solution not only for the organisation, but also for the well-being of the community [Moreno-Monsalve et al., 2022, p. 12].

Identified trends, such as the shift from traditional to hybrid project management models, the growing use of agile methodologies, the rise of remote work, the use of advanced technologies (AI), and a greater focus on results than processes, are changing the demands on project managers and project team members [Teichert et al. 2024, pp. 236–238]. Skills related to virtual communication and managing distributed teams are becoming very important. The rapid pace of technological change requires project team members to continually update their skills and adapt to new tools and methodologies. Currently, the project manager must not only be a planner and coordinator, but also an innovator, technology partner, and a forerunner of change. Must combine soft skills with analytical, technological, and leadership skills [Adeniran et al., 2024, p. 2642]. Therefore, the role of competences such as communication, emotional intelligence, the ability to build relationships, and flexible leadership has increased significantly [Stan et al., p. 27–28]. As technology evolves, project teams must be able to quickly adapt to changing tools, methods, and stakeholder expectations. Communication skills become crucial because they enable effective collaboration in interdisciplinary teams that bring together specialists from different cultures [Oyekunle et al., 2024, p. 1777]. Project managers are increasingly expected to develop the so-called “power skills”, i.e. communication skills, leadership skills, high emotional intelligence, and adaptability to change. From members of project teams, The following skills are required: cooperation, commitment, self-organisation, as well as the ability to work in a multicultural and digital environment [Ochoa Pacheco et al., 2023, pp. 7–17]. The need to implement digital technologies and the growing importance of sustainable project management cause an increase in the demand for digital competences in project teams [Rincon-Guio et al., 2023, p. 234].

In summary, to effectively respond to changes in the environment, organisations should invest in dynamic competency management models that balance development technology with active support for soft skills. Only in this way will it be possible to fully use the potential of new technologies, while maintaining the key knowledge and experience resources of project teams [Bushuyev et al., 2024, p. 405].

RESEARCH METHODOLOGY

The objective of the empirical research was to learn the opinions of people interested in the subject of project management about trends in project management and related changes in the competence needs of project teams. The survey was conducted using the survey technique (CAWI) in April 2025. The structure of the questionnaire was based on the literature on the subject. The study involved 86 students of postgraduate studies at the Krakow School of Business (KSB) in the field of “Project Management” held at the University of Economics in Krakow. All respondents declared professional activity in the area of project management. The answers were given on a scale of 1 – 5, where 1 means completely irrelevant and 5 means very important. This allowed one to determine the degree of significance of individual areas of project management in the assessment of the study participants.

The results of the study were developed using descriptive statistics such as: median (middle value, 50% of observations not lower, 50% not higher); mean (average); modal (dominant, the most common observation); standard deviation (the lower the value, the more the observations are concentrated around the mean).

The main objective of the study was divided into two specific objectives:

1. Identifying trends in project management;
2. Identification of the necessary competencies of the project team members.

To achieve the first objective of the survey, respondents were asked to assess future changes in the projects management areas listed in the survey (Table 1). Respondents were also asked about the assessment of the importance of the above-mentioned areas of project management in the future (Table 2).

In order to implement the second objective of the survey, the respondents were asked their opinion about the necessary competences of project teams in project practice (Table 3).

ANALYSIS AND DISCUSSION OF THE SURVEY RESULTS

As part of the implementation of the first research objective, i.e. the identification of trends in project management, the respondents were asked to assess the anticipated changes in the projects mentioned above (Table 1) and to indicate which of them will be most important in the future (Table 2). The analysis of the results presented in Table 1 and Table 2 identified key trends that shape current and future project management practices.

Table 1. Selected descriptive statistics of anticipated changes in selected areas of project management.

