

PERFORMANCE OF DIGITAL PORTALS USED FOR CONSTRUCTION MANAGEMENT PROJECTS

Yashoda J. Gorade¹, Aastha C. Jamdhade², Dr Satish S. Deshmukh³, Mr. Kiran H. Ghorpade⁴

¹P. G. Student

²P. G. Student, Civil Engineering, Trin2ity Academy of Engineering, Pune, India

³Professor

⁴Assistant Professor, Civil Engineering, Trinity Academy of Engineering, Pune, India

Received: 20/04/2026

Revised: 25/05/2026

Accepted: 27/06/2026

ABSTRACT:

Construction projects are relatively considered to be mega with multiple phases which requires a longer period to execute and successfully finalize to its desired results. In order to execute the project within the mapped and designed manner to raise the bar, requires several key elements including advanced software and latest use of technology.

With innovative technology you can assign task, monitor progress, manage documents and communicate with stakeholders. While making sure that everyone included is on schedule. Construction management applications are specially designed to pave the way in departments like task management, labor management, document management, budget timeline, better communication and collaboration within the team.

This project focuses on studying and exploring such digital portals available for construction management projects. Browsing various sites and research papers have given a valuable insight to compare different software and conduct case study using one such application known as power play.

Keywords: Digital Portals, Construction Management Projects, Latest Software, Task Management, Labor Management, Document Management, Budget Timeline, Better Communication, Collaboration, Power Play Application.

INTRODUCTION

• Construction Project Management Software

It is a digital toolkit designed to facilitate project managers and teams in planning, executing, and monitoring construction projects. It combines various functions into one platform, allowing users to manage tasks such as mapping, budgeting, allocating resource, and documentation. By centralizing these processes, construction project management software helps ensure that projects are completed within time and planned budget. The number of automated project management software applications available in the market are rising quickly, indicating a strong inclination towards digital transformation in the industry.

• Digital Portals for Construction Management Projects

As these software's have evolved and grown significantly, many construction project teams have started using them to coordinate and support their project activities. These software applications are mainly used in planning monitoring and controlling projects. The

features provided in each software's are different. The project management team must choose an appropriate software portal with necessary features best found in the market. In complex construction projects, successful project planning highly utilizes automated project planning tools.

In this study, analysis was conducted on the set of project management software applications. Further these software's were compared using a set of performance indicator. Amongst these software's a new application known as Powerplay was chosen to explain its working with the help of case study. The goal of the study is to help understand and try a suitable project management software to increase the efficiency of the future construction project outcome.

• Types of Digital Software Portals

The report compares seven widely used construction management platforms Primavera P6, Autodesk Construction Cloud, Buildertrend, FieldWire, Co Construct, Procore and Powerplay with the objective of

identifying their strengths, limitations and overall benefits. Particularly the focus is on demonstrating why Powerplay stands out as a superior solution for construction projects

- 1 Primavera P6: A powerful scheduling tool used in large scale infrastructure projects. While excellent for planning, it lacks real time collaboration and easy to use interface.
- 2 Autodesk Construction Cloud: An integrated ecosystem combining design and construction overflow. It excels in BMI integration but may take time to learn and is high in investment.
- 3 Buildertrend: Primarily designed for residential projects, it provides scheduling, budgeting, and client communication tools. However, its not favourable larger projects.
- 4 FieldWire: Focused on managing sites, task tracking, and on-site coordination. It is easy and effective but lacks in broader project management capabilities.
- 5 Co Construct: Similar to Buildertrend, it works well for custom home builders, merging project and financial management but takes a backseat in advanced analytics and flexibility.
- 6 Procore: A widely adopted platform offering project management, financial tools and collaboration. It is reliable, but often considered expensive and complex for smaller teams.
- 7 Powerplay: A comprehensive and modern construction management platform designed for ease of use, real time tracking, and efficient workforce management. It highlights productivity, simplicity, and focuses on practical application.

• Problem Statement

Compared to construction software, traditional construction management techniques heavily rely on paper checklist and scattered communication channels hence there is a significant hindrance in project efficiency, these outdated practices introduce several critical pain points that can adversely affect project outcomes.

A comprehensive user centric and technologically advanced construction management platform is essential to streamline processes, uplift collaboration and boost project outcomes.

LITERATURE REVIEW

1. “Assessing The Benefits Of Construction Management Software In Building Projects In Anambra State”, Christian Umenze, Fadumo Daniel Oluwatayomi, Emmanuel Okechukwu.

The construction field has experienced major transformation with the increasing use of software tools and technology, such as Building Information Modelling, Project Management Software, Estimating Software, Scheduling Software, and Communication and Collaboration Software. This paper aims to assess the benefits of these softwares in building project delivery in Anambra State, Nigeria, and recommend measures for more integration adoption. The study recommends that professional bodies in the construction industry should create awareness of the use of other construction management software, encourage investing in training and education for its members, have a standardized data format, and provide cloud-based solutions to the use of construction management software. The research provides a comprehensive understanding and solutions on the challenges and gaps, to analyze the issues that requires the investigation into the potential benefits of implementing construction management software.

2. “Implementing Advanced Software in Construction Project Management and Control”, Dipta Chowdhury, Prithish Gharami and Jhumana Akter.

The construction industry is one of the largest in the world, and project handling is increasingly important for its development. However, poor management and controlling practices often leads to budget overrun and delays in construction. This research looks into common practices in construction project controlling and suggests implementing a software- based project control system for construction projects in Bangladesh. The study compares the impact of software-based controlling over traditional manual systems. The most significant benefits of software-based controlling include continuous tracking of project progress, scheduling and time management, costing and cost management, resource allocation, quality inspection, representation, and documentation. It is recommended that software-based controlling should be introduced to the construction industry in Bangladesh. Implementing advanced software-based project controlling allows planners to maintain the cost of the total project and finish the construction work within time, resulting in a more reliable and detailed work plan. The study concludes that software-based controlling is a promising tool for construction controlling.

