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**Introduction**

In this present day, Effective project management and collaboration are essential strategies for achieving organizational growth and development.Project management involves coordinating various components to achieve specific objectives within defined constraints. Turner (1999, cited in Turner and Müller, 2005,p51) emphasizes that project management is largely concerned with effectively overseeing individuals in order to deliver results, rather than simply focusing on managing the tasks involved. This emphasizes the significance of effective team collaboration in the project management process to guarantee the success of the project.

An essential component of project management involves setting up and managing the project's scope. Hassan and Asghar (2021,p.26840) express the importance of obtaining an exact description of the project scope in the planning phase, as it greatly impacts the outcome of the project. Moreover, Althiyabi and Qureshi (2021,p45) emphasize that the project scope is fundamental for important project planning procedures, including cost estimation, scheduling, and the development of a work breakdown structure.

Project management has gone through significant shifts over the years, expanding from its origin on managing defense and engineering projects to encompassing a wider range of tasks, including the delivery of information systems, organizational change, and the management of large-scale infrastructure projects (Sankaran *et al*., 2021, p 698). The field has progressed from small and focused project tasks to a broader view that acknowledges projects as social phenomena marked by complexity, unpredictability, and uncertainty (Moehler *et al*., 2018,p2). This change emphasizes the necessity for project management frameworks and tools that can adjust to the ever-changing nature of projects.

The rise of project management as a separate academic field has been characterized by the creation of specific tools and methodologies designed for both software and non-software applications. This reflects the growing complexity and scope of modern projects (Mishra and Mishra, 2013, cited in Akbar et al, 2023,p2). Furthermore, the development of Project Management Offices (PMOs) has undergone changes over time, as these entities have consistently adjusted to the evolving project landscape (Darling and Whitty, 2016,p283). The rising need for skilled project managers and the increasing need for project management software highlights the significant adoption of project management methodologies in diverse sectors and industries worldwide (Walker and Lloyd‐Walker, 2019,p243).

The evolution of project management research has contributed to shaping the discipline into a legitimate academic field, with a focus on understanding and improving project management practices (kotla et al, 2020,p65). This evolution has been supported by the establishment of academic journals, conferences, and associations dedicated to project management, solidifying its status as a scientific discipline (Gauthier and Ika, 2012,p7). Furthermore, the ongoing "projectification" of work has led to the integration of project management principles into diverse organizational contexts, extending the application of project management beyond traditional project settings (Maylor *et al*., 2018,p1275).

Managing a project well also means thinking about how to communicate with and involve team members. Zwikael *et al.* (2022,p3) highlight the importance of enhancing project team members' communication, especially when those involved don't have enough knowledge about project management. Getting people involved and making sure there is clear communication can make a big difference in the success of a project. Therefore, effective project management involves these two important components: team collaboration and team communication.

Team collaboration pertains to the coordinated and intentional efforts of individuals working collectively to attain a shared objective. Effective team collaboration necessitates direct and clear communication, well-defined role definitions, and a supportive environment. Mulvale *et al*. (2016,p2) highlighted the importance of formal and informal processes, team attitudes, and team structure in fostering collaboration. Similarly, Baetselier *et al*. (2021,p2563) emphasize the critical role of efficient team communication and clear role definitions in achieving successful collaboration.

Project management has evolved significantly over time from traditional practices to technological approach. Project management softwares has emerged as a crucial tool in the Technology industry facilitating the planning, implementation, monitoring, and control of software projects (Dasig *et al.*, 2014,p32). There are various project management softwares with different features, functionalities and some are better suited for one industry or use-cases than the other. Some project management tools are very popular in the software industry such as Monday.com, Wrike, Jira, Trello, Asana, Teamwork, Meister task, Basecamp, Oracle Primavera, MS Project, MS SharePoint, MS Visio.

