

REVIEW ARTICLE

Organizational trends: Agile teams or interdisciplinary teams

ABSTRACT

Present-day organizational work structure has evidenced the need for teams that manage projects and develop products to work in complex environments, with constant modifications and requests, using methodologies that help achieve the desired objectives with greater productivity, creating a competitive advantage. The aim of this article is to review the way in which organizations—focusing on innovation and adaptation—have moved from emphasizing steps and cycles to pursuing the delivery of continuous value and leveraging the diversity of knowledge to achieve their goals. To this end, various theories and studies related to interdisciplinary and agile teams—two new ways of collaboration within organizations—have been reviewed by exploring their dimensions and specific characteristics. In addition, this article aims to highlight their importance to organizations to generate a positive impact on all fronts of business management. It concludes by exposing the potential synergy found in interdisciplinary and agile teams. It is possible to create teams that meet both qualities: the collaboration between disciplines and the quick and adaptable responsiveness of agile teams.

Keywords: Interdisciplinary teams, Agile teams, Continuous value; Agility; Business management.

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INTRODUCTION

Since the economic and financial crisis of late 2008, the term VUCA, originally from the military context, has become relevant to the description of the current environment in which we live. The acronym VUCA stands for Volatility, Uncertainty, Complexity, and Ambiguity. Volatility is related to the constant and accelerated speed of changes, which are quick, unexpected, unstable, of great magnitude, and of uncertain duration. Uncertainty is related to the unpredictability caused by various forces operating in the environment, such as globalization, digitalization, networks, geopolitical changes, business complexity, scientific developments, knowledge obsolescence, and changes in society and demographics. Complexity results from the multiplicity and interconnection of these forces, preventing the understanding of the cause-and-effect chains. Ambiguity, as a consequence of the above, leads to a state of confusion due to the lack of clarity and the inability to decide from multiple meanings and interpretations in a hazy reality (Valderrama, 2020).

In the current business environment, characterized by the quick evolution of technology, the globalization of markets, and the increasing demand by customers, organizations face unprecedented challenges. To remain competitive and to adapt to a constantly changing world, many companies resort to new approaches to project and team management, resulting in new philosophies of work and transforming the way in which organizations operate and deliver value to their customers.

The need for communication and collaboration in projects involving workers with specialized expertise is usually more ambiguous and less defined, compared to that of industrial projects. Agile methodologies have emerged as a solution to the frustration caused by the attempts to apply approaches originally designed for industrial projects to projects based on employees' knowledge (Rodríguez, 2013).

On the other hand, project management in organizations is characterized by including the "interaction and relationships in teamwork" element as part of it. This is achieved by creating interdisciplinary teams, often made up of

government and private sector entities, universities, sectoral authorities, non-government organizations (NGOs), local or international organizations, and the community in general. This space is used strategically to encourage collaboration between the actors and to generate new projects (Matos de Rojas *et al.*, 2018).

Based on these premises, this article seeks to explore the characteristics of agile teams and interdisciplinary teams, their importance, and the benefits they provide to organizations. It will also analyze how the convergence of principles and approaches shared between agile and interdisciplinary teams may strengthen the delivery of value and promote a more effective collaboration.

METHODS

The process began with an exhaustive search in academic databases, publications, dissertations, and books, using keywords related to the relevant topics. Inclusion criteria were applied prioritizing the topic relevance and the currency of publications, the use of either Spanish or English, with no restrictions as to their geographical location. After retrieving a wide range of documents, the quality assessment focused on the journal impact factor, the references used, and the methods used in the studies. The variability between the documents selected was analyzed, ensuring the reliability and validity of the information reviewed. This methodological approach provided a solid foundation for the synthesis and critical analysis of the literature review findings.

RESULTS

Team collaboration is frequently promoted in the 21st century. It is usually found in continuous development programs in schools and training institutions, and is used in scientific and popular discourses. Upon listening to these recommendations, the benefits of this type of joint work are undoubtedly confirmed; however, we often ignore the process of how to carry it out (Ruiz Fresquet *et al.*, 2022).

