

Comparative Analysis of Project Management software using Monday.com and Smartsheet for Team Collaboration

Oyewale Victor Oyedele

B01647927

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**DECLARATION OF ORIGINALITY**

I declare that this is an original study based on my own

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# **CHAPTER ONE**

# **1.0 Introduction**

## **1.1 Background**

A project is a temporary activity undertaken with the aim of generating a unique product, service, or result. According to the Project Management Institute (PMI, 2021), a project has a defined beginning and end, which sets it apart from ongoing and repetitive operations. The outcome of a project is unique, aimed at delivering specific value or achieving particular objectives. Nicholas and Steyn (2020,p.3) describe a project as a short-term activity designed to produce a distinct product, service, or result. Similarly, Schlick et al. (2016,p.) view a project as a planned effort, often involving significant time and aimed at developing new products or technologies. Projects are defined by specific goals, a set timeline, and the allocation of resources (Waheed, 2016, cited in Straw, 2015,p.328). Success is typically measured by the project's ability to meet its objectives within constraints of time, cost, and quality (Talbot and Venkataraman, 2011,p.33).

Project management is important for navigating the unique goals, constraints, and complexities associated with projects. The discipline involves detailed planning, resource allocation, and management of risks to ensure that projects are completed successfully. Effective project management balances the "triple constraint" of scope, time, and cost, as changes to one element impact the others (Atkinson, 1999). Communication, leadership, and stakeholder management are essential for overcoming challenges and achieving project objectives (Cleland & Ireland, 2007). Projects drive innovation and change, fostering organizational growth and competitiveness by addressing specific challenges or opportunities (Williams et al., 2019,p. 646). They enable organizations to adapt and evolve, contributing to their overall success.

Project management is also important for effectively executing projects across industries, involving the planning, organizing, directing, and controlling of resources to achieve goals within time, cost, and quality constraints (Turner, 2014; Alehegn, 2020). The Project Management Institute (PMI, 2021) defines it as the application of knowledge, skills, tools, and techniques to meet project requirements, outlining five key process groups: initiating, planning, executing, monitoring and controlling, and closing. Beyond technical aspects, project management also requires strong leadership, communication, and stakeholder management to navigate interpersonal dynamics and align diverse interests (Cleland & Ireland, 2007; Fernando & Luís, 2024).

The importance of these human-centric elements highlights the value of project management software tools, such as monday.com and Smartsheet, which facilitate team collaboration and enhance project execution. This research will compare these tools to assess their effectiveness in supporting collaborative efforts and overall project management.

Monday.com and Smartsheet are prominent project management tools, each with distinct features and target audiences. **monday.com** offers a visually intuitive platform with customizable workflows, task assignments, and integration with third-party applications, making it ideal for teams seeking a flexible and user-friendly solution (Mapa, 2024). Its emphasis on visual management fosters clear communication and transparency but may not suit those needing more detailed data management while **Smartsheet**, with its spreadsheet-like interface, excels in detailed project planning through Gantt charts, resource management, automated workflows, and advanced reporting tools, catering to users familiar with spreadsheets and requiring comprehensive planning capabilities (Mamaeva et al., 2022). While Smartsheet's detailed features support complex project management, its complexity can present a learning curve for new users. Comparing Monday.com and Smartsheet therefore is important as both software represent leading solutions in project management but address different needs and preferences. This comparison highlights how each tool supports various project management aspects, including team collaboration, task tracking, data management, as well as comparing their technical features and functionalities, examining their strengths, weaknesses, and came up with computing artifacts by creating prototypes to a common brief giving users and organizations the opportunity to make informed decisions in selecting a suitable software that best aligns with their requirements and workflows.

Team collaboration is essential for project management success, significantly impacting the ability to meet project goals. Effective collaboration enhances the team's capacity to tackle challenges, plan tasks efficiently, and ensure timely, budget-compliant delivery (Hoegl & Gemuenden, 2001; Hoegl et al., 2004). Quality teamwork and efficient communication are pivotal, with project managers playing an important role in fostering these elements (Ali et al., 2021; Jones, 2008). Utilizing project management software, agile methodologies, and knowledge-sharing environments can optimize collaboration and improve outcomes (López-Alcarria et al., 2019; Farouk et al., 2023). Therefore, this research aims to compare Monday.com and Smartsheet and evaluate their role in enhancing team collaboration.

The objective of this study is to conduct a comparative analysis of monday.com and Smartsheet to identity and document the key features, understand their similarities and differences, evaluate their effectiveness in improving collaboration among teams and provide practical recommendations to end-users. This research aims to offer significant insights to organisations in selecting suitable software for their needs by analysing specific elements such as user interface, functionality, integration capabilities, performance metrics, flexibility and ease of use. This study's findings will contribute to the existing body of knowledge on project management software and provide practical recommendations for enhancing team collaboration.

## **1.2 Problem Statement**

Effective project management and efficient collaboration among teams are crucial elements that drive the growth of an organization, particularly in today's dynamic business environment. Project management entails the coordination of various project components and the management of people to accomplish predetermined objectives and outcomes. Due to technological advancements, project management has expanded its scope beyond overseeing defense and engineering projects to encompass a broader range of applications. Consequently, there is an increasing demand for project management software within the information technology industry. Similarly, Project management has also garnered attention in the academic space, supported by many scholarly journals and literature reviews. The growing complexity of modern projects requires further research to comprehend and develop smart project management software that can effectively fulfill project requirements.

Although there is a growing demand for project management software and an increase in its development and usage by organizations, it is necessary to assess its effectiveness in promoting collaboration among teams and achieving project success. The software market is rich with project management software, each offering unique functionalities and features. Nevertheless, there has been limited research conducted to assess and compare the available software in the market and their influence on team collaboration and project efficiency.

Assessing the advantages and disadvantages of various project management software therefore can be helpful in helping organizations select the appropriate software that enhances their team's collaboration and project management capabilities. This research aims to conduct a comparative analysis of monday.com and Smartsheet, two popular project management software choices in the market. Each software has unique and diverse features and functionality. Monday.com is known for its user-friendly interface and customizable workflows, while Smartsheet offers a spreadsheet-like interface. Additionally, they are frequently utilized by small and medium-sized organizations. The research findings will offer useful insights into the software's strengths and drawbacks, enabling organizations to make more informed decisions when selecting project management software for future projects.

