© INTERNATIONAL JOURNAL FOR RESEARCH PUBLICATION & SEMINAR
ISSN: 2278-6848 | Volume: 14 Issue: 03 | April - June 2023
Paper is available at http://www.jrps.in | Email : info@jrps.in
Refereed & Peer Reviewed

Special Edition
NCASIT 2023, 29th April 2023
Department of Computer Engineering,
St. Vincent Pallotti College of Engineering & Technology, Nagpur,

Project Management Tools

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Abstract— A software project management is a challenging endeavor that necessitates extensive personal, team, and organizational resources. The nature of a product item is intensely impacted by the task's fulfillment cycle. The finished product may suffer greatly from delays and low productivity. There are a plethora of products on the market as a result of the rapid development of project management tools for both software and non-software applications. The purpose of these software and tools is to automate project administration throughout the lifecycle of a single project or group of projects. The tools used in project management are briefly discussed in this article.

Keywords-component; project management, software, rapid development, automate project

INTRODUCTION

Project management is an integral part of modern business and industry as it enables organizations to effectively plan, execute, monitor and control complex projects. Project managers need access to a variety of tools and methodologies to help them successfully plan, schedule, budget, manage risk, and communicate on their projects. In response to the growing demand for project management skills and expertise, there is an increase in the development and use of project management [2]

This research paper's goal is to examine and evaluate a variety of project management tools used in industry and academia, as well asto make suggestions for how to use them effectively. The study will look at the advantages and disadvantages of various project management tools, as well as their features and functions. The research will also look into the factors that influence the selection anduse of project management tools, such as the culture of the organization, the complexity of the project, the size of the team, and the budget. [4]

The examination paper will involve five principal areas. An overviewof project management and the role of project management tools in project success will be presented in the first section. The subsequent area will survey the current writing on project the executives apparatuses, including their sorts, elements, and advantages. The third segment will depict the philosophy used to direct the exploration. [2]
The study's findings will be presented in the fourth section, which will include an in-depth look at the various project management tools and how well they work in various situations. The conclusion and recommendations for businesses wishing to successfully implement project management tools will be provided in the fifth and finalsection. [3]

In general, the purpose of this research paper is to add to the existing body of knowledge regarding the impact of project management toolson project success. It is trusted that the discoveries of this study will be valuable

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for project supervisors, project groups, and associationsas a general rule, as they try to upgrade their task executive's capacities and accomplish better undertaking results. [4]

I. PURPOSE AND OBJECTIVE

1. Seamless Collaboration: Around the globe in a click as theyare cloud-based applications.
2. Task management: Create and assign tasks, deadlines and status reports.
3. Tracking time: Track time spent on tasks and export timesheets in a project management tool.
4. Team communication: Communicate with members easily with timely responses to urgent inquiries.
5. Team Productivity and Accountability: Brings clarity aboutwhat exactly one has to do and responsible for.
6. Easy Documentation: Task specific report files as well as other project plan related files can be managed within app cloud storage or even in your personal third-party drives such as gdrive or dropbox if integrated.
7. Track Progress: The main goal is to know the status of the project progress every now and then in order to meet the deadlines. [5]

II. LITERATURE REVIEW

Project management tools are essential for research projects managing time, resources and deadlines. In recent years, the availability and variety of project management tools has increased, making it difficult to choose the right tool for a particular research project. This literature review aims to provide an overview of the project management tools available for research and their effectiveness.

1. Asana: Asana is a cloud-based project management tool that provides various features such as task tracking, project management, team collaboration, and time tracking. Asana is suitable for research projects that involve multiple stakeholders and complex workflows. Asana's user- friendly interface and integration with other tools make it a popular choice among researchers.
2. Trello: Trello is a visual-based project management tool that is ideal for research projects that involve a large amount of information. Trello uses boards and cards toorganize and prioritize tasks, making it easier to track progress and manage deadlines. Trello is also suitable for research projects that involve collaboration with external stakeholders. Basecamp:
3. Basecamp is an all-in-one project management tool that includes features such as task management, file sharing, team collaboration, and time tracking. Basecamp is suitable for research projects that require communication and coordination among team members, especially those who work remotely. Basecamp's user-friendly interface and ability to integrate with other tools make it a popular choicefor research projects.
4. Microsoft Project: Microsoft Project is a project management tool that is widely used in industries such as construction and engineering. Microsoft Project is suitable for research projects that involve a large number of tasks and complex workflows. The tool's features include task tracking, resource allocation, budget tracking, and Gantt charts.
5. Smartsheet: Smartsheet is a cloud-based project management tool that provides features such as task tracking, team collaboration, and project reporting. Smartsheet is suitable for research projects that require extensive project tracking and reporting. Smartsheet's user- friendly interface and ability to integrate with other tools make it a popular choice for research projects.