3. “Application of Autodesk software to design and manage planning projects at the conceptual stage Cite as: AIP Conference Proceedings”, Dinh Tuan Hai, Nguyen Giang Son and Tran Minh Tran.

The article analyzes the ever-growing need for socio-economic development planning in Vietnam and brings attention to issues in the planning process, such as inaccessible and unreliable documents. It recommends for the adoption of Building Information Modeling (BIM) through Autodesk software at the conceptual stage of planning projects. The study emphasizes that BIM enhances design and project management efficiency and proposes the development of a comprehensive BIM procedure for urban planning and infrastructure projects, citing its potential to revamp processes and improve document accuracy.

4. “Impact of Advanced Construction Project Management Software on Project Performance”, Egbebi Adeleke Oluwatosin Ehinola Nigeria Limited Doi.

This study outlines how advanced construction project management software impacts project performance and efficiency. It examines cost management, scheduling, and resource allocation, demonstrating that these software solutions significantly improve cost efficiency, optimize scheduling, and enhance resource management. The research methodology included a mixed-methods approach, featuring secondary data and case studies with construction firms. Results indicate that such software cut downs on delays and cost overruns, leading to overall project success. The study concludes with recommendations for construction firms to adopt these advanced tools to maximize project outcomes.

5. “Utilization of software supporting project management in middle and large project- based organizations”, an empirical study in Poland, Eryk Głodziński, Mateusz Szymborski.

The study by Ryk Głodziński and Mateusz Szymborski focuses on the use of software supporting project management in medium and large project-based organizations (PBOs) in Poland. The research focuses on middle and large PBOs operating in Poland. The findings show that PBOs typically use commonly known software, such as office suite, and IT tools integrating various areas of entities, such as ERP systems. Microsoft products are the most common software supporting project management. The research also reveals a noticeable difference in software utilization between entities from various industries, including construction and ICT, and between middle and large PBOs. The study also highlights the importance of IT tools in project management, highlighting the need for more comprehensive and effective software solutions. The study recommends the need for further research and development in the field of IT and project management for better understanding factors influencing software utilization and its differentiation in PBOs.

6. “Effective Project Management Using Mobile Application for Construction Projects”, A Review, Jeet Hemansubhai Parikh, Er. Jay Mody, Dr. J. R. Pitroda.

There is an increase in mobile device usage in construction projects since recent times, which allows more construction workers for efficient and successful use of such equipment. Devices, such as laptops and cell phones, are constantly used on building sites. For workplace usage many companies like Autodesk are working on making building data models available on mobile devices. This research acknowledges how more people are making use of mobile devices on construction sites and how it is proving to be increasingly successful for them. Mobile devices have been used for mails and text messages, images in construction field, and technology has greatly changed since then. Gadgets, such as the iPad and smartphones running on IOS and Android operating systems, have been designed to manage and process tasks on construction sites. Businesses have jumped on board to help improve employee productivity with the help of these mobile devices. One of the largest developments in project management in construction is the integration of mobile technology, with methods used in the three phases of building, design, and building focusing on tablets, smartphones, and mobile smart hotspots to help communicate and remove bottlenecks.

METHODOLOGY

1. Introduction

- The project commences with studying and browsing through research papers and Internet to gather informative data regarding construction management software’s (CMS).

- Comparison was undertaken between leading construction management software's through some performance indicators and the functionality of the selected software's.
- Amongst them Power Play Construction management application was selected.
- The working of this application was explained through a case study of a residential project.
- Lastly the advantages and limitations of the application were stated.

2. Overview Of Digital Software Applications

In order to increase budget and productivity of construction projects and improve its timely delivery, the construction industry has increasingly adopted digital solutions.

With the right software, you can:

- Coordinate onsite operations despite being off site.
- Keep tabs on multiple projects at once.
- Monitor deadlines, budget, and costs.
- Effectively collaborate with contractors and stakeholders.
- Risk mitigate and reduce costly errors.

3. Performance Based Comparative Analysis of Different features of Construction Management Software:

Analysis based on labour management, cost control, material management, time management, project tracking from start to end and also give an overall conclusion stating significance of this study n also give expected outcome of the whole comparison stating how powerplay outsmarts the rest of the software.

Software	Procore	Primavera P6	Co-Construct	Fieldwire	Builder-trend	Autodesk Construction Cloud	Powerplay
Labour management:	Strong workforce coordination but relies on integrations, not labour-first focused.	Limited labour tracking; mainly scheduling-oriented.	Basic labour allocation; suited for small teams.	Task assignment to workers; lacks deep labour analytics.	Moderate labour tracking for residential projects.	Workforce tracking via modules; not core strength.	Highly optimized for labour/vendor tracking, attendance, and productivity monitoring.
Cost Control:	Advanced cost tracking and financial tools; enterprise-grade.	Strong cost forecasting but complex to use.	Good budgeting tools for small builders.	Limited cost features.	Strong budgeting and financial tracking.	Cost modules available but expensive and modular.	Highly Balanced cost control with simplicity and affordability.
Material Management:	Strong procurement and inventory tools.	Weak in material tracking.	Basic material tracking for small projects.	Minimal material management.	Moderate tracking tied to budgeting.	Integrated with BIM for material planning.	Practical site-level material tracking with vendor linkage.

Time Management (Scheduling):	Strong scheduling tools with integrations.	Industry leader in scheduling and planning.	Simple scheduling tools.	Task-based scheduling.	Good residential scheduling tools.	Integrated scheduling with BIM workflows.	Simple and execution-focused scheduling.
Project Tracking (Start to End Lifecycle):	Full lifecycle management (preconstruction to closeout).	Strong planning phase, weaker execution tracking.	Good for residential lifecycle management.	Excellent for field execution tracking only.	End-to-end for small projects.	End-to-end with BIM integration.	Covers full lifecycle with emphasis on execution and reporting.