Lucena Fernández (2019) refers to the fact that a gathering of individuals does not automatically ensure the creation of a collaborative team. Several elements need to be conside-

red so that this becomes true in an effective manner. These elements are: the environment, which should maximize experiences and participation while minimizing intimidation; distributed leadership, which should stimulate maximum dedication to the problem and maximize the evolution of the group members; and the formulation of objectives, referring to participating in the proposal of objectives to help the group acquire a sense of collective unity, flexibility and freedom to create and change rules depending on the needs arising within the group. Additional to this, consensus, process comprehension, and continuous assessment are considered.

Working as a team involves sharing, discussing, and being willing to give in. In other words, it demands a significant investment of energy, commitment, and time. This is not only necessary to perform a specific task, but also to establish bonds that facilitate joint work. At those points, reaching agreements is more challenging due to the lack of familiarity with personal styles, perspectives, and the ideas of the rest of the group. To summarize, it is necessary to exchange ideas and become familiar as a team before designing and maintaining the support task to schools (Ruiz Fresquet *et al.*, 2022).

Similarly, working as a team means starting from differences and reaching agreements that help reach the objectives proposed. In such regards, Untoiglich and Szyber (2020) state that, when talking about differences, we are referring to an act of creativity, and how differences impact people, generating novelty. The learning process is linked to creating differences, expanding the spectrum of possibilities. It does not focus on obeying, but on creating new meanings.

Interdisciplinary teams

Based on the controversies and constructions related to teamwork, interdisciplinary work becomes an interesting concept to explore. Throughout history, interdisciplinary collaboration has been labelled as unreachable; this may be because, for a long time, it was believed that certain disciplines were more important or held higher-ranked knowledge. This may also be the case due to people's tendency to at-

tend to their own business without taking any other perspectives into consideration, or because human beings feel anxious about the idea of not having the answers to everything.

An interdisciplinary team is a collaboration between individuals who contribute a wide variety of theoretical and practical knowledge in order to reach a shared goal through a concerted effort. In this collaborative context, all the team members share responsibility, and each has a specific scope of action allocated (Raeburn, 2024).

When a company creates a team, it does so considering both individual and collective skills and resources to optimize performance and achieve organizational success. The creation of interdisciplinary teams, which fuse various skills and disciplines together, requires a careful analysis of the recruitment process to ensure that the members complement each other as required (Syntonize, n.d.). Regarded this way, the distinctive characteristic of an interdisciplinary team is its diversity of skills, perspectives, and knowledge provided by each member from their specific field. Rojas Acosta and Torrez (2022) state that interdisciplinary work mainly involves collaboration between colleagues in an organization's internal projects. It does not stand out due to its theoretical approach, but due to its commitment to action and the practical solution to problems related to teaching, coexistence, and cooperation.

Meanwhile, for Arguedas-Negrini and Carpio-Brenes (2011), interdisciplinary collaboration in projects benefits from a solid support by institutional authorities and an environment characterized by respect and acceptance.

Complexity results in encouragement to seek and share knowledge to address study, work, and experiences. Upon discovering that disciplines are limited, the need to integrate other knowledge and perspectives to fully understand this reality is acknowledged (Elichiry, 2009). In addition, it aims to achieve shared objectives, shared responsibility, and the recognition of each member's theoretical and practical knowledge (Ministerio de Educación Pública, 2022).

There are studies which highlight that interdisciplinary teams offer a range of skills and knowledge which, when combined effectively, may strengthen the efficiency and effectiveness of an organization in regard to problem solving and the achievement of its objectives. For example, as stated by Arenas Hernández and López Gil (2023), the interdisciplinary collaborative work strategy is presented as a highly effective tool for teachers' professional development. Joint collaboration facilitates the achievement of any established goals, both in terms of supporting students and in the transformation of teachers' preconceptions and guidance or evaluation practices.

The research by Purvis *et al.* (2023) explores how the interdisciplinary character of their environment impacted the authors' experiences during their doctoral research work in British academia. It reveals that the uncertainty and insecurity faced by these young academics are mainly due to the existing structures in British academia, rather than resulting from the interdisciplinary context where they operate.