Monday.com is a widely-used project management software that provides a comprehensive platform for teams to efficiently plan, organize, and track their work. The platform offers customers a graphical and user-friendly interface that streamlines the process of managing tasks, promoting teamwork, and facilitating communication among team members (Monday.com, 2023). The top features of Monday.com are building custom workflows across teams, monitoring, managing, and tracking workloads (Trustradius, 2021). It allows accessible communication, collaboration, and data visualization. Similarly, Smartsheet is a versatile project management tool that offers a flexible and collaborative platform for organizing and tracking various projects efficiently. It enables users to create customized workflows, assign tasks, set deadlines, and monitor progress in real-time. Smartsheet's interface allows for easy visualization of project timelines and dependencies, making it a valuable tool for teams working on complex projects. One of the features that made Smartsheet standout is the ability to export data from pre-built tables, allowing for easy data manipulation and analysis. Additionally, Smartsheet enables users to differentiate access rights and allocate resources efficiently, ensuring that sensitive information is protected and resources are utilized optimally.

The objective of this study is to conduct a comparative analysis of Monday.com and Smartsheet in order to assess their effectiveness in improving collaboration among teams and project management. This research aims to offer significant insights to organizations in selecting suitable software for their needs by analyzing specific elements such as user interface, functionality, integration capabilities, 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**

Project management and team collaboration are key factors that help an organization grow, especially modern day organization. Project management involves coordinating different components of a project and managing individuals in order to achieve set objectives and results. With the advent of technology, Project management has evolved from managing large defense and engineering projects to a more wider application and there has been a growing need to use project management softwares within the information technology industry. Project management has also gained interest in the academic field, supported by different academic journals and review papers. The increasing complexity of modern projects necessitate the need for more study to be carried out to understand and build advanced project management softwares that will meet project needs.

Despite the increasing demand in project management softwares and with more softwares being developed and used by organizations, there is a need to evaluate their effectiveness in driving team collaboration and project success. The software market has a lot of project management software and they all have unique functionalities and features. However, less research has focused on evaluating and comparing these existing softwares in the market and how they impact team collaboration and project efficiency.

Evaluating the strength and weakness of different PM tools will be valuable and provide insight for organizations to choose the right software that will improve their team collaboration and ability to manage their project. With the wide range of softwares available in the market, this research aims to conduct a comparative analysis of Monday.com and Smartsheet as these are popular PM softwares and often used by small-medium organizations. The outcome of this research will provide valuable insights into the strengths and weaknesses of these softwares, helping organizations make better decisions in choosing project management software for their next project.

**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 softwares in improving team collaboration and driving project success. This goal will be achieved through the following objectives:

1. To evaluate the features and functionalities of monday.com and Smartsheet for improving team collaboration.

2. To identify the key strengths and limitations of monday.com and Smartsheet

3. To determine the impact of monday.com and Smartsheet on team collaboration and project success

**1.4 Research Questions**

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

1. What are the core features and functionalities of monday.com and Smartsheet that improve team collaboration?

2. What are the key strengths and limitations of monday.com and Smartsheet?

3. What is the impact of monday.com and Smartsheet on team collaboration and project success?

**1.6 Significance of the Study**

This research contributes significantly to both academia and industry. In academia, the research will contribute to the existing body of knowledge by adding to the existing literature on project management software. It will also provide additional context on the effect of project management on team collaboration. In Industry, the findings from this research will help organizations in making better decisions where there is a need for them to select project management software that aligns with their collaborative needs. The study seeks to compare the impact of project management softwares such as monday.com and Smartsheet in driving Team collaboration.

**Literature Review**

#### **Definition of Project**

A project is a task intended to create or enhance a brand-new or already existing good, service or process (PMI, 2017). A project can also be defined as any short-term activity started with the intention of producing a particular product, service, or result (Nicholas and Steyn, 2020,p3). It involves a set of activities with defined start and end dates, specific objectives, and allocated resources to achieve a particular goal (Waheed, 2016 cited in Straw, 2015, p328). Projects are characterized by their temporary nature, as they have a defined beginning and end, and are distinct from ongoing operations (Jugdev and Müller, 2005,p21). 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).

The existence of a project means it has to be managed or controlled. In the context of project management, projects are viewed as strategic initiatives that require careful planning, execution, and control to deliver the desired results (Crawford and Pollack, 2007,p50). Project management involves the application of knowledge, skills, tools, and techniques to meet project requirements and ensure successful project completion (Patanakul and Shenhar, 2012,p45). Effective project management is essential for achieving project objectives, managing risks, and optimizing resources (Marcelino-Sádaba *et al*., 2016,p38).

