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HYBRID AGILE MANAGEMENT METHODOLOGY: INTEGRATION OF KANBAN AND SCRUM FOR SMALL AND MEDIUM-SIZED COMPANIES AND TECHNOLOGY-BASED COMPANIES[1]

METODOLOGIA HÍBRIDA DE GESTÃO ÁGIL: INTEGRAÇÃO DE KANBAN E SCRUM PARA PEQUENAS E MÉDIAS EMPRESAS E EMPRESAS DE BASE TECNOLÓGICA

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ABSTRACT

Agile methodologies have been widely adopted to optimize project management, especially in Small and Medium-sized Enterprises (SMEs) and Technology-Based Companies (TBEs), which require flexibility and efficiency in their processes. Among these methodologies, Scrum and Kanban stand out for their structured and adaptable approaches, respectively. However, the isolated application of each one can present challenges, such as the rigidity of Scrum or the lack of predictability of Kanban. This article proposes a hybrid model that combines the strengths of these methodologies, allowing a balanced approach that combines structured planning and continuous adaptation. Through a literature review, the applicability of this integration in the context of SMEs and TBEs was analyzed, culminating in the proposal of an implementation model based on monthly cycles and a visual task management system. The results indicate that this approach can increase operational efficiency.

Keywords: agile methodologies, SMEs and EBTs, scrum, kanban.

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RESUMO

As metodologias ágeis vêm sendo amplamente adotadas para otimizar a gestão de projetos, especialmente em Pequenas e Médias Empresas (PMEs) e Empresas de Base Tecnológica (EBTs), que necessitam de flexibilidade e eficiência em seus processos. Dentre essas metodologias, Scrum e Kanban se destacam por suas abordagens estruturadas e adaptáveis, respectivamente. No entanto, a aplicação isolada de cada uma pode apresentar desafios, como a rigidez do Scrum ou a falta de previsibilidade do Kanban. Este artigo propõe um modelo híbrido que combina os pontos fortes dessas metodologias, permitindo uma abordagem equilibrada que alia planejamento estruturado e adaptação contínua. Por meio de uma revisão bibliográfica, analisou-se a aplicabilidade dessa integração no contexto de PMEs e EBTs, culminando na proposição de um modelo de implementação baseado em ciclos mensais e um sistema visual de gerenciamento de tarefas. Os resultados indicam que essa abordagem pode aumentar a eficiência operacional, melhorar a priorização de demandas e proporcionar maior agilidade na entrega de valor ao cliente.

Palavras-chave: metodologias ágeis, PMEs e EBTs, scrum. kanban.

INTRODUCTION

Over the years, agile methodologies have been used in various areas and industry segments to make project management processes more flexible and efficient. This is particularly important for small and medium-sized enterprises (SMEs) and technology-based enterprises (TBEs), which need to operate with moderate resources and adapt quickly to market demands (Sutherland; Rubinstein, 2019). In addition, SMEs and TBEs constantly need to improve their products and ensure agility in deliveries. Therefore, this management method becomes quite attractive for these types of businesses (Sommerville, 2017).

Both Scrum and Kanban are widely used agile methodology approaches for project management and represent examples of frameworks. Scrum is an agile framework that organizes work into repetitive cycles called sprints, which typically last from 1 to 4 weeks (Schwaber; Sutherland, 2020). Several companies globally have implemented this strategy, adapting their procedures to reap its benefits, such as setting priorities and the ability to make adjustments during



project development. However, a defined role and periodic meetings bring certain requirements that can create challenges for small teams or organizations with financial limitations (Assis; Larieira; Costa, 2017).

On the other hand, Kanban is a visual management system popularized by David J. Anderson (2010), in which tasks are moved through a continuous flow. This method is simple and focused on directing the workflow without a formal structure, which may be better for teams that need greater flexibility and autonomy. However, because it does not have a defined cycle and depends on efficient visual management, it is rarely suitable for situations requiring more detailed planning and organized deliveries (Anderson, 2010).

Combining these two strategies provides an alternative that allows SMEs and TBEs to benefit from the advantages of both processes while reducing the limitations of each. Although the concept of integration is encouraging, precise guidelines on how to apply it effectively in companies, especially smaller ones, are still lacking.

Therefore, the purpose of this article is to propose a hybrid methodology based on the best practices of Scrum and Kanban, which can be applied as a flexible and efficient alternative for project management in organizations. Thus, in addition to a brief overview of the foundations of both methodologies, the article will present a step-by-step framework for companies to implement this model pragmatically in their daily portfolio, achieving agility results without becoming confused with previous methodologies.