4. Final Insight:

While enterprise tools dominate in features, Powerplay nails balance of usability, affordability, and execution efficiency, making it particularly effective for fast-growing construction firms and on-ground project management.

- Powerplay outshines others due to its labour-centric design, especially for Indian construction workflows.
- While Procore leads in depth, Powerplay provides better cost-to-value ratio.
- Autodesk excels in design-stage material planning; Powerplay excels in tracking on-site execution.
- Primavera P6 dominates in complex scheduling, but Powerplay is user friendly for field teams.
- Procore and Autodesk lead in enterprise lifecycle coverage, while Powerplay ensures practical usability across all stages.

5. Conclusion: Why Powerplay Outsmarts Others

Powerplay stands out because it addresses the core pain points of construction projects:

1 Labour-first approach:

Unlike others, it prioritizes workforce and vendor tracking.

2 Ease of use:

Avoids complexity seen in tools like Procore and Primavera.

3 Cost efficiency:

Offers competitive pricing without sacrificing functionality.

4 Field-centric design:

Built for engineers and site teams, not just managers.

5 All-in-one practicality:

Covers project tracking, cost, labor, and materials in a unified system.

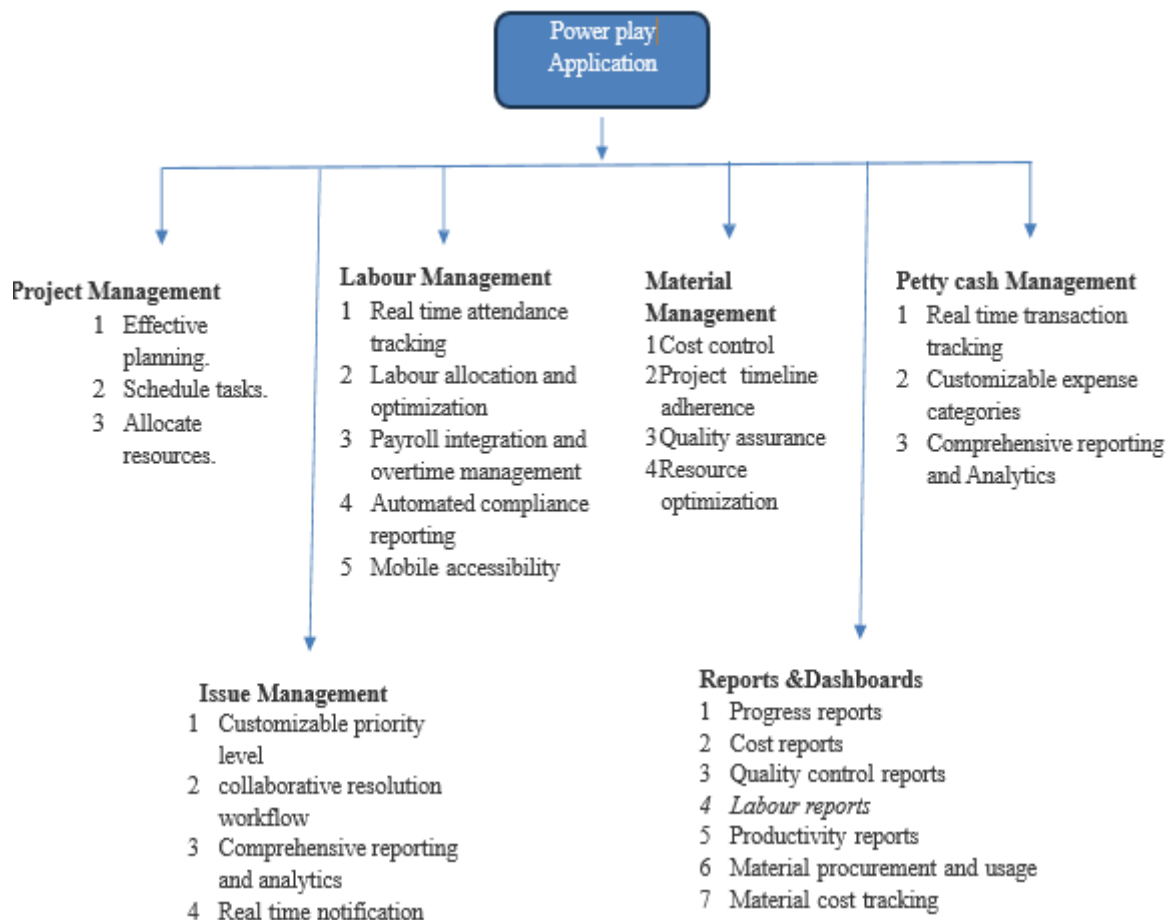
INTRODUCTION TO POWERPLAY APPLICATION:

1. About Powerplay Construction Project Management Software Application

Powerplay is a Bangalore based startup that has provided an application for construction companies to manage projects. The co-founders of Powerplay Application is Iesh Dixit and Shubham Goyal.

2. Key Features Of Powerplay Application Are:

Fig No 2b: Flow Chart of Key Features of Powerplay Application



Key Features Of Powerplay Application Are:

1. Dashboards

Real Time Project Monitoring: The interactive dashboard displays an overview of the project progress till date, facilitating current insights of tasks, bottlenecks and material management to quickly finalize the best strategy to tackle any issues.

2. Project Management

Managers can create Gantt charts or timeline views to allocate resources efficiently in scheduling project tasks, defining deadlines and milestones. Project management software may cut down operational costs of project by about 7 %.

3. Labour Management

This feature streamlines the management of labor and resources in construction projects. It is used in tracking worker attendance, manage schedules, allocate tasks, and optimize labor costs, ensuring efficient utilization and compliance with labor regulations. This software improves communication and coordination among team members, leading to enhanced productivity and project outcomes.

4. Material Management

One of the most crucial feature of any construction project is material management which highly impacts its success and efficiency altogether. Smart and supervised material management insures availability of materials at right time, quantities and cost.