## **1.3 Objectives of the Study**

The goal of this research is to evaluate and compare the functions of monday.com and Smartsheet as project management software in improving team collaboration and driving project success. This goal will be achieved through the following objectives:

1. Determine the specific features and functionalities (such as task management capabilities, integration testing, reporting and analytics, and interface navigation) of Monday.com and Smartsheet that enhance team collaboration
2. To evaluate the key strengths and weaknesses of monday.com and Smartsheet as project management tools in terms of their collaboration features, task assignment features, and file-sharing capabilities.
3. To determine the impact of monday.com and Smartsheet on team collaboration and project success by assessing user feedback and case studies focusing on their collaborative capabilities.

## **1.4 Research Questions**

The following research questions in line with the objectives will be answered:

1. What specific features and functionalities of Monday.com and Smartsheet contribute to enhanced team collaboration, particularly in terms of task management capabilities, integration testing, reporting and analytics, and interface navigation?

2. How do the features, functionality and performance of monday.com and Smartsheet compare in supporting effective team collaboration and what are the key differences in their functionalities?

3. How do the key strengths and weaknesses of Monday.com and Smartsheet, including collaboration features, task assignment features, file sharing capabilities, real-time updates, and automation and workflow compare in their effectiveness as project management tools?

4. What is the impact of Monday.com and Smartsheet on team collaboration and project success, as evidenced by user feedback and case studies focusing on their collaborative capabilities?

## **1.5 Significance of the Study**

This research makes an important contribution to the fields of academia as well as industry. This research contributes to the current knowledge base in academia by enhancing the literature on project management software and team collaboration. This study explores the relationship between project management tools and collaborative practices to get insights into how these software impact team efficiency, communication, and overall project success. In addition, it addresses the gap in the existing study by providing empirical evidence on the relative influence of project management software on team collaboration. Furthermore, the findings of this study can provide valuable insights for future investigations, guiding the development of new hypotheses and research methodologies aimed at examining the evolving landscape of digital collaboration tools.

The findings from this research will assist organizations in making well-informed judgments when choosing project management software that is most suitable for their collaboration needs. An analysis of popular products such as Monday.com and Smartsheet can provide valuable insights for business executives to select the software that best aligns with their team dynamics and project needs. This research examines the advantages and disadvantages of these technologies providing valuable references for managers seeking to improve team performance and project results. Furthermore, the research results can have an impact on software development strategies, motivating providers to enhance their features and functionalities to better cater to the collaborative requirements of their users.

## **CHAPTER TWO**

## **2.0 Literature Review**

## **2.1 Conceptual Review**

## **2.1.1 Definition of Project**

The concept of a project is fundamental to the field of project management, encompassing various definitions and perspectives that capture its multifaceted nature. At its core, a project is a temporary endeavour undertaken to create a unique product, service, or result. This definition, as articulated by the Project Management Institute (PMI), underscores two critical characteristics: temporariness and uniqueness (PMI, 2021). A project is temporary in that it has a defined beginning and end, distinguishing it from operations, which are ongoing and repetitive. The unique aspect implies that the outcomes of a project are distinct from any other, providing specific value or achieving particular objectives. Nicholas and Steyn (2020) elaborate on this by describing a project as any short-term activity initiated to produce a specific product, service, or result. Furthermore, in industrial engineering and management, a project is viewed as a planned piece of work with a specific purpose, often requiring significant time, aimed at developing new products or technologies (Schlick, et al., 2016). This description aligns with the general understanding that projects are bounded by specific objectives and timelines, making them finite.

The conceptualization of a project involves understanding its structure and the allocation of resources. According to Waheed (2016, cited in Straw, 2015), a project consists of a set of activities with clearly defined start and end dates, specific goals, and assigned resources. This definition emphasizes the importance of planning and resource management in achieving the project's goals. The success of a project is often measured by its ability to achieve its intended outcomes within the constraints of time, cost, and quality (Talbot and Venkataraman, 2011, p33). Projects require detailed planning to allocate the necessary resources, set achievable milestones, and establish a realistic timeline for completion. A study by Serrador (2013) reported a strong link between planning and project success.

Projects are characterized by their unique goals and objectives, differentiating them from routine operational work. As noted by Jugdev and Müller (2005), the uniqueness of each project lies in its specific deliverables, which are tailored to meet needs or solve specific problems. This inherent uniqueness also introduces a level of complexity and uncertainty, making project management a critical component for ensuring successful outcomes. A project is also characterized by its constraints and limitations, which typically include scope, time, cost, and quality. These constraints, often referred to as the "triple constraint" or "iron triangle," are interdependent, meaning changes to one element will invariably impact the others (Atkinson, 1999). Effective project management involves balancing these constraints to meet the project's goals while satisfying stakeholder expectations.

The dynamic and often complex nature of projects requires effective communication, leadership, and stakeholder management to navigate challenges and ensure successful outcomes (Cleland and Ireland, 2007). Thus, projects necessitate collaboration and coordination among various stakeholders, including project teams, sponsors, clients, and end-users. This collaborative dimension underscores the importance of soft skills in project management, complementing the technical competencies required to manage the project's lifecycle.

In the context of project management, projects are seen as strategic initiatives that necessitate careful planning, execution, and control (Crawford and Pollack, 2007). Effective project management involves the application of knowledge, skills, tools, and techniques to meet project requirements and achieve successful project completion (Patanakul and Shenhar, 2012). This process includes managing risks, optimising resources, and ensuring that project deliverables align with the initial goals and objectives. The discipline of project management thus plays a vital role in navigating the complexities and uncertainties inherent in projects.

Furthermore, projects serve as essential drivers of innovation and change within organisations. Whitty and Maylor (2009) argue that projects provide a structured approach to implementing new ideas, products, or services, thereby fostering organisational growth and competitiveness. By addressing specific challenges or opportunities, projects enable organisations to adapt and evolve in a dynamic environment. Williams et al. (2019) highlight that projects are instrumental in driving progress and improvement across various domains, contributing to the overall development and success of organisations. Some of the most notable projects in modern times include the Manhattan Project, which created the first atomic bomb; the Apollo Moon Program; the construction of the Channel Tunnel; the design of the Airbus; the development of new products; the construction of large office buildings; the relocation of factories; and the installation of new information systems. These examples demonstrate the diverse applications and significant impact of successful project execution.