Furthermore, projects play a crucial role in driving innovation and change within organizations (Whitty and Maylor, 2009,p308). They provide a structured approach to implementing new ideas, products, or services, and are essential for organizational growth and competitiveness (Kosaroglu and Hunt, 2009,p309). Projects also serve as a means to address specific challenges or opportunities, driving progress and improvement in various domains (Williams *et al*., 2019,p 646).

Projects are vital components of organizational operation, functioning as drivers for achieving strategic objectives, promoting innovation, and providing value to stakeholders. Effective project management practices are crucial for guaranteeing project success and optimizing the advantages obtained from project initiatives.

**Project Management - Overview**

Project management is an essential field that has a crucial impact on the effective implementation of projects in various industries and organizational contexts.

The literature on project management has emphasized the various impacts it has on attaining project success. Cicmil *et al.* (2006,p676) emphasize the significance of studying and comprehending the complex nature of projects, which entail the coordination of individuals, technologies, and resources in pursuit of shared objectives. This highlights the complex nature of project management and the need for a deep comprehension of project circumstances. Trkman (2010,p2) asserts that the support and initiation of top management are crucial determinants in the success of Business Process Management (BPM) efforts. This emphasizes the significance of leadership buy-in and commitment in driving effective project management projects. Turner *et al*. (2010,p745) stress the need of aligning project management methods with the nature of small to medium-sized firms, acknowledging the necessity for tailored approaches that correspond to the unique characteristics of these organizations. This emphasizes the significance of adapting project management methodologies to align with various organizational contexts. Eskerod and Huemann (2013,p40) also examine the importance of project stakeholder management in sustainable development, emphasizing 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.

**Project management software in modern organizations**

Project management has become increasingly significant in the Information and Technology sector. Particularly, project management software has emerged as a crucial tool in software development, facilitating the planning, implementation, monitoring, and control of software projects (Dasig *et al.*, 2014,p34). It involves overseeing software projects to ensure a clear understanding of the objectives that software developers aim to achieve (Baruah and Das, 2018,p6). The utilization of project management software depends on the extent to which professionals integrate these tools into their workflows (Ali *et al*., 2008,p7). These tools can be broadly classified into entry-level programs, which prioritize scheduling and user-friendliness, and professional systems that offer advanced functionalities and communication capabilities to manage complex projects effectively (Abasova, *et al.*, 2023,p79).

The importance of project management software has extended beyond IT companies and is now crucial for most modern organizations. By employing project management software, companies can streamline managers' efforts and reduce errors in handling multiple projects simultaneously (Nethravathi, *et al*., 2022,p452). 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).

While project management information systems (PMIS) alone do not determine the success of a project, their integration with effective management practices ensures projects are run and tracked smoothly. PMIS are crucial for supporting decision-making processes related to planning, organizing, and controlling projects (Raymond and Bergeron, 2008,p213). Organizations acquire these systems as software packages to provide managers with the necessary decision-making support (Raymond and Bergeron, 2008,p214). Enhancing software project success often involves integrating various project management practices based on established frameworks and standards, such as the PMBOK guide processes and CMMI-DEV processes (Barghoth *et al*., 2020,p88). A project management system encompasses a wide range of processes, procedures, methodologies, tools, and resources essential for effective project management (Singh and Lano, 2014,p108).

Considering all this evidence, project management software can be a multifaceted tool encompassing various processes, methodologies, and tools essential for the effective planning, implementation, and control of projects. By leveraging project management software, organizations can streamline project management processes, reduce errors, and enhance project success rates.

**Importance of project management software in modern organizations**

Recent technological developments have heightened the need for project management software. With increasing project complexities becoming the norm, efficient tools for planning, tracking, and collaboration are essential. These software solutions help teams stay organized, meet deadlines, and ensure project success. Numerous studies have emphasized the importance of project management software in enhancing project outcomes by aiding in planning, organizing, and controlling projects, as well as providing decision-making support to managers (Raymond and Bergeron, 2008,p214). Research has shown that project management software improves project professionals' perceived performance and positively impacts project results (Ali *et al.*, 2008,p.7). Additionally, the use of project management software helps automate project administration tasks, reducing human errors and enhancing overall project management efficiency (Nethravathi, *et al*., 2022,p453).