THEORETICAL FRAMEWORK

Characteristics of SMEs and TBEs: definition and importance

Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs) are essential for a country's economic growth and social



progress. In Brazil, SMEs account for approximately 99% of legally registered companies, being responsible for more than 50% of Gross Domestic Product (GDP), in addition to creating more than half of formal jobs (IBGE, 2020). These companies not only stimulate economic advancement but also contribute to the decentralization of development by generating employment and income opportunities in various regions, including those with less economic infrastructure (Dornelas, 2018).

SMEs are characterized by their lean structure and greater operational flexibility, which allows them to adapt quickly to market changes. In Brazil, their definition varies according to the sector of activity, and they are classified based on revenue and number of employees. According to the Brazilian Institute of Geography and Statistics (IBGE, 2020), microenterprises employ up to 19 people in commerce and services, while small enterprises may have up to 99 employees in industry. Despite their growth potential, these companies frequently face challenges such as restricted access to credit, technological limitations, and difficulties in process management (BNDES, 2019).

On the other hand, Technology-Based Enterprises are organizations focused on innovation and the intensive use of scientific and technical knowledge to develop products, services, or processes. According to Schumpeter (2005), these companies frequently emerge from academic environments, such as universities and incubators, and operate in advanced technology sectors, such as biotechnology, artificial intelligence, renewable energy, and industrial automation. TBEs play a strategic role in economic modernization, connecting scientific research to market needs and introducing innovative solutions that increase the competitiveness of the productive sector (Freeman; Soete, 1997). Thus, they drive technological advances and contribute to strengthening the knowledge-based economy.



Challenges and limitations

Although they are relevant to economic and technological advancement, both SMEs and TBEs face problems that compromise their sustainable growth and competitiveness in the global landscape. The need to optimize resources, constantly innovate, and adjust to rapid changes are frequent challenges for these companies. However, while SMEs are characterized by adaptability and relationships with consumers, TBEs are driven by knowledge and technological innovation. The combination of these characteristics makes both essential to the economy, but also requires them to overcome considerable obstacles, such as:

Access to financing: SMEs and TBEs frequently face difficulties in obtaining credit due to the perception of risk by financial institutions (OECD, 2019). In addition, TBEs depend heavily on investments in research and development (R&D), making access to innovative financing mechanisms, such as venture capital funds, angel investors, and government subsidies, essential (Gompers and Lerner, 2001; Hall and Lerner, 2010). Studies indicate that these alternative sources of financing are crucial for the survival and growth of these companies, especially in the early stages of their life cycle (Cumming and Vismara, 2017).

Challenges in talent management: Small and medium-sized enterprises (SMEs) and technology-based enterprises (TBEs) face difficulties in attracting and retaining qualified professionals. While large corporations offer high salaries and attractive benefits packages, these companies frequently have budget constraints that limit their competitiveness in the labor market (Cardon; Stevens, 2004). However, factors such as the organizational environment, growth opportunities, and active participation in strategic decisions can compensate for these limitations and contribute to talent retention (Heneman; Tansky; Camp, 2000; Baron; Hannan, 2002).



Infrastructure and technology: SMEs face difficulties in adopting advanced technologies, affecting their efficiency (OECD, 2021). TBEs, in turn, need to constantly update their innovations, dealing with high costs and risks in dynamic markets (Tidd; Bessant and Pavitt, 2005). The challenge is to balance technological investments and financial sustainability (Freeman; Soete, 1997).

High competitiveness: TBEs face challenges in intellectual property protection, scalability, and entry into highly competitive and strictly regulated markets (Teece, 2018). Innovation strategies and intellectual property management are essential for their sustainability.

Project management: concepts and importance

Project management is an essential discipline for planning, executing, and controlling organizational initiatives, ensuring that objectives are achieved within available deadlines and resources. According to Kerzner (2020), a project is a temporary endeavor undertaken to create a unique product, service, or result. In this context, project management provides methodologies, tools, and practices to structure work efficiently, reducing risks and maximizing resource utilization (Turner, 2014).

Companies from different sectors adopt project management as a strategic pillar to drive innovation, optimize processes, and maintain competitiveness in the market. Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), for example, face challenges such as budget constraints and the need to adapt quickly to market changes. For these organizations, adopting good project management practices is essential to align their efforts with business strategy and ensure effective deliveries (Cicmil et al., 2006).

Among the approaches used in project management, the distinction between traditional and agile methods stands out. Traditional methods, such as



the waterfall model, follow a linear and structured approach and are widely used in sectors that require predictability and rigor in planning (Um guia.., 2013). Agile methodologies, on the other hand, emerged as a more flexible alternative, allowing iterative development cycles and greater adaptability to customer and market needs (Highsmith, 2012).