## **2.1.2 Project Management**

Project management (PM) is an essential field that has a crucial impact on the effective implementation of projects in various industries and organisational contexts. Project management is a multifaceted discipline encompassing the planning, organising, directing, and controlling of resources to achieve specific goals within a defined timeline. Project management is a dynamic and developing topic with new ideas that regularly need to be updated. Several definitions and frameworks have been put forward by scholars and professional organisations to capture the essence of project management. By identifying the unique and temporary nature of projects, Turner (2014) defines project management as the process of managing projects to produce a unique product, service, or result within the constraints of time, cost, and quality.

Similarly, Alehegn (2020) noted that project management involves planning and organizing a company's resources to move a specific task, event, or duty towards completion. The discipline of planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives.

According to ShivakumarReddy (2015), project management is a structured approach to achieving specific organisational goals within defined constraints. It is the process of planning, organising, and managing resources to bring about the successful completion of a specific project.

A widely accepted definition of project management is provided by the Project Management Institute (PMI), which describes it as "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements" (PMI, 2021). According to the Project Management Institute (PMI), project management involves five process groups: initiating, planning, executing, monitoring and controlling, and closing (PMI, 2021). During the initiation phase, the project’s value and feasibility are assessed, leading to the development of a project charter. In the planning phase, detailed project plans are developed, outlining the scope, schedule, budget, and quality requirements. Effective planning is critical, as it sets the foundation for all subsequent project activities. Execution, the phase where the project plan is put into action, involves coordinating people and resources, as well as integrating and performing the activities of the project in accordance with the project management plan. Monitoring and controlling processes occur concurrently with execution, ensuring that project objectives are met by tracking performance and making necessary adjustments, while the closing phase formalizes the acceptance of the project deliverables and concludes the project, often involving post-project evaluation and documentation. (Turner, 2014; Schwalbe 2017)

The concept of project management is not only a technical endeavour but also a human-centric process, where effective leadership, communication, and stakeholder management are pivotal to project success. Project managers must navigate complex interpersonal dynamics and ensure alignment among diverse stakeholders (Cleland and Ireland, 2007). The ability to manage stakeholder expectations and foster a collaborative project culture can significantly influence project outcomes. Fernando and Luís (2024) assert that effective project management requires skills in human resource management, leadership, and quality to optimize time and cost while ensuring sustainability in economic, environmental, and social dimensions. Eskerod and Huemann (2013, p40) also examine the importance of project stakeholder management in sustainable development, emphasising the ethical principles that project managers follow to efficiently handle stakeholders. This clarifies the ethical and strategic significance of involving stakeholders in project management practices.

## **2.1.3** **Project Management and Team Collaboration**

Team collaboration is an important aspect of project management, significantly impacting the success of innovative projects (Hoegl and Gemuenden, 2001). Effective collaboration within a team facilitates the pooling of knowledge and skills, enhancing the team's capacity to tackle technical challenges, plan tasks efficiently, and oversee project activities to ensure timely and budget-compliant delivery (Hoegl et al., 2004). The quality of teamwork is recognized as a pivotal factor that mediates the influence of various competencies, such as transformational leadership, on project success (Ali et al., 2021). Thus, cohesive teamwork, efficient communication, and collaboration among team members are essential to achieving project objectives (Trosman et al., 2016). Moreover, the role of project managers in nurturing teamwork and integrating diverse perspectives is crucial for effective collaboration on large-scale projects (Jones, 2008). The success of project management is intricately tied to the quality of teamwork, emphasizing the importance of collaboration, communication, and coordination among team members to achieve project goals.

Enhancing collaboration within project management involves leveraging various tools and techniques to foster effective teamwork and improve project outcomes. Research by Hoegl and Gemuenden (2001) highlights the importance of teamwork quality in innovative projects, emphasizing collaboration to acquire social, project management, technical, and creative skills. Agile methodologies, recognized for their participative and constructionist principles, are valuable for promoting collaboration (López-Alcarria et al., 2019). Additionally, implementing building information modeling (BIM) in construction projects can facilitate effective collaboration among team members (Farouk et al., 2023). In healthcare settings, collaborative learning systems and quality improvement support structures enhance collaboration and project quality (Stafford et al., 2020; McNicholas et al., 2019). Overall, a combination of tailored social computing platforms, project management software, agile practices, and knowledge-sharing environments can optimize collaboration within project teams, leading to improved project outcomes and team performance.

However, effective collaboration in project management presents various challenges that require strategic approaches for successful outcomes. Issues such as cultural diversity, language differences, varying IT proficiency, and the need for global e-collaboration technologies necessitate robust strategies (Munkvold, 2005). Managing information systems projects in virtual environments and with distributed teams requires maximizing efficiency and communication through tailored strategies (Torres-Sipión, 2024). To address these challenges, project managers can adopt agile project management approaches, establish cross-functional teams, engage stakeholders, implement robust risk management strategies, and carefully plan and schedule tasks to accommodate team members' working hours (Bushuyev, 2023; Ezeigweneme, 2023). Furthermore, leveraging project management tools, such as building information modeling (BIM) in construction projects, can enhance collaboration processes among team members (Farouk et al., 2023). By integrating these strategies and tools, project managers can overcome collaboration challenges and drive successful project outcomes.

## **2.2 Modern History of Project Management**

The origin of modern project management can be traced back to the early 1900s when the focus was primarily on scheduling and resource allocation. This period saw a transformation from a Craft system to a Human Relations Administration, facilitated by advancements in transportation and telecommunication systems. These advancements allowed for higher mobility and faster communication, crucial for managing projects more efficiently. Notably, Gantt charts were developed and applied in significant projects like the Hoover Dam and the Interstate Highway, providing a visual tool for tracking project progress (Seymour and Hussein, 2014). The Manhattan Project is often cited as a pivotal point, exemplifying principles of organization, planning, and direction that influenced modern project management practices (Shenhar, 2007).

The period from 1958 to 1979 was marked by significant technological advancements and the formalization of project management as a discipline. This era introduced Management Science into project management processes, expanding its application across various sectors. Key developments included the creation of PERT (Project Evaluation Review Technique) by the US Navy and CPM (Critical Path Method) by du Pont for construction scheduling (Kelley and Walker, 1989). These methodologies introduced probabilistic duration estimates and activity-based scheduling, respectively, enhancing project planning and execution.

The establishment of the International Project Management Association (IPMA) in 1965 and the Project Management Institute (PMI) in 1969 marked the beginning of project management's professionalization. PMI's publication of "The Project Management Body of Knowledge" (PMBOK) provided a comprehensive guide to best practices in the field (ITRM Guideline CPM 110-01, 2006). The proliferation of minicomputers in the 1970s also spurred the development of numerous project management software tools, further advancing the discipline (Azzopardi, 2014).