5. Petty Cash Management

This aspect facilitates in acquiring quick efficiency, collaboration and control necessary to propel construction project to new heights by controlling untrack expenses, over spending and collaboration gaps within the account team.

6. Issue Management

Issue management is an essential tool that takes care of tracking, managing and resolving issues that comes during a project. It allows project managers, contractors and other related stakeholders to record issues, allot responsibilities, set time limits and monitor real time progress.

7. Reports

Daily Project Reports (DPR): This feature quickly generates daily, weekly or fortnightly progress reports that includes all details regarding material usage, worker attendance and task status. These reports can be easily customized, downloaded in pdf format or shared via links to keep clients and stakeholders informed.

8. Modules in Powerplay Application are:

POWERPLAY PROCESS FLOW

Description Steps

A. Material Module

POWERPLAY PROCESS FLOW	
Description	Steps
A. Material Module	
Indent Material	
	Open Powerplay
	Click on your project
	Click on Material Tab
	Click on "+ New indent"
	Choose "Create a material indent"
	Choose your required material from the list and continue
	Enter the required quantity
	Enter the assigned team member, expected delivery date, and remarks
	Click on "Create Indent"
	Wait for indent approval from the officials
GRN (Goods received note)	
	Open Powerplay
	Click on your project
	Click on Material Tab
	Choose "Site GRN"
	Click on "+ New GRN"
	Click on "Select materials through inventory"
	Choose the material from the list
	Enter delivered quantity
	Select the vendor, received by the team member, received date, invoice number, invoice amount, delivery challan number and remarks
	Click on "Create GRN"

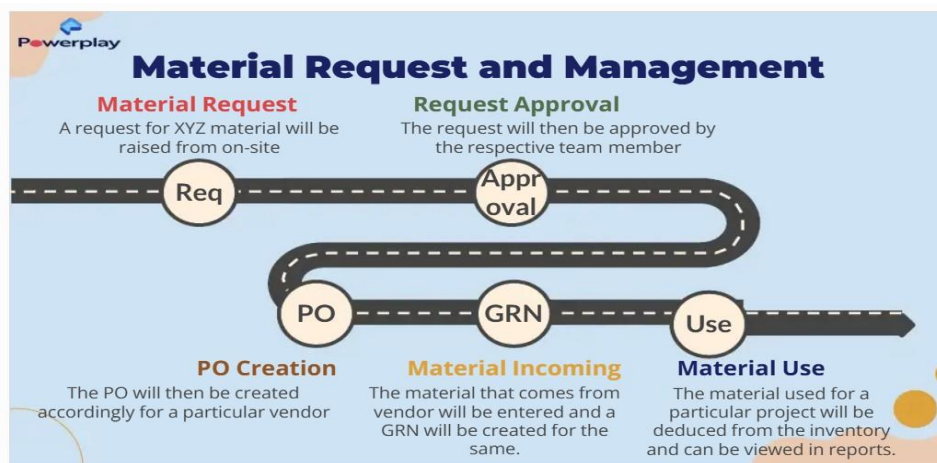


Fig No 4a: Material Module

B. Task Module

B. Task Module	
Task scheduling	
	Open Powerplay
	Click on your project
	Click on "Tasks -> Plan View"
	Click on "Upload Plan"
	Click on either "Add to existing plan" or "Replace Plan" as per requirement
	Drop your prepared schedule file in the dropbox (Either MS Project file or MS excel file)
	Your schedule is displayed
Work order	
	Open Powerplay
	Click on "Work Order"
	Click on "+ Create work order"
	Select project
	Select Vendor
	Add Vendor Payment term
	Select Billing details
	Either "Select tasks from existing plan" or "Add new task"
	Enter the description
	Enter total quantity, unit, rate
	Enter any charges or deduction as per rules
	Select any additional terms and conditions if required
	Click on "Create Work Order"



Fig No 4b: Task Module

1. Customized Key Add-on Features for Project

• Labor & Vendor Tracking:

The labor and vendor payables feature provides a centralized platform for tracking attendance, calculating wages, managing schedules, and organizing vendor invoices.

• Work Order:

Work order serves as a tracking tool, helping project managers to track progress, time limit and dependencies, making sure the projects stay on track.

• Bill Of Quantities (BOQ):

Bill of Quantities (BOQ) option serves as a key function to enable exact cost estimation, provide a basis for tendering, and track project progress throughout the completion of construction cycle.

• Sub-Contractor Option:

The subcontract feature helps to manage subcontractors and their work within a project. It includes tracking their progress, manage costs, and ensuring project compliance.

CASE STUDY

Name Of Project: Treeth Assisted Living
Address Of Project: Treeth Assisted Living, Vidya Valley School Rd. Sus Gaon, Pune -21
Purpose Of Project: Part Of Amenity Space For Senior Citizen Accommodation
Project Details: Total Area Of Project – 101100 Sq.Ft
Slab Area – 109 Sq.Ft
12floors 19flats Per Floor
Flat Types – 1rk Flats, 1bhk Flats.
Contracting Firm : Shree Sairaj Buildcon
Work Assigned To Firm : Rcc Structure, Block Work, Gypsum Work, & Plastering Work.
Guided By: Operational Manager Mr Devandra Shinde
Project Progress Till Now: 96 % Till Date

Teerth Assisted Living



Fig No 5a: - Project Profile

1 Key features of Case study in Powerplay Application are:

a. Dashboard

Powerplay provides project stakeholders with real-time visibility into project progress, status, and performance so they can make informed decisions. With customizable analytical tools, dashboards and reports Powerplay enables project managers to monitor key performance indicators, track project milestones, and identify areas for improvement.