In recent years, agile methodologies have gained prominence, especially in dynamic and innovative environments, such as startups and technology companies. These approaches allow incremental deliveries and continuous monitoring of project progress, favoring rapid adjustments and more accurate decisions (Schwaber; Sutherland, 2020).

Agile methodologies: concept

Agile methodologies emerged as a response to the limitations of traditional project management models, which frequently had difficulties dealing with changes during development. The term ‘agile’ was formalized in 2001 with the creation of the Agile Manifesto, a document developed by a group of software development specialists who proposed new values and principles for project management, prioritizing flexibility, collaboration, and the continuous delivery of value to customers (Beck et al., 2001).

Instead of following a rigid sequence of stages, as is characteristic of traditional approaches, agile methodologies adopt an iterative and incremental process. This means that projects are developed in short cycles called iterations or sprints, allowing continuous adjustments based on stakeholder feedback (Highsmith, 2012).

Another essential aspect of agile methodologies is their focus on collaboration and team self-organization. Instead of following detailed planning from the beginning, teams work together to adapt the project scope as necessary,



ensuring continuous deliveries and greater alignment with customer needs (Schwaber; Sutherland, 2020).

Since its origins in the technology sector, the agile approach has expanded into various segments, including industry, services, marketing, and strategic management. Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), for example, find agility to be a competitive advantage, as these methodologies enable faster decision-making and better utilization of limited resources (Rigby; Sutherland; Takeuchi, 2016).

Benefits of agile methodologies

Agile methodologies offer a series of benefits that make them an attractive choice for companies in different sectors, especially Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs). By adopting an agile model, organizations can improve their ability to adapt, innovate, and deliver value to customers. The main benefits of this approach are presented below:

Flexibility and adaptation to changes: Agile methodologies allow teams to adapt quickly to changes in demand or market conditions. As projects are developed in short cycles, called iterations, it is possible to continuously adjust the project scope and objectives, ensuring that the final product is always aligned with customer expectations (Schwaber; Sutherland, 2020). This constant feedback cycle promotes a rapid and efficient response to changes, something essential in dynamic markets.

Continuous delivery of value: One of the greatest benefits of agile methodologies is the continuous delivery of value to customers. In each iteration, teams deliver functional product increments, allowing customers to see progress continuously and have the opportunity to validate the work throughout development (Highsmith, 2012). This not only increases customer satisfaction but



also reduces the risk of major failures, since the product is constantly adjusted based on real feedback.

Greater collaboration and communication: Agile methodologies encourage constant communication among all team members and stakeholders. Information exchange and collaboration are fundamental to project success. In the context of SMEs and TBEs, where teams are smaller and more dynamic, this translates into greater synergy and efficiency in deliveries. Open communication also ensures that all members are aligned regarding project objectives and customer expectations (Rigby; Sutherland; Takeuchi, 2016).

Increased productivity and efficiency: The structure of agile methodologies, with short sprints and clear goals, promotes increased team productivity. By focusing on specific and measurable tasks in each cycle, teams can avoid distractions and work in a more focused and efficient manner. In addition, team self-organization, a fundamental principle of agile methodologies, allows team members to assume responsibilities more autonomously, which often results in greater engagement and quality in deliveries (Beck et al., 2001).

Cost reduction and increased competitiveness: Because they are more flexible and capable of adapting quickly to changes, agile methodologies help organizations reduce rework costs and increase their competitiveness in the market. By focusing on incremental deliveries and constant customer validation, the chances of developing a product that does not meet market needs decrease considerably. This is particularly advantageous for SMEs and TBEs, which operate with more limited resources and need to maximize the efficiency of their investments (Rigby; Sutherland; Takeuchi, 2016).

Exploring agile methodologies: a study on Scrum and Kanban

In this section, the two agile methodologies that serve as the basis for this work are presented in a simple and direct manner: Scrum and Kanban. The



choice of these methodologies is justified by their widespread adoption and ease of adaptation to smaller companies or those based on innovative technologies (Anderson, 2010; Schwaber; Sutherland, 2017). Each offers practices and tools that help deal more effectively with limited resources and the need for rapid changes, which are quite common in SMEs and TBEs.

Scrum

Scrum is an agile methodology originally created for software development, but which is now applied to various types of projects. Its main objective is to organize work into short cycles, called sprints, which generally last between two and four weeks. At the end of each sprint, the team delivers a part of the product or service that can already be tested or used, allowing constant reviews and rapid adaptation to new demands (Schwaber; Sutherland, 2020).