The advent of personal computers in the 1980s revolutionized project management by making sophisticated software tools more accessible. This period saw the adoption of the Projects Resource Organization Management Planning Technique II (PROMPT II) model and the introduction of the Theory of Constraints (TOC) by Eliyahu M. Goldratt (Cox and Goldratt, 1986). The PMBOK guide, initially published in 1983, was continually revised to include new project management functions such as risk management and procurement (Stretton, 2023).

Since 1995, technological breakthroughs have driven significant changes in project management methodologies. The update of PRINCE to PRINCE2 in 1996 and the development of Critical Chain Project Management (CCPM) based on the Theory of Constraints marked notable advancements (Goldratt, 1997). The emergence of Agile methodologies, particularly following the publication of the Agile Manifesto in 2001, represented a shift towards more flexible and adaptive project management practices (Beck et al., 2001). Agile's iterative approach and emphasis on customer collaboration and responsiveness to change addressed many limitations of traditional methodologies.

The digital revolution has profoundly impacted project management, with software tools like Microsoft Project, Jira, and Trello becoming popular. Advances in data analytics and artificial intelligence also offer predictive analytics and decision support, enabling better risk management and resource allocation (Marnewick et al., 2016). The establishment and evolution of Project Management Offices (PMOs) reflect the ongoing adaptation of project management practices to meet the demands of increasingly complex projects (Darling and Whitty, 2016). The evolution of project management from its early 20th-century origins to the present day has been marked by significant technological, methodological, and organizational advancements. While early efforts focused on basic scheduling and resource allocation, subsequent periods introduced sophisticated tools and techniques, professional standards, and flexible methodologies. The integration of digital technologies and the rise of Agile practices continue to shape the future of project management, highlighting the field's dynamic and evolving nature.

## **2.3 Project management software in modern organisations**

In today's fast-paced and increasingly complex business environment, the adoption of project management software has become crucial for modern organizations. The complex nature of modern project management practices necessitates the assistance of project management software. These tools are designed to streamline project planning, execution, and monitoring, enabling companies to achieve their strategic objectives more efficiently. Organizations today face a multitude of challenges in managing complex projects, including coordinating dispersed teams, ensuring effective communication, and optimizing resource allocation. Traditional project management methods often fall short in addressing these issues, leading to inefficiencies and project delays. Organisations acquire these systems as software packages to provide managers with the necessary decision-making support (Raymond and Bergeron, 2008, p214). These project management software offers robust solutions to these challenges by offering integrated platforms that enhance collaboration, automate routine tasks, and provide real-time insights into project progress.

Project management software is crucial in modern organizations to drive change successfully. Organizations that invest in creating a future-focused culture and hiring skilled individuals proficient in project management contribute to reducing project failures and ensuring good governance and standardized processes. In their study, Kalman and Rathet (2022) found 67% more project failure in organisations that undervalue project management. This finding showed the significant impact that robust project management practices can have on the success and efficiency of organizational projects, highlighting the need for businesses to invest in and prioritize effective project management strategies. By employing project management software, companies can streamline managers' efforts and reduce errors in handling multiple projects simultaneously (Nethravathi, et al., 2022, p.452). Various project management models provide a structured framework with approaches, procedures, and philosophies tailored for software project management (Chomal et al., 2022, p.291). The ongoing development of project management tools aims to automate project administration tasks throughout their life cycles (Mishra and Mishra, 2013, cited in Akbar et al, 2023,p2).

Agile methodologies, when implemented correctly, can reduce the overhead costs associated with traditional project management by promoting iterative development and continuous feedback loops (Haider, 2017). Implementing standardized processes through project management software ensures consistent governance and accountability across projects. The agile approach has been associated with enhanced project governance, as it incorporates regular reviews and adaptive planning (Livermore, 2008). These practices help maintain alignment with organizational goals and improve stakeholder engagement. Agile management practices have been found to mitigate complexity by breaking down projects into manageable increments and facilitating frequent reassessments (Sohi et al., 2020). This approach not only simplifies project execution but also enhances the ability to manage risks effectively.

Furthermore, a review by Ciric Lalic et al. (2022) reveals that agile methodologies have been shown to improve project outcomes, particularly in terms of flexibility and team performance. This finding is supported by research indicating that agile practices can reduce project complexity and improve performance by enabling teams to respond swiftly to changes (Serrador and Pinto, 2015). Agile development software based on project management helps modern enterprises shorten project cycles, enhance team monitoring, predict risks, improve product quality, and boost employee efficiency through iterative development. Li et al. (2019) asserted that shortened project cycles improved project monitoring capabilities, and increased employee utilization and efficiency are key benefits of agile practices using project management software. Modern organizations utilize project management software for effective project implementation. High-tech companies use project management software to minimise loss and increase reliability. The adoption of advanced features such as cloud-based platforms, artificial intelligence, and data analytics has expanded the capabilities of project management software, presenting new opportunities for organizations. These innovations enable more accurate forecasting, better decision-making, and improved adaptability to changing project requirements.

By leveraging these tools, organizations can not only overcome existing challenges but also seize new opportunities to enhance productivity, reduce costs, and achieve higher levels of project success. As such, the relevance and impact of project management software in modern organizations cannot be overstated, making it a critical area of focus for both practitioners and researchers."

## **2.3.1 Impact of Project Management Software on Remote and Distributed Teams**

The rapid adoption of remote work has emphasized the significance of efficient project management software (PMS) in sustaining productivity and collaboration across geographically separated teams. Project management software is essential in creating a centralized platform where team members can access project-related information, track progress, and communicate effectively (Fuller, Hardin, & Davison, 2018). The role of PMS in facilitating remote work is multifaceted, encompassing various functionalities designed to overcome the challenges of physical separation. Software like Trello, Asana, Smartsheet, and Monday.com provide essential functionalities including task delegation, progress monitoring, and integrated communication channels. These elements are vital for ensuring transparency and accountability in remote teams. (Casey and Richardson, 2006; Seerat, Samad and Abbas, 2013; Yousif, Gheni, Jusoh, Ilyana, and Shanmugam, 2022). However, the effectiveness of these tools varies depending on their design, integration capabilities, and the specific needs of the team.