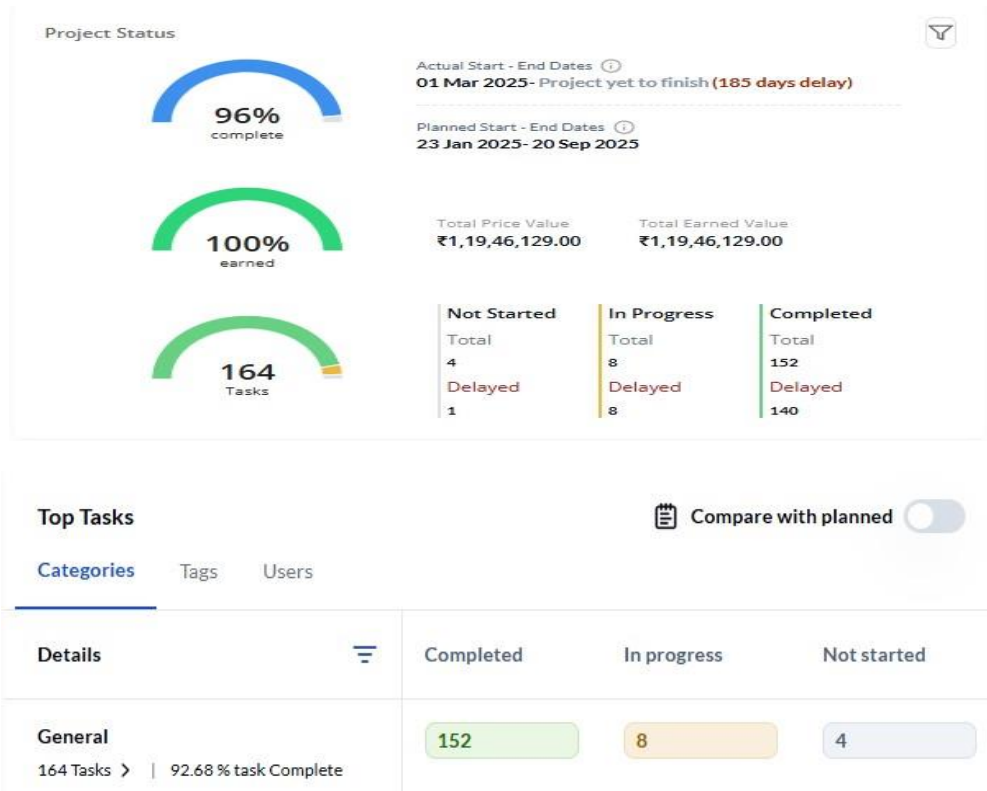


Fig No 6a: - Dashboard

b. Task view

The task feature helps to monitor the project daily according to pre schedule task. Any delays can be noticed as the field team updates the progress, hence bottlenecks could be traced (delays due to some issues on site) and resolved on time.

c. Past/ Upcomming / Current Task view (Fig 6c)

The task feature can be characterized as past, current and upcoming tasks which enables details of the schedule dates, work category, status (completed, delayed, start later), the time period and progress according to the work assigned in the project plan.

d. Material

The material feature allows tracking of the deliverables and payables and provides updates on critically low stock materials. Thus users can know where your resources are been used.

e. Indent

Indent is an essential first step to obtain material requirements on any construction or manufacturing unit. Often the site teams, name and label materials arbitrarily according to their own understanding, while suppliers use their own terminology. By creating an Indent, desired material order can be specified and categorized for the buyer to clearly understand what is required to prevent procuring incorrect materials which could be hard to credit from the supplier and result in a loss.

f. Indent Create

To material order on field is processed by site worker with the creation of an indent for manager's approval which comprises of material selection, quantity needed, expected date of delivery and assigned user, which on approved generates a purchase request.

g. Purchase Order

A purchase order is a formal document issued by a project manager or a construction company to a supplier or vendor, specifying their requirements such as types and quantities of materials, equipment, or services needed for a construction project.

This typically includes details like the names of the buying party, selling party, the indent Id, PO Id, dates, status and value (total and delivered).

It forms the base for tracking any order and is crucial in procurement process and managing project.

h. Purchase Order Create

This includes details like the vendor's name, payment schedule, delivery date and location for delivery, billing details, price per unit, quantity, discount, total amount, terms and conditions and any vendor's remark. Upon approval of PO, the material and challan copy send by the vendor is issued, upon which a GRN (good return note) and invoice is generated and passed to accounts section for payment.

i. Good Received Notes (GRNs):

Powerplay enables the creation of GRNs upon receiving materials. These notes are important for ascertaining if the delivered goods match the purchase orders in quantity and quality.

DISCUSSION AND RESULT:

1. Table Summary & Cost Comparison

- The table provides a detailed cost comparison for Reinforced Cement Concrete (RCC) work at the Teerth Assisted Living project, specifically contrasting Projected Quantities (traditional estimates) with Actual Quantities as recorded by the Powerplay application.
- The table takes into account six key categories: binding wire, Ready-Mix Concrete (RMC), cement, steel, gypsum, and RCC labor.

2. TEERTH ASSISTED LIVING (PROJECTED VS ACTUAL COSUMPTION FOR RCC)

TEERTH ASSISTED LIVING (PROJECTED VS ACTUAL COSUMPTION FOR RCC)								
N O	DESCRIPTI ON	COSUMP - TION FACTOR	UNIT	AREA	UNI T	PROJECTED QUANTITY	ACTUAL QUANTITY AS PER POWERPLAY RECORDS	DIFFERENC E
1	BINDING WIRE	0.04	KG/SQFT	1,06,743.00	SQF T	4,269.72	3874	- 395.72
2	RMC	0.032	CUM/SQF T	1,06,743.00	SQF T	3,415.78	3483.75	67.97
3	CEMENT	0.11	BAGS/SQF T	1,06,743.00	SQF T	11,741.73	11177	-564.73
4	STEEL	3.2	KG/SQFT	1,06,743.00	SQF T	3,41,577.60	3,21,980.00	-19,597.60
5	GYPSUM	0.085	BAGS/SQF T	1,06,743.00	SQF T	9,073.16	8,733.00	-340.16
6	RCC LABOUR	195	RS/SQFT	1,06,743.00	SQF T	2,08,14,885.00	2,32,15,000.00	24,00,115.00