Questions	Median	Average response	Mode	Standard deviation
The rise of agile project management methodologies	4	3.92	5	1.0304
The growing importance of hybrid (mixed) project management methodologies	2	2.51	3	0.9018
Growing importance of classic project management methodologies	3	3.07	5	0.9222
The role of artificial intelligence in design decisions	4	3.18	5	0.951
Automation of processes in projects	4	3.3	5	0.9466
Increased integration of tools and platforms	4	3.23	5	0.9513
Data analytics software development	3	3.24	5	0.8488
Increased number of virtual project teams	4	3.68	3	1.1041
Managers' competencies to manage a distributed team	4	3.9	5	1.005
Stronger emphasis on the issues of sustainable development and social responsibility of project activities (sustainable project management)	4	3.75	5	1.0717
Increased attention to risk management	4	3.73	3	1.0225
Increase in the value of soft skills of managers and members of project teams	4	3.88	4	0.9828

Source: own study.

The analysis of the received responses (Table 1) shows that, in the opinion of the respondents, the most significant changes in project management will concern the increase in the importance of agile management methodologies (average 3.92; dominant 5) and the increase in the importance of managers' competence to manage a dispersed team (average 3.9; dominant 5). The soft skills of project team members and managers are and will also be of great importance (average 3.88; dominant 4). These three areas achieved the highest average ratings, which suggests that design practice is increasingly shifting towards the use of modern technologies, and thus flexibility and adaptability, but also the need to increase interpersonal competencies in design work. This clearly indicates the evolution of project management,

where, in addition to the technical execution of tasks, the ability to collaborate, communicate, and respond to changes is also becoming important.

Aspects such as sustainable development and social responsibility of project activities (average 3.75) and risk management (average 3.73) also received high marks. This may indicate the growing importance of ethical, environmental and stakeholder accountability issues in project management practice. Among the predicted trends, there is also an important role of process automation (average 3.3), the development of data analysis software (average 3.24) and the use of artificial intelligence in project decision making (average 3.18). These results may indicate that respondents see the growing importance of these areas in project practice but perceive them as gradual changes that require further development of competences and infrastructure, rather than as immediate. On the other hand, low scores attributed to hybrid (average 2.51) and classic (average 3.07) methodologies suggest a shift in respondents' preferences toward more adaptive and iterative approaches to project implementation.

The above observations are confirmed by subsequent analyses. Table 2 presents the results of the evaluation of future relevance of the identified challenges and areas of project management.

Table 2. Descriptive statistics on the relevance of challenges and project management areas in the future.

Questions	Median	Average response	Mode	Standard deviation
Team management and communication	4	3.39	5	0.7813
Project planning	4	3.73	4	0.8956
Change management and adaptation to new conditions	3	3.2	5	0.873
Improvement of project processes and optimization of activities	4	3.84	4	1.0383
Project complexity and risk	3	2.8	4	0.9114
Lack of adequate resources and competences	3	2.83	4	0.9463
Rapidly changing technologies and market trends	4	4.06	5	1.0015
Increasing importance of the project team's soft skills	3	2.88	4 and 5	0.9474
The need to adapt to remote work and global collaboration	4	3.9	4 and 5	1.0555
Sustainability and Social Responsibility	4	3.61	4	1.1554
Taking into account the changing needs and expectations of customers	3	3.04	4	0.8904

Source: own study.

The data in Table 2 show a strong focus on digital, process automation, and advanced data analytics for the future of project management. The highest average was achieved by the area related to rapidly changing technologies and market trends (average 4.06; dominant 5), which emphasises the growing pressure of the external environment and the need to follow innovations. The need to adapt to remote work and global collaboration (average 3.9; dominant 4 and 5), as well as the improvement of project processes and their optimisation (average 3.84; dominant 4) were also highly rated. This means that effective project management in the future will require a high degree of adaptability and openness to working in a distributed environment.

Despite the relatively low average for the increase in the importance of the project team's soft skills (average 2.88), this category received a high dominant (4 and 5), which suggests that there is a group of respondents particularly aware of the role of these competences. This may indicate that its importance in

a broader sense is not yet sufficiently recognised, although the data from Table 1 confirm its increasing value.