Project Management tools enhance transparency among team members collaborating on projects. In their study, Wrycza and Marcinkowski (2017) emphasize the importance of such tools in maintaining transparency and accountability in remote teams. They argue that features like task assignments and progress tracking are essential for the effective management of distributed workforces. However, Fuller et al. (2020) contend that while these tools offer significant benefits, their success heavily depends on the interoperability with other systems such as Customer Relationship Management (CRM), Enterprise resource planning (ERP), and communication platforms. They suggest that the seamless integration of PMS with other software tools is crucial for minimizing disruptions and enhancing productivity. Thus, the integration capabilities of PMS with other software such as Slack, Zoom, and Google Workspace further enhance their utility by enabling seamless communication and file sharing, allowing remote teams to use a cohesive set of tools to manage their workflow and enhance productivity (Bowersox, Closs, and Cooper, 2019). This integration reduces the fragmentation of information and ensures that all team members have access to the same data, thereby minimizing misunderstandings and enhancing collaboration.

Furthermore, the ease of access provided by PMS is critical in ensuring that all team members, regardless of location, can contribute effectively. This is particularly important in asynchronous work environments, where team members operate across different time zones. The ability to update tasks, track progress, and communicate asynchronously helps maintain momentum in projects without requiring simultaneous online presence, thus reducing delays (Gajendran and Harrison, 2007).

The advantages of using project management software for distributed teams are significant. PMS offers numerous benefits for crosscutting teams. Cheverda (2022) argues that the flexibility offered by PMS is one of its most compelling benefits. It allows teams to operate across different time zones and accommodate varying work schedules, thereby increasing overall productivity. Garyaeva, Garyaev, and Parfenov (2023) support this view, noting that the automation of routine tasks through PMS frees up time for more strategic activities, enhancing the overall efficiency of remote teams. Moreover, the ability of project management software to facilitate data-driven decision-making is a notable benefit. According to Cheverda (2022), the advanced reporting and analytics features of PMS provide managers with valuable insights into team performance and project progress. These insights enable project managers to make more informed decision-making and help identify areas for improvement

Sarker et al. (2011) noted that while PMS can facilitate task-related communication, it cannot fully replace the social interactions that build trust and rapport among team members. Regular virtual meetings, team-building activities, and informal communication channels are essential for maintaining a sense of community and belonging in remote teams. This suggests that a holistic approach, combining the use of PMS with strategies to foster social connections, is necessary for the success of remote work.

The increasing reliance on PMS in remote work environments reflects broader trends in the digital transformation of organizational processes. Yet, the implementation and use of PMS also introduce new challenges, such as ensuring data security, managing digital overload, and fostering a sense of team cohesion in a virtual environment. While the benefits of project management software for remote teams are well-documented, several challenges persist. Hertel and Orlikowski (2014) identify the digital divide as a significant barrier to the effective use of PMS. Disparities in internet access and technological proficiency can create inequities within teams, where some members are better equipped to leverage the tools than others. This divide can hinder collaboration and exacerbate existing inequalities within the team. Conversely, Gilson et al. (2015) argue that PMS can mitigate some of these challenges by providing a structured framework for collaboration that is less dependent on individual technological capabilities.

Security and data privacy are also critical concerns in the use of PMS. Alsharo, Gregg, and Ramirez (2017) highlight that remote work increases the risk of data breaches and unauthorized access to sensitive information. PMS tools must therefore incorporate robust security features, such as encryption and multi-factor authentication, to protect organizational data. However, the implementation of these security measures can sometimes impede usability and accessibility, creating a trade-off between security and user convenience (Sarker et al., 2011).

While project management software offers significant advantages for remote and distributed teams by providing structure and facilitating communication, its successful implementation requires careful consideration of integration capabilities, security measures, and strategies to foster social connections. Addressing these challenges is essential for maximizing the benefits of PMS and ensuring the productivity and cohesion of remote teams.

## **2.4 Comparative Analysis of Project Management Tools and Software**

Researchers have conducted numerous comparative analyses of project management software, highlighting the critical aspects influencing the choice and effectiveness of these tools in managing complex projects. This section explores the literature on the analysis of project management software available for project managers, summarizing key findings and identifying areas for further research. A study by Sudarshan and George (2021) analyzed Primavera P6 and Microsoft Project (MSP) in managing a hotel construction project. They evaluated criteria such as scheduling capabilities, calendar options, Work Breakdown Structures (WBS), and overall project completion times. The study found Primavera P6 superior in scheduling efficiency, resulting in a project completion time approximately three months shorter than MSP. This suggests that software choice can significantly impact project timelines and user adoption within organizations.

Cicibas, Unal, and Demir (2010) compared 10 project management software tools (PMSTs) using 17 criteria, including task scheduling, resource management, collaboration, time tracking, and risk assessment. Their findings revealed that no single tool provided all desired functionalities, although common features included task scheduling, resource management, collaboration, and document management. A key limitation was the lack of user testing, which left the practical effectiveness of these tools unexplored.

Pasarič and Pušnik (2022) examined five tools—ClickUp, Wrike, Trello, Paymo, and Asana—focusing on cooperation and communication, project planning, progress tracking, cost management, report generation, customization, and integration. The study primarily assessed free versions, which may lack features available in paid versions. The subjective nature of the evaluation and scoring system was another limitation, affecting the study’s objectivity. Pereira and Gonçalves (2013) compared free/open-source web-based project management tools against PMBOK and CMMI-DEV standards. They found that while the tools supported time management well, they lacked robust features for risk management, procurement, quality, and communication management. The evaluation’s heavy reliance on the authors’ subjective interpretation of tool functionalities introduced potential bias. Pawłowski and Plechawska-Wójcik (2022) used a multi-method approach, combining surveys and cognitive walkthroughs to evaluate tools like Asana, Bitrix24, Trello, Wrike, and Monday.com. This rigorous methodology, incorporating both quantitative and qualitative data, ensured a well-rounded evaluation. Asana emerged as the most favored tool due to its superior interface design and robust features.

The existing body of research on project management software provides a comprehensive overview of the strengths and weaknesses of various tools. Studies have employed diverse criteria and methodologies to assess these tools' effectiveness, with the majority focusing on technical evaluations and less emphasis on actual user-experience feedback. Additionally, these studies have not focused on paid versions of software such as Monday.com and Smartsheet. The present study addresses the current gaps by including more practical, user-driven assessments and considering two of the most popular project management software in modern organisations and utilizing the 30-day free trial version to gain access to most of the features on the software.