3 HOW POWERPLAY OUTPERFORMS TRADITIONAL METHODS:

Material / Item	Difference (Projected vs. Powerplay)	Financial Impact
Binding Wire	-395.72 kg	Savings through reduced usage
Cement	-564.73 bags	Savings through reduced usage
Steel	-19,597.60 kg	Major material savings
Gypsum	-340.16 bags	Savings through reduced usage
RMC	+67.97 cum	Marginal increase in consumption
RCC Labor	+24,00,115.00 RS	Significant increase over projection

- The main "upper hand" of using a construction management app like Powerplay over traditional manual tracking (spreadsheets/WhatsApp) is real-time visibility. User reviews highlight that traditional techniques often lead to communication gaps that exhaust both human and financial resources.
- Precision in Tracking: While traditional methods depend on upfront estimates that are troublesome to alter, Powerplay provides daily field updates and actual consumption data.
- Accountability: Actual consumption based site tracking with powerplay accurately points out where a project is running over or under the budgeted resources (like the observed above for major saving of steel) fostering an environment of clarity.
- Reduced Manual Errors: Less reliance on clunky excel sheets and hectic WhatsApp chat group reports.

4 KEY TAKEAWAYS FROM THE COMPARISON:

- **Material Optimization:** The application can track material consumption, which revealed that actual consumption for most materials (steel, cement, wire) was significantly less than the forecasting value. This resulted to be beneficial for the future forecasting and stock management.
- **Labor Cost Realism:** The huge variance seen in RCC Labor (24 lakh increase) suggests that traditional projection techniques may severely undervalue cost of labor or that site inefficiencies were identified in real-time that manual technique might have missed until the project was over.
- **Proactive Risk Mitigation:** According to clients Powerplay has relatively saved up to 3% on whole project costs by spotting the "leaks" (discrepancies) daily rather than identifying them after the budget is already blown.
- Another take-away from the usage of powerplay app is that if a certain budget is fed to this app at the beginning of any project then it will not accept any over expenditure exceeding that fed cost value, saving expenses of the project and helping to keep the project on track and in budget as planned.

5 Overview Of Project:

The powerplay application aided the construction project primarily by digitalizing and streamlining critical management aspects. This enhanced project tracking, cost management and team communication, thereby mitigating risks associated with delays and lack of visibility.

- **Cost Saving:**

The feature for managing materials and attendance helped reduce overall project costs. Organized records for labor and vendor attendance and material expenses now provide clear visibility into payables and receivables.

- **Project Visibility:**

The entire team gained real-time visibility into project progress across various stages, saving crucial working days and eliminating project delays.

- **Cross-Communication:**

The mobile accessibility of the application enabled project managers to stay connected with field teams, ensuring work was performed on schedule and thus improving project delivery.

Project Profit:

The total project cost value was 11,25,00,000/- (11Cr, 25lakh) out of which the total profit earned was 90,000/- (90 lakh) to 1,00,00,000/- (1Cr) and according to contracting firm powerplay application has approximately contributed 1% to 3 % of the total profit earned ie 90,000/- (90k) to 1,80,000/- (1lakh80k) approximately, towards the completion of project, by managing above mentioned factors.

Powerplay application has proven to be a valuable tool for construction project management, providing significant benefits and improvements. As construction projects become more complex, the adoption of innovative technologies and software like powerplay will be essential for companies to remain competitive and achieve project success.

SUMMARY

How choosing Powerplay construction software was helpful in the project

1. The Challenge:

The Contracting firm aims to deliver added-value services to its clients. With substantial growth and scaling, pen and paper systems became inefficient. Tracking project progress and determining vendor payment schedules became time-consuming and using WhatsApp or adding staff proved ineffective, resulting in loss of time and money.

2. The Solution:

With Powerplay; the Director, project managers, and site engineers could manage all project-related data through a mobile application. Powerplay acts as a digital assistant, allowing team members to record attendance, track inventory and monitor task progress. The web software and mobile application facilitated collaboration and communication between site and office team.

CONCLUSION

The Study highlights the benefits of Powerplay, including:

- Centralized project data management
- Automated workflows and notifications
- Real time project insights and reporting
- Enhanced stakeholder engagement

1. Recommendations

- Construction companies should adopt powerplay to enhance project management efficiency.
- Project managers should receive thorough training on powerplays features and best practices
- Developers should focus on user feedback and continuously improve powerplays functionality and integration capabilities.

2. Future research directions

- The study should be extended to investigate powerplay's effectiveness in specific construction sectors (e.g. residential, infrastructure, commercial)
- A comparison of powerplay with other construction project management tools should be conducted.
- The impact of powerplay on sustainability and environmental factors within the construction projects should be examined.