Another study by Gutiérrez River and Gómez Bonilla (2017) examined how professionals from various fields collaborate to meet the needs of students with disabilities. The researchers concluded that interdisciplinary work is key to ensure the participation of these students, because it allows professionals to share knowledge and experiences in order to develop personalized intervention plans that address the specific needs of each student.

Despite the advantages of interdisciplinary teams, they are not yet regarded as a priority. This may be due to the insufficient consensus on their definition and the incentives for this discipline, and the difficulties that surround measuring the effectiveness of this approach (Lewis, 2022). Likewise, interdisciplinary work is limited in educational contexts due to a lack of motivation to establish collaboration between disciplines. In such regard, Lewis (2022) proposes that conflict has to be acknowledged, because this helps generate various perspectives and, therefore, new learning.

Another limitation of interdisciplinary teams is their complexity or the lack of guidance to put them into practice. Vienni Baptista

and Goñi Mazzitelli (2021) state that there are factors within Latin American academia which have not adapted to the present time, which requires this type of teams. Among the individual factors, they mention employees' lack of interest and availability to participate in these encounters; they also highlight the role of affinity within the group—without it, it is not possible to understand the way in which others work. Similarly, another cognitive factor is to have a common relevant language that helps ideas to be shared and better understood. Another important factor is that there are few common spaces, which prevents interdisciplinary teams from remaining together over time (Vienni Baptista and Goñi Mazzitelli, 2021).

On the other hand, interdisciplinary projects may be considered to be not very productive due to the learning curve that the specialists from various disciplines may experience whilst adapting to the projects (Goulden *et al.*, 2017, as cited in Purvis *et al.*, 2023). This eventually becomes a paradox because, although organizations seek to implement these teams to solve problems effectively, the time required for their execution is considered a drawback (Goyette, 2016, as cited in Purvis *et al.*, 2023).

As can be noted, in spite of the efforts to implement interdisciplinary work, organizations are still focused on single-discipline work. To illustrate, this is the case of higher education in the United Kingdom. Government funding of successful measures, such as the Research Excellence Framework (REF) and high-impact academic journals, follows this traditional approach. In fact, Christensen *et al.* (2021) argue that interdisciplinary approaches receive less recognition both in academia and the broader funding structures. They also highlight the challenges faced by interdisciplinary post-graduate research compared to their intra-disciplinary counterparts.

It has also been noted that this situation influences the choice of research projects. Some researchers opt for intradisciplinary research as they regard it as a faster way of advancing within a structured academic context, while interdisciplinary projects are considered to be more of a risk (Byrne, 2014 and Cuevas-García, 2015, as cited in Purvis *et al.*, 2023).

The need to address disciplinary, administrative, evaluation, and recognition procedures is highlighted as a condition to provide value to interdisciplinary research.

Following this reasoning, interdisciplinary teams constitute progress; however, they also create challenges. They required each member to fully understand the entire process, and evaluators must improve their technical skills to supervise each member's work. Companies must improve their employees' various skills and adopt an integrated approach to reach the full potential of continuous tests (IT Digital Media Group, 2019).

Agile teams

Agile teams are groups of people who work collaboratively to deliver products or services in a way that is quick, flexible, and adaptable to changes. They are based on the principles and values of agility, and emphasize collaboration, communication, transparency, and adaptation.

There are around a dozen agile methodologies. The most common are Scrum, Extreme Programming (XP), Feature-Driven Development (FDD), Dynamic Systems Development Method (DSDM), and the Crystal methodology family (Crystal Clear, Crystal Yellow, etc.). Other methods are based on Lean or Kanban developments. From the above-mentioned methodologies, the most widely used are Scrum and XP (Rodríguez, 2013).