The comparative analysis of project management tools reveals a diverse landscape of functionalities and user experiences. While some tools excel in specific areas like scheduling and resource management, others offer robust integration and customization options. The varying methodologies and criteria used in previous studies highlight the importance of context-specific evaluations to determine the most suitable tools for different project management needs. This study addressing current research gaps by incorporating user feedback to technical evaluating and accessing both more features by leveraging the 30-day free trial versions of the software thereby providing more comprehensive understanding of the effectiveness and practicality of project management tools in diverse organizational settings.

## **2.5** **Characteristics of Monday.com and Smartsheet**

Monday.com and Smartsheet are popular project management tools that offer a range of functions tailored to enhance team collaboration and project organization. Monday.com provides users with a visual and intuitive platform that allows teams to plan, track, and manage projects effectively. It offers features such as customizable workflows, task assignments, progress tracking, and integration with various third-party applications, making it suitable for teams looking for a flexible and visual project management solution (Mapa, 2024). On the other hand, Smartsheet is known for its powerful spreadsheet-like interface that enables users to create, update, and collaborate on project tasks and timelines in real-time (Mamaeva et al., 2022). It offers features such as Gantt charts, resource management, automated workflows, and reporting tools, making it ideal for teams that require detailed project planning and execution capabilities. Both tools are designed to streamline project management processes, improve communication among team members, and enhance overall project efficiency.

Monday.com is known for its user-friendly interface and customizable workflows that cater to diverse project needs. The platform offers a visually appealing layout that simplifies task management, progress tracking, and team collaboration. Users can easily create and assign tasks, set deadlines, and monitor project timelines in a clear and organized manner. The tool intuitive design allows for seamless communication among team members, fostering collaboration and transparency throughout the project lifecycle (Mapa, 2024). Additionally, the platform supports integration with various third-party applications, enhancing its functionality and adaptability to different project requirements.

Similarly, Smartsheet stands out for its spreadsheet-like interface, making it familiar and easy to use for individuals accustomed to working with traditional spreadsheets. The platform offers advanced reporting and analytics features that enable users to track project progress, analyse data, and generate insightful reports. Smartsheet excels in detailed data management, allowing users to organize and manipulate large datasets efficiently. The tool supports complex project planning through features such as Gantt charts, resource management tools, and automated workflows, enabling teams to create and execute detailed project plans effectively (Mamaeva et al., 2022). Smartsheet's combination of a familiar interface, advanced reporting capabilities, detailed data management features, and support for complex project planning makes it a versatile and powerful tool for project management across various industries and project types.

## **2.6 Theoretical Framework**

## **2.6.1 The Task-Technology Fit (TTF) Model**

The Task-Technology Fit (TTF) Model posits that information technology (IT) is more likely to have a positive impact on individual performance and be utilized if the capabilities of the technology match the tasks that the user needs to perform. This model, developed by Goodhue and Thompson, suggests that the success of a technology depends on its ability to support task requirements effectively (Goodhue and Thompson, 1995). The central idea of TTF is that technology alone does not guarantee improved performance; it is the alignment between task requirements and technology functionalities that determines effectiveness. This concept can be deconstructed into several key components: task characteristics, technology characteristics, task-technology fit, technology utilisation and performance impacts. Task characteristics refer to the specific requirements and activities inherent in the tasks, while technology characteristics denote the functionalities and features of the technology. Task-technology fit occurs when the technology’s capabilities align well with the task requirements, leading to enhanced performance outcomes (Goodhue and Thompson, 1995; Goodhue, 1992).

The TTF Model can provide a robust framework for comparative analysis of project management software solutions like Monday.com and Smartsheet. Both tools offer various features designed to enhance project management, including task tracking, collaboration, and workflow automation. According to TTF, the key to evaluating these tools lies in assessing how well their functionalities support the specific tasks inherent in project management. For example, Monday.com's visual project tracking capabilities and customizable workflows might be particularly effective for teams that prioritize visual task management and flexibility in workflow design. Conversely, Smartsheet's spreadsheet-like interface and advanced reporting features could be more suited to tasks that require detailed data management and comprehensive reporting.

By applying the TTF model, we can systematically evaluate the alignment between the functionalities of Monday.com and Smartsheet and the task requirements of project management. This involves identifying critical project management tasks and assessing which tool provides better support for these tasks. For instance, tasks such as project planning, resource allocation, and progress tracking are fundamental in project management. The tool that offers more intuitive, efficient, and comprehensive support for these tasks can be considered to have a higher task-technology fit, thereby potentially leading to greater user satisfaction and productivity.

## **2.6.2 Collaboration Theory**

Collaboration Theory focuses on the processes and conditions that facilitate effective teamwork and collective effort. Collaboration, defined as working together to achieve a common goal, is a fundamental aspect of project management, especially in contemporary, distributed work environments. The theory emphasizes the importance of communication, coordination, trust, and shared understanding among team members (Hansen, 2009). Effective collaboration tools are designed to enhance these elements, thereby improving overall team performance.

In the realm of project management software, both Monday.com and Smartsheet are designed to facilitate collaboration by providing features that support communication, coordination, and information sharing. Monday.com offers real-time updates, comment sections on tasks, and integration with various communication tools like Slack and Microsoft Teams, aiming to streamline communication and ensure all team members are on the same page. Smartsheet, on the other hand, provides collaborative features such as shared sheets, automated alerts, and activity logs to track changes and updates, thereby enhancing coordination and transparency.

Applying Collaboration Theory to the comparative analysis of these tools involves examining how each tool supports the critical elements of effective collaboration. For example, we can evaluate the extent to which Monday.com and Smartsheet enhance communication among team members by providing accessible and user-friendly platforms for sharing information and updates. Additionally, the tools' capabilities to facilitate coordination through task assignment, progress tracking, and automated reminders can be assessed. Trust and shared understanding are also crucial, which can be fostered through transparent processes and clear, up-to-date information available to all team members.

By leveraging Collaboration Theory, insights into how well Monday.com and Smartsheet support collaborative efforts within project team can be uncovered. This theoretical perspective allows a systematic assessment of the collaborative features of each tool and determine which one provides a more conducive environment for effective teamwork and project success.

# **CHAPTER THREE**

# **3.0 Methodology**

## **3.1 Introduction**

This section provides a detailed explanation of the methodology employed in this research. The aim of the study is to conduct a comparative analysis of monday.com and Smartsheet to evaluate its effectiveness in improving team collaboration. This section provides detailed steps on how the comparative analysis was conducted. The study utilized a quantitative approach for conducting this research to ensure comprehensive and well-rounded analysis. A key component of this approach involves the use of a case study carefully created to represent real-world project management situations. The case study technique enables researchers to systematically examine and analyze the effects of project management software (monday.com and Smartsheet), on team collaboration within a controlled yet realistic environment. The case study provides a useful guide into the practical utilization of project management software, their impact on team dynamics, and their overall effectiveness in increasing collaborative efforts, by modeling real-life project management scenarios. This case study focuses on the development of the New Student Portal (Version 2.0) which is discussed in the next section.