REFERENCES

1. Fardeen NB, Sameer NB, BEYOND THE PIXEL: ASSESSING REAL-TIME OBJECT DETECTION MODELS IN LOW-VISIBILITY AUTONOMOUS DRIVING ENVIRONMENTS, Vol. 53 No. 4 (2025): October-December 2025, Power System Protection and Control, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/371>
2. Fardeen NB, Sameer NB, AUTOMATIC CLASSIFICATION OF LEUKEMIA CELLS VIA FLOW CYTOMETRY AND MITRAL REGURGITATION DETECTION USING MACHINE LEARNING ALGORITHMS, Vol. 49 No. 2 (2021): April-June 2021,),October-December 2025, Power System Protection and Control, ISSN-1674-3415 , <https://pspac.info/index.php/dlbh/article/view/361>
3. Authors, _Mehedi Hasan, Deboshree Rani Mukta, Abdullah Mohammad Sarjish, Stefano Enzo, Muhammad Nurunnabi Siddiquee, Mohammad Mozahar Hossain, Victoria Padilla, Mohammed Jasim Uddin, Wasikur Rahman_ " *Combined effects of ternary oxides (Mg-Cu-O) and jute stick derived activated carbon for hydrogen storage in MgH₂* " DOI: <https://doi.org/10.1007/s11356-025-36394-4> , Apr-2025
4. Authors: _Md. Wasikur Rahman Md. Sabbir Ahmed, Selim Reja, Sk Md Ali Zaker Shawon, Farhana Nazmin, Abdullah Mohammad Sarjish, Yousuf Ali, M. Azizur R. Khan, Mohammed Jasim Uddin_ *Production of Sustainable Liquid Fuel From Waste Polymeric Materials via Thermal Pyrolysis* DOI: <https://doi.org/10.1155/er/1449087> ,
5. Sarjish, Abdullah Mohammad, et al. " *Nano Polymers for Clean Energy Solutions* ." Nanostructured Polymers: Synthesis and Performance. Singapore: Springer Nature Singapore, 2026. 461-495. https://doi.org/10.1007/978-981-95-3581-1_18 , Feb-2026
6. Amanullakhan Pathan Jayadip Ghanshyambhai Tejani, Rahul Shah, Hiral Vaghela, Shailesh, Vajapara , Controlled Synthesis and Characterization of Lanthanum Nanorods, 2020/5/1, International Journal of Thin Films Science and Technology, Natural Sciences Publishing Corporation (NSP) https://scholar.google.com/citations?view_op=view_citation&hl=en&user=efbNMkwAAAAJ&citation_for_view=efbNMkwAAAAJ:M3NEmzRMikIC
7. Stereoselective synthesis of the C3-C15 fragment of callispongolide; Ramidi Gopal Reddy, Jhillu S. Yadav and Debendra K. Mohapatra. (Tetrahedron Letters. 2018, 59, 3579-3582). <https://doi.org/10.1016/j.tetlet.2018.08.041>, <https://www.sciencedirect.com/science/article/pii/S0040403918310426>

8. Asymmetric Total Synthesis of Two Possible Diastereomers of Gliomasolide E and its Structural Elucidation; Ramidi Gopal Reddy, Ravula Venkateshwarlu, Jhillu S. Yadav and Debendra K. Mohapatra. (J. Org. Chem. 2017, 82(2), 1053-1063). <https://doi.org/10.1021/acs.joc.6b02611>, <https://pubs.acs.org/doi/abs/10.1021/acs.joc.6b02611>
9. Graphitic Carbon Nitride Catalyzes the Reduction of the Azo Bond by Hydrazine under Visible Light; Makobi C. Okolie, Glory G. Ollordaa, Gopal R. Ramidi, Xin Yan, Yufeng Quan, Qingsheng Wang and Yingchun Li. (Nanomaterials 2024, 14(17), 1402), <https://doi.org/10.3390/nano14171402>, <https://www.mdpi.com/2079-4991/14/17/1402>
10. Lakshmi Rahul Reddy Mareddy, 2026, IJCNIS, <https://www.ijcnis.org/index.php/ijcnis/article/view/8735>
11. Lakshmi Rahul Reddy Mareddy, 2026, ICAA, <https://eudoxuspress.com/index.php/pub/article/view/4780/3569>
12. Lakshmi Rahul Reddy Mareddy, 2026, IJCMi , <https://www.ijcmi.in/index.php/ijcmi/article/view/70>
13. Rangavinay Teja Royal Jagga , 2026, <https://ieeexplore.ieee.org/document/11448495>
14. Rangavinay Teja Royal Jagga , 2026, <https://ieeexplore.ieee.org/document/11448514>
15. Rangavinay Teja Royal Jagga , 2026, <https://ieeexplore.ieee.org/document/11448337>
16. Rangavinay Teja Royal Jagga , 2026, <https://ieeexplore.ieee.org/document/11497560>
17. Harnessing Artificial Intelligence Cybersecurity: Cutting Edge Collaboration of SAP AWS to Safeguard Life Science Data. 2026 <https://doi.org/10.1109/aiei69164.2026.11497833>
18. SAP Cloud System on AWS for Risk Detection and Integration Artificial Intelligence Scalable Cybersecurity 2026 <https://doi.org/10.1109/aiei69164.2026.11497435>
19. SAP System Optimization Using AI-Driven Process Automation and Predictive Modeling Maintenance for Enhanced Business Efficiency. 2025 <https://doi.org/10.1109/computingcon64838.2025.11376613>
20. <https://ieeexplore.ieee.org/abstract/document/11376613>
21. <https://ieeexplore.ieee.org/abstract/document/11497833>
22. <https://ieeexplore.ieee.org/abstract/document/11497435>
23. Kaleshwar Aryasomayajula, PREVENTING BIAS IN AI-BASED DECISION-MAKING: ANALYZING TECHNIQUES TO REMOVE UNFAIR PREJUDICE IN ALGORITHMIC OUTCOMES, Vol. 50 No. 2 (2022): April-June 2022, Power System Protection and Control, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/294>
24. Kaleshwar Aryasomayajula, MODERN DEVELOPMENT PRACTICES: INVESTIGATIONS INTO SERVERLESS COMPUTING, LOW-CODE/NO-CODE PLATFORMS, AND DEVELOPER PRODUCTIVITY IN REMOTE ENVIRONMENTS, Vol. 50 No. 4 (2022): October-December 2022, Power System Protection and Control, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/364>
25. Kaleshwar Aryasomayajula, Micro services: “A Comparative Analysis of Monolithic vs. Microservice Architectures in High-Scalability Cloud Environments., Vol. 51 No. 2 (2023): April-June 2023 , Power System Protection and Control, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/374>
26. Alam, M. Z., Rahman, R., Sozib, H. M., Ahmed, H., Hossain, A., Sabeena, A. A., Tasnim, A. F., Ahmed, F., Sarkar, M. I., & Erdei, T. I. (2026). Enhancing Thyroid Disease Diagnosis with Machine Learning and Counterfactual Explainable AI. IEEE Access, 1–1. <https://doi.org/10.1109/access.2026.3663497>
27. Yeasmin, S., Semi, M. M. A., Rony, M. K. K., Das, S., Sabeena, A. A., Rahman, R., Biswas, B., Ahmed, F., & Hossain, A. (2025). Artificial Intelligence for Mental Health Monitoring: A