Roles and responsibilities

In Scrum, three fundamental roles organize the work: Product Owner (PO), Scrum Master (SM), and Development Team. Each has specific functions, but all must cooperate to ensure frequent deliveries of value, adapt to changes, and continuously improve (Schwaber; Sutherland, 2020). Therefore, “[...] issues such as scope, deadlines, quality, risk, process, and management of product development work are not the responsibility of a single centralizing role” (Sabbagh, 2013, p. 142). Thus, these roles are particularly relevant in Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), where agility and innovation are essential for competitiveness.

Product Owner (PO): The Product Owner decides ‘what’ should be created, managing the Product Backlog (the list of product functionalities). The PO prioritizes these functionalities according to business goals, customer needs, and available time/money. In SMEs and TBEs, the PO usually has several tasks



at the same time, so it is normal for this person to also be the company owner or the person responsible for sales. What matters is that the PO knows the product and the market well, in order to quickly choose what generates the most value (Rubin, 2017).

Scrum Master (SM): The Scrum Master is the team facilitator, ensuring that everyone follows the Scrum process. The Scrum Master helps solve problems, promotes communication among team members, and encourages constant improvements. In small companies, the SM may accumulate other functions but must remain focused on helping the team work well. In technology-based startups, for example, the Scrum Master is usually someone experienced in agile methods, who works to prevent conflicts and facilitate rapid growth (Cohn, 2010).

Development Team: This is the team that gets hands-on to transform ideas from the Product Backlog into concrete results in each sprint. Composed of professionals such as programmers, designers, testers, or analysts, this team organizes itself to define how much work it can accomplish and delivers functional product increments at the end of each cycle. In SMEs and TBEs, these individuals usually have multiple skills and collaborate intensively. They have autonomy to decide the best way to perform tasks and are responsible for the quality of what is delivered (Schwaber, 2004).

Events and artifacts

In Scrum, there are four main events that guide project progress and three artifacts that make it easier to organize, prioritize, and monitor everything that needs to be done. Below, we present each of them in more detail, providing examples of how they can be applied in Small and Medium-sized Enterprises (SMEs) and (TBEs) Technology-Based Enterprises (Schwaber; Sutherland, 2020).



Sprint Planning (Sprint Planning): Sprint Planning is the meeting that starts each sprint, generally lasting two to four weeks. In this meeting, the Product Owner presents the priority items from the Product Backlog and the Development Team evaluates the effort required for each task, deciding how many of them they can complete during the sprint. It is also the moment when, in SMEs and TBEs, discussions about technical strategies arise, since teams are usually small and multidisciplinary. Once what will be done has been agreed upon, the team plans how to develop each item, defining estimates and more detailed tasks. In smaller companies, this meeting usually lasts around one to two hours, enough to align priorities and ensure that everyone understands the work to be performed (Rubin, 2017).

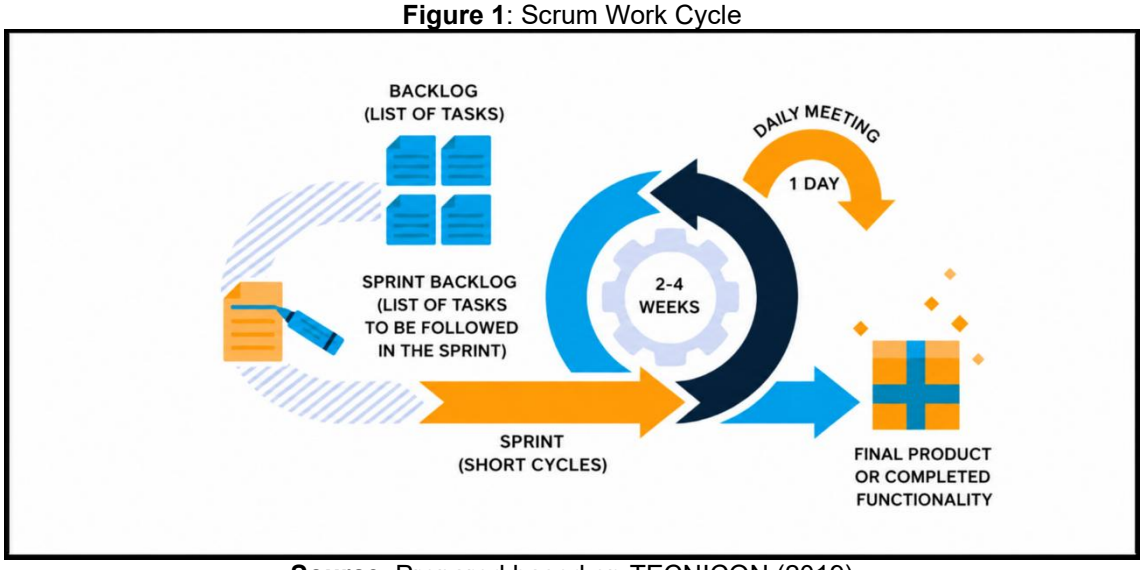
Daily Scrum (Daily Meeting): The Daily Scrum is a brief daily meeting of the Development Team to align what each member has done, what they intend to do, and identify possible obstacles that could delay progress. Even in SMEs and TBEs, where communication is usually closer, this meeting helps maintain discipline and transparency about who is doing what. Reports should be short and direct, preferably within a 15-minute limit, and more complex issues can be discussed afterward, with fewer people. Ideally, this daily routine creates a constant rhythm of collaboration, preventing problems from remaining hidden (Cohn, 2010), which reinforces Rubin's view (2017, p. 354) when stating that “[...] the daily scrum is essential for flow management.”