Summing up the implementation of the first objective, namely the identification of trends in project management, the growing importance of flexible, agile methodologies, the dominance of soft and interpersonal skills, the development of remote work and global cooperation, as well as the need to adapt to dynamically changing technologies are indicated.

As part of the implementation of the second research objective, identifying the competencies needs of the project team members, respondents were asked to indicate the competencies of the project team members they currently consider important. The results are presented in Table 3.

Table 3. Answers to the question of what competencies of project team members are currently considered important.

Questions	Median	Average response	Mode	Standard deviation
Substantive qualifications	3	2.94	4	0.8854
Experience in project work	4	3.48	4	1.0621
Specialization in narrow scopes	3	3.35	3	1.0324
Ability to work in a team	3	2.39	5	0.7626
Resistance to stress	3	3.09	5	0.8753
High personal culture	4	4.16	5	0.963
Responsibility for the tasks entrusted to be performed	4	3.45	5	0.7326
Problem-solving skills	3	3.2	5	0.8246
Ability to communicate with the project manager	3	3.15	5	0.8629
Creativity	4	3.82	4	0.9365
Self-reliance	4	4.01	4	0.9253
Communication skills in the team and with the environment, the customer	3	3.22	5	0.7721
Knowledge of modern project management tools and technologies	4	3.52	4	1.1187
Ability to work in intercultural and global teams	4	3.76	4	1.0376
Excellent communication and negotiation skills	3	2.87	4	0.878
Ability to respond quickly to change and flexibility in decision making	3	3.24	5	0.7989

Source: own study.

The most valued competency among the survey respondents turned out to be a high personal culture (average 4.16, dominant 5). A high score may indicate the growing importance of professionalism, ethics, and appropriate communication style, especially in teamwork and intercultural environments. The next positions were taken by independence (average 4.01; dominant 4) and creativity (average 3.82; dominant 4), which confirms the importance of the ability to act independently, take initiative, and approach complex design problems. These results are consistent with previously indicated trends, such as the increase in the importance of agile methodologies (average 3.92 in Table 1) and the increase in the number of virtual teams (3.68 in Table 1), where the responsibility and flexible approach of team members are of great importance. This is confirmed by the high position of the ability to work in intercultural and global teams (average 3.76; dominant 4). This also corresponds to the trend of

growing importance of remote work and global collaboration, which in Table 2 received one of the highest average scores (3.9). At the same time, the knowledge of modern project management tools and technologies was highly rated (average 3.52; dominant 4), which is in line with the expected increase in the importance of process automation (average 3.3) and tool integration (average 3.23) indicated in Table 1. The experience in project work was rated at 3.48 (dominant 4), showing that despite the growing importance of soft skills, the practical aspect and knowledge of project realities remain important. The responsibility for the tasks assigned to them was also highly rated (average 3.45), confirming the need for maturity and credibility in the implementation of tasks in dispersed teams. This was followed by skills such as problem solving (average 3.2), communication skills (3.22), and the ability to react quickly to change and flexibility (3.24). These competencies indicate the expectation that team members will actively respond to the challenges of project activities.

The relatively low assessment of teamwork skills (average 2.39) may be surprising. Team management and team communication received an average of 3.39 and a dominant score of 5. This may indicate that respondents underestimate this competence or treat it as obvious and therefore do not require special distinction.

The results included in Table 3 confirm that the competence profile of project team members is evolving towards an increased importance of independence, communication skills, increased importance of the ability to work in intercultural teams, and proficiency in the use of modern technologies. In the context of contemporary trends such as agility, globalisation of work, automation, and sustainable development, competencies that enable flexible, responsible, and creative work in a complex, changing, and digital project environment are becoming the most desirable. Modern project management is increasingly based on rigid structures and procedures, and increasingly on flexibility, relationality, and the ability to react to the unpredictability of the environment. All this has a direct impact on the expectations of project team members whose competence profile is clearly transforming toward interdisciplinarity, communicativeness, independence, and technological proficiency.