## **3.2 Case Study**

### **3.2.1 The Problem**

The current student portal at the university is outdated and lacking in several important aspects necessary for a modern, organised, and user-friendly digital experience. The portal's restricted functionality, difficult navigation, and absence of real-time updates have caused both students and staff members to express dissatisfaction. Consequently, the university encounters difficulties in efficiently managing course enrollments, providing personalised student services, and facilitating effective communication. These limitations hinder the entire educational experience and operational effectiveness, requiring an upgrade to resolve these problems. After careful consideration by the stakeholders, it is proposed that an upgrade should be made to the existing student portal.

### **3.2.2 The Solution: Development of New Student Portal (Version 2.0)**

The IT Project manager is tasked with the responsibility of overseeing the new student portal development project. The project seeks to resolve these issues by upgrading the current student portal to create an efficient and accessible platform. This project aims to enhance the student portal with advanced features, including real-time course registration, personalized student dashboards, and integrated communication channels. The project is divided into the following stages:

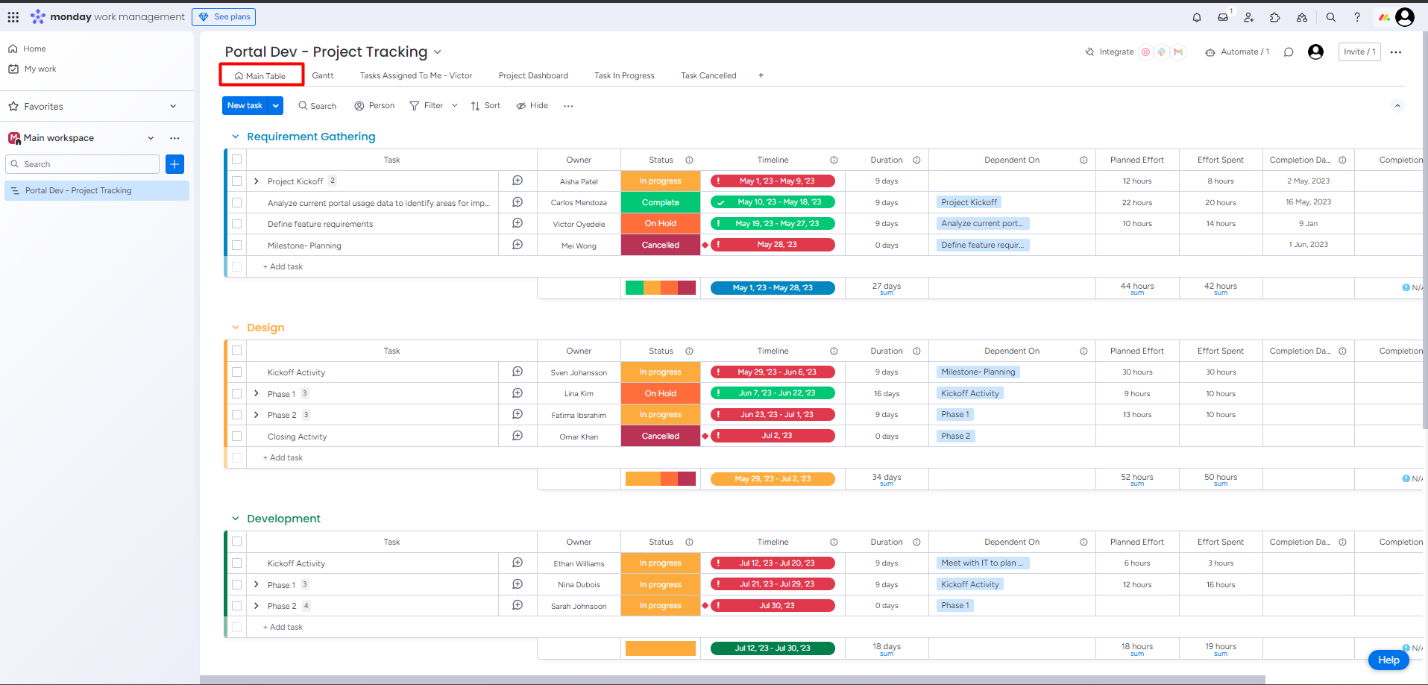
* Requirement gathering
* Design
* Development
* Testing
* Deployment

Each stage requires collaboration among key stakeholders, including IT staff, managers, faculty, and student representatives, to ensure the portal meets user needs. This research builds a prototype using monday.com and Smartsheet to plan, manage, collaborate, and track project progress. The prototype also includes a summary dashboard of the entire project. By building the prototype that tracks new student portal development and collecting and evaluating respondents feedback by means of survey, the project aims to measure these software's effectiveness in facilitating team collaboration and achieving project success.