Sprint Review (Sprint Review): The Sprint Review takes place at the end of each sprint so that the Development Team can present the product increment to key stakeholders, including customers and managers. It is an opportunity to test what has been created, gather feedback, and discuss adjustments or ideas for upcoming sprints (Rubin, 2017). In SMEs and TBEs, this event can become a decisive moment, as the business owner or investors often participate directly, providing suggestions and approving progress. In addition to showing what has

been completed, it is also common to present progress indicators, such as how many planned items were completed, which helps make quick decisions about the direction of the product or project (Schwaber, 2004).

Sprint Retrospective (Sprint Retrospective): The Sprint Retrospective, also held at the end of each sprint, is when the team reflects on how collaboration, work organization, and the quality of what was delivered went. In smaller companies, with lean teams, this discussion becomes even more relevant, as any communication failure or task overload immediately affects productivity. Questions are usually asked about what worked well, what can be improved, and which concrete actions should be adopted in the very next sprint. The objective is to create a culture of constant learning, where the team can evolve and correct errors quickly, something fundamental in environments as dynamic as SMEs and TBEs (Schwaber; Sutherland, 2020).

Figure 1: Scrum Work Cycle



Source: Prepared based on TECNICON (2019)

Kanban

Kanban is an agile approach inspired by the Lean production system, originally developed in the automotive industry (Anderson, 2010). According to Gomes et al., (2023, p. 5), “[...] it is a fully adaptable methodology that can be



applied in various contexts, from software development to production and project management".

Unlike Scrum, Kanban does not work with fixed time cycles (sprints). Instead, the focus is on managing the continuous flow of tasks, allowing new activities to be added or completed at any time as priorities change. For Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), this flexibility is valuable because it makes it easier to deal with urgent demands and frequent adjustments in the direction of the project.

The main idea of Kanban is to visualize all the work and maintain a work-in-progress (WIP) limit that is compatible with the team's actual capacity. In this sense, "[...] visually controlling everything that is happening in production is one of the keys to the Kanban system" (Moura, 2007, p. 27), which contributes to reducing the risk of overload and increases the chances of completing activities with quality. In addition, Kanban encourages constant process reviews, stimulating small improvements whenever bottlenecks or delays are identified.

Roles and responsibilities

In the Kanban method, there are no formal roles, such as Product Owner, Scrum Master, or Development Team, as observed in Scrum.

However, in smaller teams, such as those in Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), roles emerge naturally to keep the workflow organized (Anderson, 2010). Among these roles, the following stand out:

Kanban Board Manager: Frequently, someone assumes responsibility for creating and updating the Kanban board, ensuring that the columns are well defined, such as 'To Do', 'In Progress', and 'Done', and that each task is represented by a card. This person may also organize discussions to review and improve the process. In smaller organizations, this role tends to be assigned to



one of the more experienced members or someone with prior knowledge of agile methods (Anderson, 2010).

Work team: All members who perform the activities represented on the Kanban board are part of the team. These professionals take cards from the ‘To Do’ column (that is, select tasks) and move them through the workflow as they progress with their work. In SMEs and TBEs, versatility in roles is common, with a single professional performing analysis, development, testing, and even customer service activities. This flexibility favors the adoption of Kanban because the process does not require fixed ceremonies and is more fluid (Anderson, 2010).

Flow Monitor: In some teams, someone is responsible for monitoring the pace at which cards move through the columns, observing metrics such as cycle time and the number of completed tasks. If a bottleneck is identified — for example, many tasks stuck in the ‘In Progress’ column — this person may suggest task redistributions or promote discussions on how to overcome obstacles. In smaller organizations, this monitoring is essential to quickly detect problems that could compromise value delivery (Anderson, 2010).