DISCUSSION OF RESEARCH RESULTS

The results of the study indicate that contemporary project management is in a phase of change, resulting in significant changes in the competencies required of project team members. Respondents rated the growing importance of agile methodologies and the ability to manage distributed teams highest, which confirms observations in the literature that point to the dominance of adaptive approaches in a turbulent business environment [Iriogbe et al., 2024, p. 2820; Teichert et al., 2024, pp. 236–238]. The relatively low ratings assigned to classical and hybrid methodologies suggest a preference for flexibility, although international research shows that in many cases, practice will move towards mixed models that combine the stability of the classics with the flexibility of agile [Stan et al., 2024, p. 32].

The results of the study clearly show that working in a remote working environment and global collaboration are becoming a key challenge. Respondents emphasised the importance of online communication skills, independence, and trust-building in virtual teams, which corresponds to reports in the literature on the growing importance of digitisation and virtualisation of design processes [Teichert et al., 2024, pp. 234–236; Bernat et al., 2023, p. 8]. At the same time, the importance of artificial intelligence and process automation was rated surprisingly low. This may be due to the caution of practitioners who recognise the potential of new technologies but point to the need for further development of infrastructure and digital competences. Meanwhile, global research clearly shows that AI is playing an increasingly important role in data analysis, risk forecasting, and resource optimisation [Savio, Ali, 2023,

p. 246; Vergara et al., 2025, p. 16], which means that digital skills in project teams need to be systematically improved.

When it comes to the competencies of project team members, high personal culture, independence, and creativity were rated highest. This means a shift in emphasis to soft skills and ethical attitudes that build trust and foster cooperation in diverse teams [Ochoa Pacheco et al., 2023, pp. 7–17]. At the same time, knowledge of modern tools and experience in project work were highly rated, proving that despite the growing emphasis on interpersonal skills, specialist knowledge and practice remain the foundation of effective work. The surprisingly low rating of teamwork suggests that it is taken for granted and does not require special recognition.

Research confirms that the competency profile of project team members is clearly evolving. Today's specialists should combine technical and soft skills with the ability to work in a digital and global environment. The future of project management will depend on the parallel development of technological and social skills, which will allow the full potential of new technologies to be exploited while maintaining effective and sustainable teamwork [Bushuyev et al., 2024, p. 405; Adeniran et al., 2024, p. 2642].

Sustainable development also proved to be an important theme, and researchers rated its importance in projects highly. This result confirms the shift in approach to success criteria observed in the literature – from the classic 'iron triangle' to project compliance with ESG values and broader social and environmental impact [Adegbite et al., 2023, p. 535; Moreno-Monsalve et al., 2022, p. 12].

SUMMARY

Both the literature analysis and the results of empirical research confirm that modern project management is currently undergoing a transformation. Technological changes, the development of digitisation, the popularisation of remote work, and the growing importance of sustainability aspects affect not only the way projects are implemented, but also the expectations of project team members. More and more often, we observe a departure from traditional, formalised management methods in favour of agile and hybrid approaches that better respond to the needs of the dynamically changing environment.

Among the competencies that respondents considered crucial, the dominant features are those related to independence, creativity, responsibility, and a high personal culture. Ability to work in intercultural teams, knowledge of modern tools, and flexibility in action were also highly rated. This indicates the growing importance of soft and social skills, which are becoming essential for teamwork, especially in dispersed and international environments. There is a need to skilfully combine interpersonal skills with technological and digital knowledge. In the context of the growing use of artificial intelligence and automation, it is essential to complement technical competencies with communication, adaptation, and leadership skills. In project teams, the ability to self-organise, collaborate, and respond flexibly to the needs of stakeholders is becoming more important. Increasingly, the success of a project is judged not only in terms of time, budget, and scope but also in terms of its compliance with social and environmental values.

The changes noticed in the project environment force a new approach to shaping competences in project teams. For organisations, this means investing in the development of both digital and social skills. Only by supporting them in parallel will it be possible to effectively use the potential of modern technologies while maintaining effective and sustainable teamwork. A modern project team must combine technological competence with leadership, adaptation, and communication skills.

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