An interesting example is the Scrum methodology, which uses agile teams. As commented by Gutiérrez (2021), the Agile Manifesto is a set of principles and values defined in 2001, when 17 developers met in Salt Lake City to discuss software development and, as a result, they signed this manifesto including four values and twelve principles. The four values are summarized as follows:

- Individuals and interactions over processes and tools.
- Working software over comprehensive documentation.
- Customer collaboration over contract negotiation.

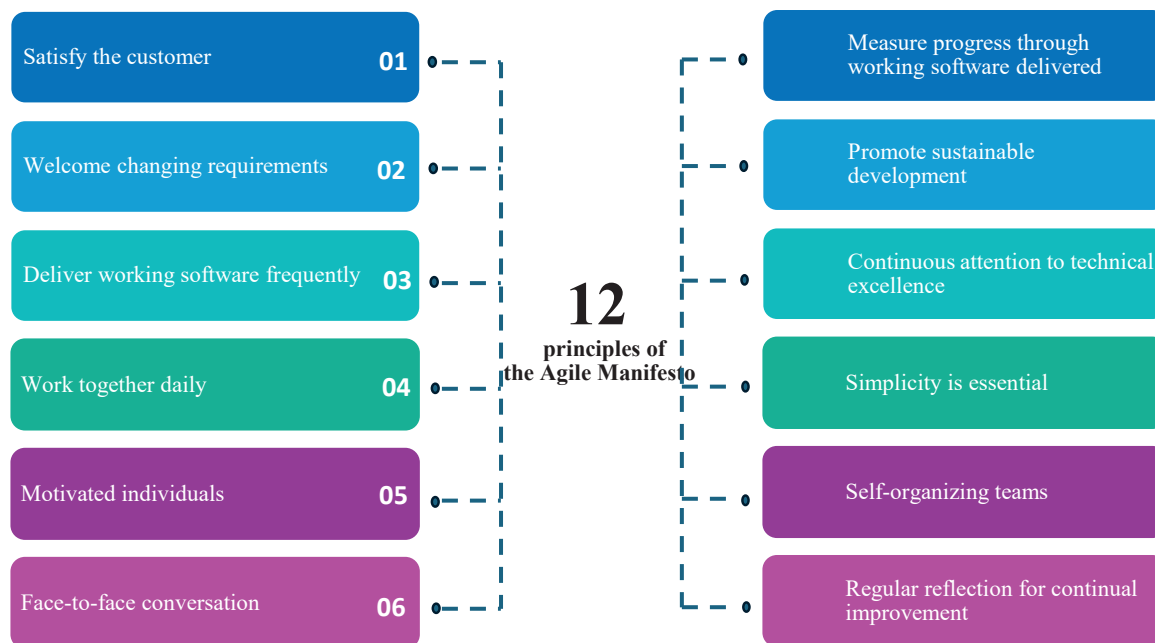
- Responding to change over following a plan.

Agile teams are multi-functional units collaborating closely and efficiently to achieve specific objectives. Through iterative processes and a continuous improvement mindset, these teams are designed to quickly respond to changing market demands and customer needs. Their importance lies in various key aspects:

- **Adaptability.** Agile teams are flexible and can quickly adapt to changing circumstances. They can adjust their priorities and tasks depending on the business needs and the customer's preferences. This responsiveness is essential in a world where conditions may change overnight (Pico Pico and Lozada Torres, 2023).
- **Value delivery.** Agile teams focus on constant value delivery. Instead of waiting for months or even years to launch a product or service, agile teams work in short cycles to deliver value increases regularly. This helps organizations satisfy their customers' needs more effectively and stay at the forefront in their industries. In such regard, it is understood that the team's value delivery is greater than the sum of individual deliveries (Rendón, 2023).
- **Collaboration and communication.** Agile teams promote collaboration between members from different departments, facilitating communication and more effective problem solving. Transparency and open communication are key for the success of agile teams, promoting a healthier and more productive working environment (Quixy Editorial Team, 2023).
- **Risk reduction.** Managing agile projects allows for greater risk visibility and control. By performing constant tests and adjustments, teams can identify and mitigate problems before they become insurmountable obstacles (The Codest, 2023).