III. DETAILED ANALYSIS

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1. @Task: @Task is a web based project management system. It has an enormous number of features for project management, along with other management, collaboration and integration capabilities. The software is proprietary andcomes in two forms: professional or enterprise. The enterprise edition has more capabilities than the professional edition.
2. Central Desktop: Central Desktop is an online collaboration software that also includes project management capabilities. Its main objective is to facilitate people of non-IT sector to collaborate on projects in an excellent way. Thesoftware is proprietary and is monthly-subscription based, under 3 licenses: workgroup, enterprise or community. Enterprise edition has more capabilities than others. The community edition is tailored specifically to non-profit organizations and academic institutions.
3. Collabtive: Collabtive is a web-based, open source project management tool. It is created by the German firm Open Dynamics. It has a simple, yet useful set of features for basic project management needs.

   GanttProject: GanttProject is a cross- platform, java-based, project management software. It is open source so it is free to use and also further customizable. The software, as its name implies, makes use of Gantt charts for project management.
4. Clarizen: Clarizen is an online project management system. It has an enormous number of features for project management, along with other management, collaboration and integration capabilities.
5. Gemini Issue Tracker: Gemini is a simple tool that can be used by all team members providing issue tracking, bug tracking, defect tracking with easy project dashboards, roadmaps, change logs, customizable screens, leverageworkflow, control permissions, metadata and more. It is flexible, scalable, and entrusted by thousands of teams and organizations around the world.
6. JIRA: JIRA combines issue tracking, agile project management, customizable workflow, and a pluggable integration framework to increase the velocity of the software development team. With JIRA, delivering quality software on time is easier.
7. GoPlan: The GoPlan is an online project management and collaboration solution for individuals and teams. The Go Plan dash board provides an overview of everything that is happening across several projects.
8. GlassCubes: The major benefits of a hosted CRM solution such as glasscubes include low initial and support cost— Web based CRM eliminates the need for deploying clients and backend software—along with the elimination of complicated initial setup, configuration, data migration and integration.
9. KPlato: KPlato is a project management application. It is intended for managing moderately large projects with multiple resources. It is focused on the planning and scheduling of projects. Also KPlato is a cross-platform project management application and a member of the KOffice suite. It creates Gantt charts, which represent project schedules. KPlato is designed to manage moderately large projects with multiple resources.
10. Prowork Flow: Proworkflow is a web based management tool to manage tasks and schedules in projects. Being a webbased application, it helps project members who are situated at external locations. It easily creates tasks with allocated times and a start and end date. This information isused to create a highlight timelines that display resource allocation. Effective time tracking and additional export to PDF, CSV and XML are pluses.
11. Zoho Project: Zoho Projects is a team collaboration and project management application that allows teams to plan, track and collaborate on big projects.
12. SmartSheet: Smartsheet is a software project management tool with main features that include online project management collaboration, file sharing features, Smartsheet's intuitive spreadsheet-like applications is used broadly to track and manage diverse types of work including: team projects and task ists, customer information, sales pipelines, event schedules, and business processes.
13. Microsoft Project 2003: It is a robust project management tool with the right blend of usability, power, and flexibility all of which help to manage projects more efficiently and effectively. The main features are

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staying informed andcontrolling project work, schedules, and finances, keeping project teams aligned, and creating more productivity through integration with familiar Microsoft Office system

programs, powerful reporting, guided planning, and flexibletools.

14. Planner: Suite Planner is the GNOME project management tool. This includes features like: define the project, define general working times, list the tasks in the project, organizetasks into phases, schedule tasks, link to or attach more taskinformation, identify risks to the project, Gantt chart, task view, resource usage view, cross- platform, earned value analysis, multi currency support, integration with accounting systems, report generator, and resource allocation.
15. Microsoft Project: A tool that helps to create project planning and real-times and scheduled times for finishing projects. It assists project managers in developing plans, assigning resources to tasks, tracking progress, managing budgets and analyzing workloads.
16. OpenProj: OpenProj is an open source project management software intended as a complete desktop replacement for Microsoft Project, being able to open existing native Project files. OpenProj runs on the Java Platform, allowing it to run on a variety of different operating systems.
17. Planner Suite: Planner Suite is an open source project management software intended as a complete desktop replacement for Microsoft Project, being able to open existing native Project files. It includes features such as WBS Scheduling, Gantt Schedule, Time and progress tracking, Utilization optimization, Portfolio overview, Resource allocation, Document management, Cost estimation, Expense management, Authorization, Invoicing, Earned Value and reports.
18. Project.Net: It develops project collaboration applications using Internet technologies, and builds and deploys a collaboration engine for use by public and private web- based exchanges.
19. MicroPlanner X-Pert: It is a project management software package. X-Pert is geared to producing CPM (critical path method) and PERT (path evaluation review techniques) schedules for major, long-term projects