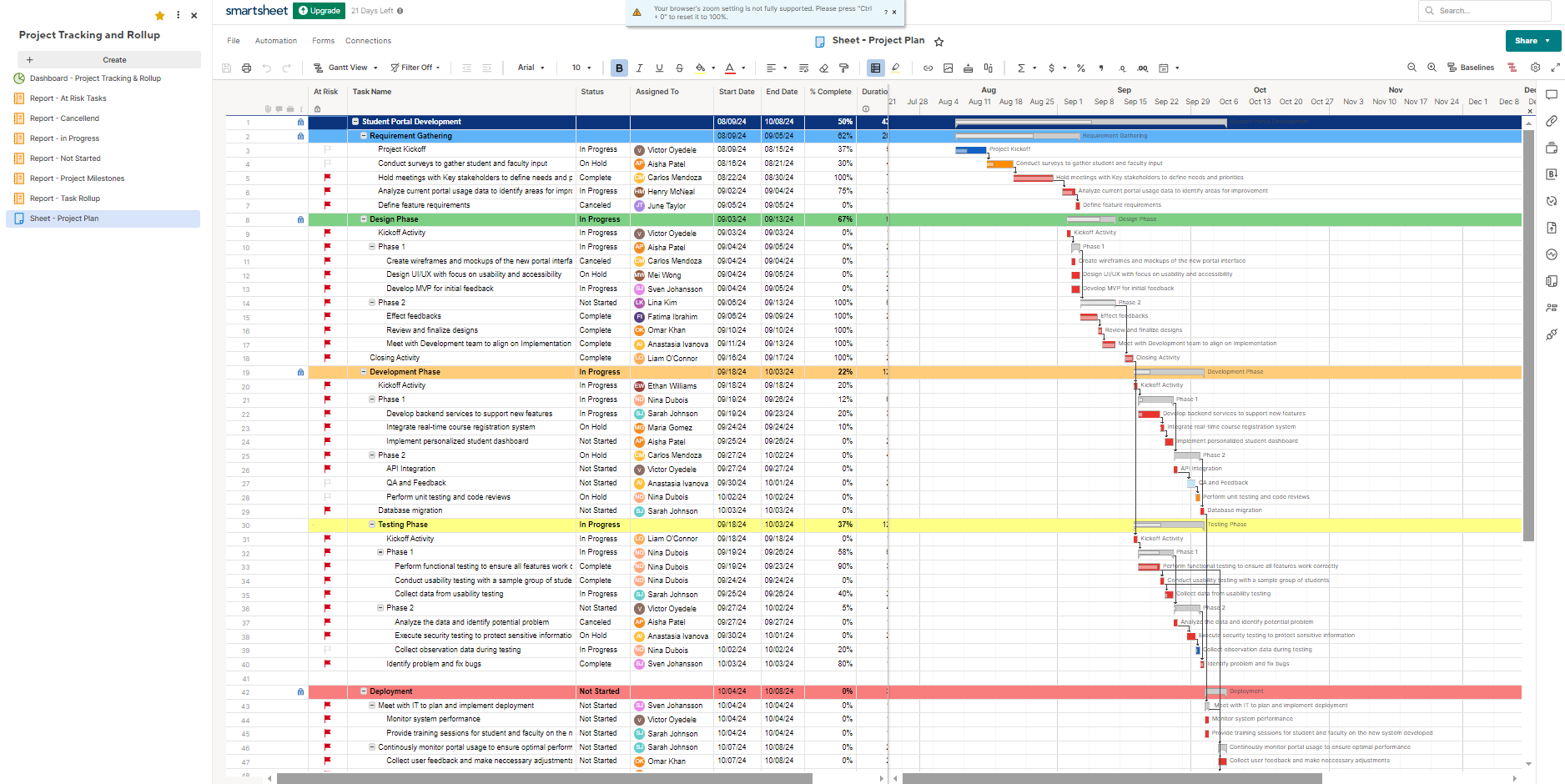
## **3.3 System Prototype Design**

A prototype system design is an early sample, model, or release of a product built to test a concept or process. It is used to evaluate and refine the design and functionality before final implementation. Prototyping helps identify potential issues and allows for user feedback, which can be incorporated to improve the final product.

The prototype was designed following the case study above. It involves building a work environment (workboard) using both monday.com and Smartsheet and exploring their features and functions in the process. The design focuses on creating a project blueprint on both software platforms to plan, manage, and assign tasks across the different teams involved in the project to deliver a new student portal that enhances the user experience and operational efficiency of the university. The design also incorporates the collaborative features available on each software. Below are Project Blueprint for monday.com and Smartsheet.



**Figure 3.1** **Monday.com Project Blueprint**



**Figure 3.2 Smartsheet Project Blueprint**

By developing this prototype system, the project aims to demonstrate how the features of monday.com and Smartsheet can be leveraged to improve project management and team collaboration. This prototype will serve as a practical example of how these tools can be used to manage complex projects effectively.

## **3.4 Testing**

The testing stage allowed adequate data to be gathered post-testing and focuses on usability testing.

The ease of use and the level of satisfaction/dissatisfaction were measured using surveys and feedback.

During the testing stage, respondents interacted with the project blueprint created on both monday.com and Smartsheet. The process is structured as follows:

* **Orientation Session**: Participants were given an overview of the project blueprint and its objectives. A brief online training session were conducted (in some cases on a one-on-one basis with respondents and with group respondents) to familiarize users with the basic features and functionalities of both software platforms.
* **Task Assignment**: Users were assigned specific tasks related to the project, such as updating the project timeline, assigning tasks to team members, uploading documents, and using communication channels. Tasks was designed to cover a wide range of features, ensuring comprehensive testing of both software platforms.
* **Usability Testing**: Users then perform various tasks on both monday.com and Smartsheet. They also rate the ease of completing these tasks on a predefined scale. After completing each task, users provided feedback on their level of satisfaction or dissatisfaction. These were measured through surveys that include quantitative ratings.
* **Observational Study**: Observers also record how users interact with the prototype, noting difficulties, errors, or confusion encountered during the process. Interaction patterns, such as the time taken to complete tasks and the number of help requests, were also documented.
* **Feedback Collection**: Surveys were administered at the end of each testing session to gather detailed feedback on users' experiences.

## **3.5 Data Collection**

Data collection provides better comparative analysis of the two software and in this study, it employed a primary method which is surveys. Survey hosted on Google form was used to gather usability information through detailed activity guide and feedback forms, administered to 40 randomly selected respondents, including IT/software Project Managers, IT Professionals, Managers, and project coordinators. Each respondent receives an activity guide alongside the survey to facilitate interaction with the prototype and to record their feedback. Concurrently, observational data such as how users interact with the prototype, errors made, confusion encountered during the process and other interaction patterns was recorded by monitoring user interactions with the prototypes. This includes tracking how users navigate the interface, assign, create, delete, or edit tasks, and utilize collaborative features. By combining survey responses with observational insights, the study comprehensively assesses software performance in project management context.

## **3.6 Feature Evaluation and Comparative Analysis**

Finally, the strengths and drawbacks of monday.com and Smartsheet regarding team collaboration was evaluated using statistical analysis method. This analysis highlight areas where one software outperforms the other. The comparison however focused more on the features and functionalities of both software, specifically the collaborative features. To analyse the collected data, Google Sheets was used. Frequency count and percentage analysis of the demographic information of the respondents was conducted to understand the sample characteristics. Descriptive statistics methods such as mean and standard deviation was used to analyse the data collected from surveys. This analysis provides a clear understanding of the central tendencies and variability within the responses. The results of this analysis were presented in tables, charts, and graphs, ensuring that the findings are displayed in a structured and clear manner. This detailed evaluation provide insights into which platform better supports team collaboration and overall project management effectiveness.