Events and artifacts

Although Kanban does not have events as rigidly defined as Scrum, it is based on practices and artifacts that promote transparency in work and encourage continuous improvement (Anderson, 2010). Among the main Kanban artifacts and practices, the following stand out:

Kanban Board: The Kanban board is the central element of the method, in which the columns represent the stages of the process (for example, ‘To Do’, ‘In Progress’, ‘In Testing’, and ‘Done’). Each task is represented by a card that moves from left to right as it progresses. In SMEs and TBEs, the board can be physical (a wall board) or virtual (online tools), facilitating communication among



distributed teams and allowing all members to monitor the progress of each activity (Anderson, 2010).

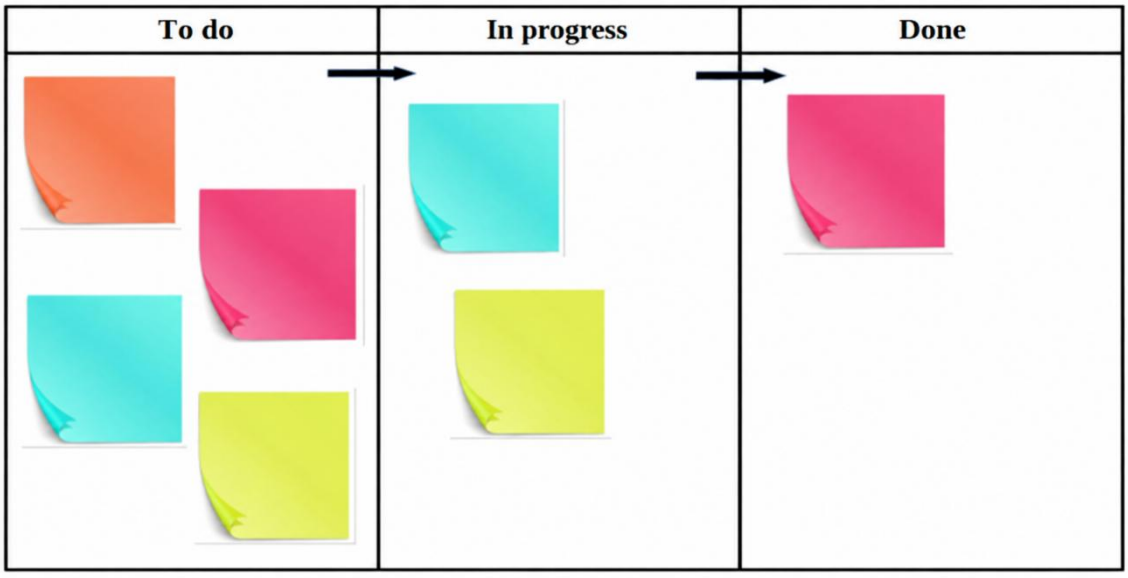
Work-in-Progress (WIP) Limits: Kanban suggests establishing a maximum number of tasks that can be in the ‘In Progress’ column at the same time. This practice aims to prevent overload, forcing the team to complete what has already been started before beginning new tasks. In SMEs and TBEs, where members perform multiple roles, this control is fundamental to ensuring focus and quality, preventing many activities from remaining open without completion (Anderson, 2010).

Replenishment Meeting: When the ‘To Do’ (or ‘Backlog’) column begins to empty or new demands arise, the team meets to discuss which tasks should be added to the workflow. This meeting usually includes the participation of people with a good understanding of business priorities, such as partners or managers. Unlike Scrum, which plans the content of each sprint at a single moment (Sprint Planning), Kanban allows new activities to be inserted at any time, which is advantageous for TBEs that need to be agile in responding to changes in the market or technologies (Anderson, 2010).

Continuous Improvement Meetings: Although Kanban does not require daily meetings or fixed reviews as in Scrum, it encourages periodic meetings to evaluate the workflow and identify areas for improvement. During these meetings, the team can review metrics such as cycle time, propose adjustments to WIP limits, or evaluate the organization of the columns (Anderson, 2010). In SMEs and TBEs, these meetings may take place weekly or biweekly, depending on the team's dynamics and demand.



Figure 2: Example of a Kanban Board



Source: Prepared based on Carvalho and Rabechini Junior (2019).

METHODOLOGY

The methodological procedures of this study consist of bibliographic research, with a qualitative and exploratory approach, seeking to develop a hybrid methodology by combining the Scrum and Kanban agile methodologies. The objective was achieved through a literature review, based on articles dealing with their implementation and combination, focusing on their advantages and disadvantages.

Based on the studies conducted, three relevant articles were selected to form the basis of the methodological proposal to be developed in this study. Table 1 summarizes the details of these articles.