Project management software is particularly essential in large and modern organizations as it facilitates planning, monitoring, and controlling the development process to ensure projects are completed within specified timelines (Thant, 2023,p 29). Software tools for project management can be categorized into entry-level programs that focus on ease of use and professional systems with advanced functionalities for managing complex projects (Abasova, *et al.*, 2023,p80). These tools assist in scheduling, tracking project lifecycles, and providing insights for continuous project assessment and decision-making.

Generally, project management software plays a crucial role in risk management for projects by systematically identifying and controlling risks, which is vital for project success (Thom-Manuel, 2022,p13). Additionally, it contributes to improving speed, collaboration, and productivity among team members by implementing time-based practices that enhance efficiency (Blackburn *et al*., 1996,p878).

Hence, project management software offers benefits such as improved decision-making, task automation, risk management support, enhanced productivity, and team collaboration, making it a fundamental tool for project success. Among its various advantages, understanding how project management software enhances team collaboration is particularly important.

**Team Collaboration**Project management plays a crucial role in achieving project success, with excellent collaboration and communication being an essential factor in this. Team collaboration relates to the coordinated and deliberate effort of individuals working together to achieve a common goal. Efficient team collaboration necessitates direct and clear communication, well-defined role definitions, and an enabling environment. Mulvale *et al.* (2016,p3) emphasize the significance of formal and social procedures, team attitudes, and team structure in promoting collaboration. Baetselier *et al*. (2021,p2) highlight the crucial importance of efficient team communication and clear definition of roles in order to achieve successful collaboration.

Collaboration is important in various fields, including technology, medicine, and healthcare. Effective team collaboration is an essential component of project management that has a significant impact on the success of a project. Research demonstrates the significance of effective collaboration in innovative projects, emphasizing that direct communication among team members is essential for effective collaboration (Hoegl and Gemuenden, 2001,p436). Research has demonstrated that effective training can enhance team behaviors and performance in various fields, including medicine, sports, and aviation (McEwan *et al*., 2017,p2). Leveraging collaboration tools, such as instant messaging and task management software, can improve collaborative decision-making in distributed groups (Dennis *et al*., 2010,p219). Teamwork, which is implemented through effective team communication, collaboration, and cohesiveness, has an important effect on the success of capital projects (Suprapto *et al*., 2015,p1349). Establishing an appropriate environment and providing effective tools for team members to efficiently work together is essential, particularly in project situations that are unpredictable and high-risk (Edmondson and Nembhard, 2009,p125).

**Relationship between Project management and Team collaboration**

To fully understand the impact of project management on team collaboration, it is important to recognize the connection between project management and team collaboration as it evolves over time. Several works of literature have attempted to explain project management and its impact on team collaboration. Bond-Barnard *et al*. (2018,p1755) emphasize the importance of trust and collaboration in project teams, establishing a connection between these factors and the success of project management. In addition, the authors address the significance of accurate project planning and control, the application of essential skills, the interaction between the team and important stakeholders, and the organizational context in project management.

According to Kapogiannis and Sherratt (2018,p26), integrated collaborative technologies play an important part in promoting a collaborative culture in construction projects. These technologies allow stakeholders to manage project processes, improve engagement, and quickly address project mistakes. In their study, Ong and Bahar (2019,p1149) emphasize the importance of collaboration between different departments in order to achieve efficient project management. Leveraging mobile social media in inter-organizational projects, as investigated by (Zhang *et al*., 2018,p1099), synchronizes tools, tasks, and teams to improve virtual collaboration efficacy, resulting in enhanced project outcomes through collaborative efforts.

The implementation of action-centered leadership, as described by Braun *et al*. (2012,p3), fosters collaborative relationships and creates an optimal project team environment. This, in turn, improves individual learning, performance, and job satisfaction. In his study, Sudhakar (2012,p540) highlights the key factors that contribute to the success of software projects. These variables encompass effective communication, cohesive cooperation, efficient project team coordination, and rigorous quality control. Sudhakar emphasizes the pivotal role of teamwork in achieving success in project management. According to Koolwijk *et al.* (2018,p1950), cooperation within project-based supply chains improves team learning and is closely linked to team performance, emphasizing the importance of collaboration in achieving project success. Therefore, team collaboration holds great significance in project management. Therefore, developers and IT experts should incorporate additional collaboration features into software designed specifically for project management. Subsequent literature will discuss various project management tools and its utilization in facilitating team collaboration.