Figure 1

Agile Manifesto principles



Note. Taken from Focus Cycles, 2020.

- **Continuous improvement.** An agile mindset encourages continuous improvement. Not only do teams deliver products or services, but they also evaluate their own performance and seek improvement opportunities. This culture of constant learning drives innovation and efficiency, and customer participation from the beginning of the project is highlighted (Hadida and Troilo, 2020).

In addition, Prieto (2023) states that other benefits of agile methodologies are identifying tasks that help save time, facilitating decision-making, and sometimes also improving the team-customer relationship.

Elsewhere, the Business Agility Corp website (BAC, 2023) states that many companies have adopted agile frameworks and practices to a certain extent, especially information technology (IT) teams, and most of them regard these new approaches as beneficial. However, some stagnation has been noted on the road to business agility due to the difficulty

addressing cultural and leadership changes in organizations.

From the viewpoint of BAC (2023), it is believed that the next key step involves changing traditional management, based on control and hierarchy, to a more agile approach. This transition often faces resistance stemming from managers and directors who are afraid of changes and prevent a complete transformation. Although it may seem utopic for all companies to reach business agility in its purest form, there is a real opportunity for those organizations willing to take a step forward, as this may provide them with a significant competitive advantage.

The key to achieving this change lies in actively addressing cultural transformation, specifically starting from change management in those processes affecting individuals (agile HR) and the evolution of leadership styles (BAC, 2023). In other words, the development of an agile culture will require the essential collaboration between human resources functions, behavior modification in the team, and the active

support of leadership. Within this structure, this culture is characterized by three elements: commitment, responsibility, and balance.

On the other hand, one disadvantage of agile team training is the lack of understanding or knowledge of this methodology, as well as resistance to change during the adaptation process. As a result, it is imperative to provide members with agile tools such as Scrum and Design Thinking, among others, using technology to develop their technical, leadership, and technological skills (Romero Hinojoza *et al.*, 2022).

The previous statements highlight the significant importance and usefulness of agile interdisciplinary teams, underlining how their composition contributes to efficiency and achieving objectives.

Within this framework, it is important to highlight that agile methodologies increasingly prioritize effective communication, both internal and with customers, as well as working with interdisciplinary teams. All this has involved a change in project management, helping the delivery of final products to take place in more effective deadlines (Díaz, 2022). Another advantage of integrating agile methodologies and cross-disciplines is more creative and innovative teams, which pay particular attention to teamwork that results in more motivated individuals and the delivery of a higher quality product (Díaz, 2022).

Finally, it is noted that organizations using agile methodologies need to develop new skills and receive support to reach complete progress in their projects. For example, in the technology field, developers have stopped working in isolated teams and choose an interdisciplinary approach together with the Business department. This has resulted in more holistic work and greater involvement in project development (Díaz, 2022). However, despite the many benefits of implementing interdisciplinary projects, there are still challenges that must be overcome while developing skills such as those promoted by agile methodologies. Therefore, it can be noted that both variables are increasingly in line and can be used together to improve work-related processes (IT Digital Media Group, 2019).

DISCUSSION

Although all the documents included an explanation of key terms, it was difficult to identify a specific theoretical framework leading the research. In addition, the theoretical perspectives also display diversity, since several focus on agile methodologies, whilst others focus on the characteristics of interdisciplinary work and collaboration.

In relation to interdisciplinary teams, based on Arenas Hernández and López Gil (2023), joint collaboration in these teams facilitates the achievement of established goals, while Gutiérrez Rivera and Gómez Bonilla (2017) concluded that interdisciplinary work allows professionals to share knowledge and experiences to develop personalized intervention plans. By contrast, interdisciplinary teams also face challenges such as the low degree of motivation to collaborate among disciplines, as stated by Lewis (2021); another limitation of interdisciplinary teams is their complexity or lack of guidance to put them into practice (Vienni Baptista and Goñi Mazzitelli, 2021). Goulden *et al.* (2017, as cited in Purvis *et al.*, 2023) also propose that interdisciplinary projects may be regarded as not very productive because it may take the specialists from various disciplines a great deal of time to adapt to the project.