Software Project Management Tools Comparative Perspective

Name	Platform Based	Web Based	Online	Earned Value Analysis	Gantt Chart	Critical Path Method	Milestones	Resource Management	Time Tracking	Tasks	Dependencies	Reports	Documents	Version Control	Workspaces	User Roles	Proprietary	Open Source
@Task	√		√	√	√	√	√	√	√	√	√	√	√	√		√	√	
Central Desktop			√				√		√	√			√	√	√		√	
Collabtive		√					√		√	√		√	√			√		√
GanttProject	√				√	√	√	√	√	√	√							√
Clarizen			√		√	√	√	√	√	√	√	√	√			√	√	
Gemini	√	√	√		√		√	√	√	√	√	√	√			√	√	
JIRA		√	√				√		√	√		√	√	√		√	√	
GoPlan			√				√		√	√			√	√			√	
GlassCubes			√						√	√			√	√	√		√	
KPlato	√			√	√			√	√	√	√	√						√
Prowork Flow			√		√				√	√	√	√	√			√	√	
Zoho Project			√		√		√		√	√	√	√	√	√			√	
SmartSheet			√						√	√	√	√	√		√		√	
Microsoft Project 2003	√			√	√	√		√	√	√	√	√					√	
Planner	√				√			√	√	√	√							√
Microsoft Project	√			√	√	√		√	√	√	√	√					√	
OpenProj	√			√	√	√		√	√	√	√	√						√
Planner Suite	√			√	√				√	√	√	√					√	
Project.Net	√						√	√	√	√		√	√					√
MicroPlanner XPert	√			√	√	√	√		√	√	√						√	

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I. CONCLUSION

As you can see from the previous section, the way you manage your administrative equipment, whether open source or restrictive, helps extend your boss in a number of ways. Some are aimed at software project managers, while others are more general and applicable to almost any industry.
On the next page, we use the table in this section for a side-by-side comparison of 20 project management tools. The authors selected features to compare based on importance. The first three and last two segments of the table are not highlights, but channels that separately represent the product's activity base and endorsements.
In the comparison chart, @Task, Clarizen, and Gemini are the most popular proprietary products, with @Task supporting 12 of the 13 features listed. Clearly, the sticker price ascends as additional elements are added to a bundle. The vast majority of these products and services are accessible online to customers. The trend suggests that the online collaboration industry and project management are evolving more rapidly.When many people are working on the same project or when multiple teams are simultaneously working on different parts of the same project and coordination is important, these tools are also helpful for accessing project information [5]. Small and medium-sized businesses (SMEs) create a significant amount of software worldwide, and these project management tools are extremely useful for them [6].

GanttProject and OpenProj appear to be the most prominent open- source products in the comparison chart. The fact that these products are open-source enhances the functionality that is already available. The ability to control, customize, and enhance every aspect of a project management tool is valuable in open-source products, whereas proprietary products typically provide developers with an API (Application Programming Interface). As a result, a project manager who adds more features to this product will have a better chance of success because he or she has received a free software package that helps him with project management tasks. Thesignificant interesting point, while choosing among this large number of devices, highlights are required in the venture to be attempted.

As you can see from the comparison chart, software packages can contain an incredible number of features. Some packages or feature sets are priced differently, so every project manager should choose a tool with the best features to get the maximum expected benefit for their project. For example, a project cannot have clients. As a result, project managers probably don't need tools that provide a workspace that enables collaboration between suppliers and customers. Another consideration is that your project may not be very large. So don't expect to record a large number of highlights anyway. All these and other factors should be carefully considered by project managers before choosing the best tool for the framework of Scrum activities, XP's feedback, and communication are utilized for the management processes in Agile project management, which is currently gaining popularity. [6]

This review has some limitations in terms of inclusion of tools for distributed software project management, and tools reported in literature as specific case studies to manage specific projects. As a future work, it would be interesting to study and compare other software project management tools, their characteristics and impact on speed, productivity, and overall management in order to increase our understanding regarding how to address different challenges in project management, and also which tool will be best under specific set of requirements or circumstances.

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