These articles were selected for their alignment and relevance to the context of small and medium-sized enterprises. Based on the concepts and practices presented, a hybrid model was developed that seeks to integrate the most efficient elements of both methodologies, adapting them to the specific needs of organizations with limited resources.



Chart 1 – Data from the selected articles

Article title	Year	Authors	Journal
Diversificando na prática a utilização dos métodos ágeis: Scrum e Kanban – desenvolvimento de uma locadora de veículos	2023	Ribeiro Filho, Ricardo Alves; Farina, Renata Mirella. Florian, Fabiana.	Revista Científica Semana Acadêmica
Gerenciamento ágil de projetos com Scrum e Kanban: desenvolvendo competências estratégicas na elaboração de material didático de um curso superior em EAD	2019	Canazaro, Jamil Vinhoza; Costa, João Victor Da; Oliveira, Machado De.	Revista Interdisciplinar Pensamento Científico
Proposta de um framework de gestão de projetos utilizando as Metodologias Scrum e Kanban para desenvolvimento de produto digital	2024	SANDIM, Victor Bordim de Oliveira; CAMPANINI, Luciano.	Brazilian Journal of Production Engineering

Source: Own authorship (2025)

RESULTS AND DISCUSSION

The adoption of agile methodologies has become an increasing necessity in small and medium-sized enterprises and technology-based companies, especially due to the need to manage demands efficiently and with greater flexibility. Unlike large corporations, these companies face specific challenges, such as small teams, multiple functions performed by the same employee, and the need to adapt quickly to market changes.

Among agile approaches, Scrum and Kanban are widely used to optimize workflows and improve the delivery of value to customers. However, in smaller companies, the full application of Scrum can be bureaucratic, requiring many meetings and specific roles that are not always feasible. On the other hand, Kanban, despite providing flexibility, may lack a more formal structure for defining priorities and delivery cycles.

Given this scenario, the implementation of a hybrid model, combining Scrum and Kanban, may represent an efficient solution. This model seeks to combine the organization and predictability of Scrum with the fluidity and adaptability of Kanban, ensuring an agile system without excessive bureaucracy.



The following presents a step-by-step guide for implementing this hybrid approach, structured for small and medium-sized enterprises and technology-based companies. This model was developed considering a monthly sprint cycle, adapted to a context where resources are limited and there is a need to maximize productivity.

Guide for implementing the hybrid methodology

Step 1: Understand how the two methodologies work

Before applying the hybrid model, it is essential to understand the fundamentals of Scrum and Kanban, as combining these methodologies will allow more efficient demand management.

Scrum: A method based on short cycles called sprints, in which activities are planned, executed, and reviewed within defined periods. In the traditional model, there are roles such as Product Owner (PO), Scrum Master, and Development Team, as well as periodic meetings for alignment and continuous improvement.

Kanban: A visual workflow management method that allows tasks to move between columns according to their progress. It emphasizes limiting work in progress (WIP limit) to prevent team overload and ensure efficiency.

The main advantage of integrating these methodologies is allowing the company to have structured planning with defined cycles (Scrum), while maintaining flexibility for continuous changes and adjustments (Kanban).

Step 2: Initial alignment meeting

The first practical step in implementing the model is to hold an alignment meeting with everyone involved. This meeting aims to: understand the company's current situation and its main challenges in managing demands; identify workflow



bottlenecks and opportunities for improvement; explain the new methodology and how it will be applied in the team's routine; and define expectations and clarify doubts.

This initial meeting is essential to ensure that the team understands the need for change and is aligned with the new processes.

Step 3: Define essential roles

Although traditional Scrum defines specific roles, in smaller companies it may be unfeasible to keep all these functions separate. Thus, an adaptation is necessary:

Product Owner (PO): Responsible for defining priorities and keeping the backlog updated.

Development Team: Team responsible for executing tasks.

Scrum Master (Optional): If the company does not have a dedicated Scrum Master, this function can be replaced by short alignment meetings to remove impediments.

Step 4: Structure the work cycle

To ensure organization and predictability, work management will follow a monthly sprint cycle, distributed over four weeks, balancing planning, execution, and review. This format allows the company to have structured planning without losing the flexibility needed for adjustments throughout the month.

Week 1: Monthly planning and backlog creation; holding the monthly planning meeting; listing and prioritizing all demands in the backlog; assigning responsible individuals and deadlines for each task; and setting up the Kanban board to organize tasks. (detailed in the next step)



Weeks 2 and 3: Review of demands; monitoring task progress; adjustments to the backlog as necessary; identification and resolution of blockages and impediments.

Week 4: Sprint completion and follow-up; review of all completed deliveries; documentation of improvements and adjustments for the next cycle; and team feedback for continuous improvement.