On the other hand, implementing agile teams in organizations may bring many benefits, as stated by Prieto (2023); however, according to the studies reviewed, in spite of these benefits they mention and compare, there are still very few companies globally which can claim that they have reached business agility and fully leveraged the opportunities provided by a new approach to management. The main reason is that agile proposals for collaborative work and decentralized decision making constitute a cultural shift that is too significant compared to the traditional approach to management based on control and power hierarchy. As stated by Romero Hinojoza *et al.* (2022), a key disadvantage is resistance to change during the adaptation process. This leads to resistance founded in the fear shown by directors and senior managers, generating a barrier for the implementation of change

In relation to the ideas presented, this article highlights the fact that interdisciplinary teams and agile teams share essential characteristics promoting effective collaboration and the achievement of objectives. Both team types value flexibility and the ability to adapt to changes, fostering open and transparent communication among their members. Autonomy and self-management are key aspects for both interdisciplinary teams—focused on addressing complex problems from various perspectives—and agile teams—focused on the quick and frequent delivery of quality products or services. In addition, both team types prioritize customer focus and are oriented to achieving results, highlighting the importance of collaboration, flexibility, and adaptability in present-day working environments.

Following this reasoning, both agile and interdisciplinary teams constitute modern approaches aimed at improving efficiency and value delivery in the workplace. However, they also share various principles and approaches that could lead to coincidence and effective collaboration; that is to say, an agile team can adopt interdisciplinary practices by promoting collaboration between distinct roles, while an interdisciplinary team can apply agile approaches to improve its adaptation and incremental delivery capabilities. The convergence of these concepts may be particularly effective in contexts where the complexity of projects requires innovative solutions and flexibility. However, according to the literature reviewed, it is not possible to single out a particular perspective to understand whether these team types can be created as a single unit, nor the definitions or characteristics related to their composition.

CONCLUSIONS

The literature revealed various benefits of creating interdisciplinary teams, such as obtaining multiple perspectives to address a problem or project by offering more innovative solutions; the synergy of skills; the promotion of constant learning by sharing knowledge, methodologies, and approaches; the adaptability to address changes from different points of view and providing comprehensive and complete solutions. On the other hand, researchers found that the team members face various

challenges such as communication difficulties; focus conflicts, time, and additional efforts to integrate ideas and reach consensus; and effective leadership. This highlights the fact that senior management is responsible for providing employees with the necessary tools to develop the skills required for this integration.

Maintaining an agile culture involves a constant need for individuals who are committed, competent when dealing with their duties, balanced, customer-focused, and dedicated to delivering constant and real value. To this end, it is crucial to have aligned objectives, a sustainable pace of work, trust, and autonomy. In addition, the factors that teams usually regard as beneficial after adopting agile practices are related to communication improvements, alignment, context/environment improvements, responsiveness, and motivation.

The convergence between interdisciplinary teams and agile methodologies represents a powerful synergy in present-day working environments. While specific research on this fusion may be limited, in practice it is becoming common in numerous companies and in academic contexts. By combining the diverse skills of interdisciplinary teams and agile project management, not only are innovation and adaptability promoted, but the response to complex challenges is also optimized, therefore fostering a culture of efficiency and continuous improvement in working contexts.

However, this convergence also brings significant challenges, including communication difficulties, methodology integration, role definition, leadership adaptation, differences in the pace of work, and resistance to change. These hurdles demand careful management, clear communication, flexible leadership, and a profound understanding of the various disciplines and approaches to achieve an effective integration, and thus maximize the benefits of this convergence.

These findings have key implications in the research on collaboration in organizations, since they show the wide range of objectives, theories, and methodological approaches that influence the creation of work teams aimed at greater efficiency and the achievement of objectives.

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Conflict of interest

The author has no conflicts of interest to declare.

Author contributions

Karina Ruth Burgos Del Rosario (lead author): conceptualization, data curation, formal analysis, research, methodology, project management, supervision, validation, data visualization, writing (original draft, review, and editing).