**Methodology**

**Introduction**

This section will provide a detailed explanation of the methodology employed in this research. The objective of the study is to conduct a comparative analysis of Monday.com and Smartsheet to evaluate its effectiveness in improving team collaboration. This section will provide detailed steps on how to conduct the comparative analysis. The study will utilize a mixed-method approach to conduct this research. A case study will be defined to simulate real-life project management situations. The case study will involve the design and implementation of monday.com and Smartsheet for the management of identical project tasks. Data will be gathered via user surveys and direct observation to assess the performance, usability, and effect of the software on collaboration within teams. The findings will provide valuable insights into the applications and advantages of each software, assisting organizations in choosing the best project management software for their specific requirements. This case study focuses on the development of New Student Portal (Version 2.0).

### **Case Study**

**The Problem**

The current student portal at the university is outdated and lacking in several important aspects necessary for a modern, organized, 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 personalized 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.

**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 involves adding new and advanced features such as real-time course registration, personalized student dashboards, and integrated communication channels. The project is organized into different stages: requirement gathering, design, development, testing, deployment, and post-deployment support. Each stage requires collaboration among key players such as IT staff, faculty, and student representatives to ensure the portal meets the needs of its users. This research will make use of project management tools like monday.com and Smartsheet, to plan, manage, and execute tasks across different teams, ultimately delivering an efficient and scalable portal that significantly enhances the user experience and operational efficiency of the university.

**System Architecture Model**

In this section, system architecture model will be designed with the use of UML (Unified Modeling Language) class diagram showing the components of the project management softwares (monday.com and smartsheet) and their interactions, including the User interface (UI) layer, Application layer, Database layer and Integration Layer etc. The UML class diagram will represent the blueprint to understanding how the platform works and how each component interacts with one another. The model hopes to detail how each softwares drives workflows, collaboration, plan and manage tasks and facilitates communication. The goal is to understand key components of each softwares and how one performs better than the other

**System Prototype Design**

The prototype will be designed following the case study above. The prototype will involve building a work environment (workboards) using both Monday.com and Smartsheet and exploring their features on functions in the process. The design will focus on building a workboard on both software to plan, manage, assign tasks across the different teams involved in the project in order to deliver a new student portal that will enhance the user experience and operational efficiency of the university. The design will also incorporate the collaborative features available on each software.

**Testing**

The testing stage is important in this study as it will allow the researcher to gather adequate data post-testing. This stage will focus on usability testing. The ease of use and the level of satisfaction/dissatisfaction will be measured using surveys and feedback. Observational data will also be collected during this process of testing by recording the user interaction with the prototype.

**Data Collection**

The process of data collection is important for this study to be able to carry out better comparative analysis of the two softwares. The data collection will involve two primary methods which are the use of surveys and also collecting observational data. The ease of use/usability data will be collected through detailed activity and survey/feedback forms. The survey will be administered to the respondents after the testing phase. A testing guide along with the survey will be administered to the respondents to allow them interact with the prototype and record their feedback. In addition, observational data will be collected during this process by recording how the users interact with the prototypes. This will include monitoring how they navigate the interface, assign task or create new task, delete or edit task and how they utilize other collaborative features. The combination of both the survey data with the observational data will be sufficient for understanding how the softwares performs in a real-world project management scenario.

**Feature Evaluation and Comparative Analysis**

In this section, the strengths and drawbacks of monday.com and Smartsheet with regard to team collaboration will be thoroughly evaluated. This analysis will include an assessment of each platform's responsiveness during concurrent usage, highlighting areas where one platform may outperform the other. The comparison will focus on the features and functionalities of both platforms, specifically the collaborative features. To analyze the collected data, Google sheet will be used. A frequency count and percentage analysis of the demographic information of the respondents will be conducted to understand the sample characteristics. Descriptive statistics methods such as mean and standard deviation will be used to analyze the data collected from surveys and observational studies. This analysis will provide a clear understanding of the central tendencies and variability within the responses. The results of this analysis will be presented in tables, charts, or graphs, ensuring that the findings are displayed in a structured and clear manner. This detailed evaluation will provide insights into which platform better supports team collaboration and overall project management effectiveness.

**Plan for Completion**

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