Figure 3: Weekly Cycle



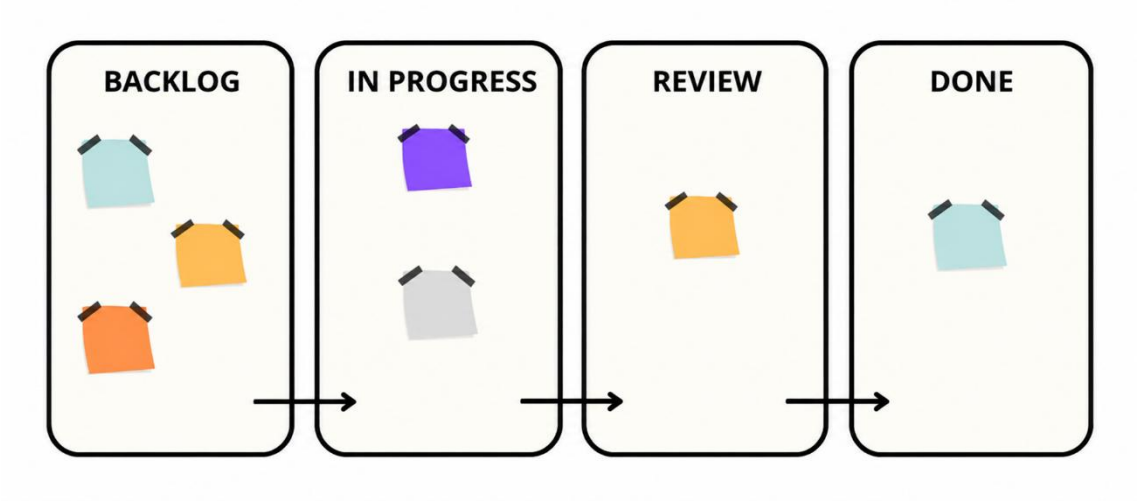
Source: Own authorship (2025)

Step 5: Configure the Kanban Board

After the initial planning, it is essential to configure the Kanban board, which will serve as a visual tool to monitor task progress.

The board should contain the following columns: Backlog (List of all pending tasks); In Progress (Tasks currently being executed); Review (Completed tasks awaiting validation); and Done (Finalized deliveries).

Figure 4 – Adapted Kanban Board



Source: Own authorship (2025)

The movement of tasks between columns must follow criteria defined by the team, ensuring that no stage is skipped. The Product Owner and the team must periodically review the board to ensure that priorities are always aligned with the company's objectives.

CONCLUSION

The integration of Scrum and Kanban proved to be an effective alternative for project management in Small and Medium-sized Enterprises (SMEs) and Technology-Based Enterprises (TBEs), providing a balanced approach that combines predictability with flexibility. The literature review conducted demonstrated that, although both methodologies are widely used, each presents specific challenges when implemented separately. Scrum, for example, may be considered bureaucratic and rigid for smaller companies due to the requirement for well-defined roles and periodic meetings. Kanban, on the other hand, although more flexible, may create difficulties in task prioritization and the definition of clear delivery cycles.

The hybrid model proposed in this study aims to mitigate these limitations by combining the strengths of both methodologies, allowing smaller companies



to manage their demands efficiently without compromising workflow organization. The suggested structure is based on monthly sprint cycles, combined with a visual task monitoring system inspired by Kanban. This approach allows structured planning of activities while maintaining the flexibility necessary for adjustments according to market needs.

Among the main benefits of this hybrid model are improved activity monitoring, optimization of execution time, and greater clarity in task prioritization. In addition, the visual management system facilitates communication among team members, promoting greater transparency and collaboration. These factors are essential for SMEs and TBEs, which generally operate with small teams and need to optimize their resources as much as possible.

Another significant advantage of this hybrid methodology is its adaptability to different business contexts. Companies with variable demands and a need for continuous deliveries can benefit from Kanban's flexibility, while those requiring more structured planning can take advantage of Scrum guidelines. Thus, the proposed approach can be adjusted according to the particularities of each organization, becoming a versatile solution for project management.

Despite the advantages identified, it is important to emphasize that the application of the hybrid model still requires practical testing to validate its effectiveness in different scenarios. Future studies may explore its implementation in real companies, analyzing productivity metrics, team engagement, and the impact on delivering value to customers. In addition, comparative research with other hybrid approaches may help refine the methodology and identify opportunities for improvement.

Finally, this study reinforces the importance of continuously adapting agile methodologies to the specific needs of each company. As the business environment becomes more dynamic and competitive, finding a balance between



structure and flexibility will become increasingly essential to ensure efficiency in project management and the sustainable growth of organizations.

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