- Solution for Digital Behavioral Health Care and Education—An Umbrella Review. *Health Science Reports*, 9(1), e71703. <https://doi.org/10.1002/hsr2.71703>
28. Hasan, S., Rahman, K. A., Ahmed, F., & Hossain, A. (2026). An integrated AI-driven framework for maternal resource intelligence shortages across U.S. hospitals. *Integrative Biomedical Research*, 10(1), 1–8. <https://doi.org/10.25163/biomedical.10110694>
 29. Riipa, M. B., Ahmed, F., Rony, M. K. K., Hossain, A., Islam, A., Utsho, M. R., Kamal, M. B., Sharmin, S., & Tasnim, A. F. (2026). The role of artificial intelligence in predicting cardiovascular outcomes: a systematic review and meta-analysis. *Biostatistics & Epidemiology*, 10(1). <https://doi.org/10.1080/24709360.2026.2670804>
 30. Semi, M. M. A., Das, S., Utsho, M. R., Hossain, A., Kamal, M. B., Sizan, A. A., Tasnim, A. F., Yeasmin, S., & Parvin, M. R. (2026). Artificial Intelligence in Public Health Education: A Scoping Review of workforce competency development. *Health Science Reports*, 9(3). <https://doi.org/10.1002/hsr2.72066>
 31. Ahmed, F., Hasan, S., Hossain, A., & Rahman, K. A. (2026). Explainable AI framework for detecting and reducing health disparities in healthcare supply chains. *Journal of AI, ML and DL*, 2(1), 1–8. <https://doi.org/10.25163/ai.2110685>
 32. Godavari Modalavalasa, "SCALABLE CLOUD SOLUTIONS THROUGH ARTIFICIAL INTELLIGENCE GOVERNANCE: APPLICATIONS IN HEALTHCARE AND FINANCIAL SYSTEMS", Vol. 54 No. 1 (2026): January-March 2026, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/219>, DOI: <https://doi.org/10.46121/pspc.54.1.25>
 33. Godavari Modalavalasa, AUTONOMOUS DATA ENGINEERING PIPELINES: A POLICY-DRIVEN ARCHITECTURE FOR SECURE AND SCALABLE CLOUD-NATIVE ANALYTICS, Vol. 53 No. 4 (2025): October-December 2025, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/181>, DOI: <https://doi.org/10.46121/pspc.53.4.25>
 34. Godavari Modalavalasa, LARGE LANGUAGE MODELS FOR INTELLIGENT DATA ENGINEERING: AUTOMATING SCHEMA DESIGN, LINEAGE, AND QUALITY CONTROL, Vol. 50 No. 2 (2022): April-June 2022, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/183>, DOI: <https://doi.org/10.46121/pspc.50.2.4>
 35. Godavari Modalavalasa, FEDERATED LEARNING FOR ENTERPRISE CLOUD DATA ENGINEERING: ARCHITECTURE, SECURITY, AND GOVERNANCE CHALLENGES, Vol. 51 No. 2 (2023): April-June 2023, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/184>, DOI: <https://doi.org/10.46121/pspc.51.2.5>
 36. Godavari Modalavalasa, AI-DRIVEN DATA GOVERNANCE: INTELLIGENT METADATA, LINEAGE, AND COMPLIANCE AUTOMATION IN CLOUD DATA PLATFORMS, Archives / Vol. 52 No. 1 (2024): January-March 2024 /, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/182>, DOI: <https://doi.org/10.46121/pspc.52.1.3>
 37. Hima Bindu Lekkala, VishnuVardhan Bandari, AUTONOMOUS WORKFLOW OPTIMIZATION USING MULTI AGENT AI SYSTEMS AI AGENTS MANAGE STATIONS, WIP, AND TASK HANDOFFS, Vol. 54 No. 2 (2026): April-June 2026, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/306>, DOI: <https://doi.org/10.46121/pspc.54.2.08>

38. Lekkala, H. B., & Bandari, V. V. (2026). Autonomous workflow optimization using multi-agent AI systems: AI agents manage stations, WIP, and task handoffs. *Power System Protection and Control*, 54(2), 95–101. <http://pspac.info/index.php/dlbh/article/view/306>
39. Bandari, V. V., & Lekkala, H. B. (2024). Physics-informed reinforcement learning for real-time control of complex manufacturing processes. *Power System Protection and Control*, 52(2), 164–170. <https://pspac.info/index.php/dlbh/article/view/343>
40. Lekkala, H. B., & Bandari, V. V. (2025). AI-based energy-aware scheduling and process optimization in engineer-to-order smart manufacturing systems. *Power System Protection and Control*, 53(1), 30–36. <http://pspac.info/index.php/dlbh/article/view/341>
41. Bandari, V. V., & Lekkala, H. B. (2026). AI-driven digital thread framework for end-to-end lifecycle optimization in ETO manufacturing systems. *Power System Protection and Control*, 54(2), 318–325. <http://pspac.info/index.php/dlbh/article/view/340>
42. Lekkala, H. B., & Bandari, V. V. (2026). Deep learning for weld defect detection using CNN or vision transformers fusion detection. *Power System Protection and Control*, 54(2), 151–158. <https://pspac.info/index.php/dlbh/article/view/314>
43. Bandari, V. V., & Lekkala, H. B. (2024). AI-based operator behavior monitoring and cost optimization using digital traceability in manufacturing systems. *Power System Protection and Control*, 52(1), 38–45. <https://pspac.info/index.php/dlbh/article/view/342>
44. Shreyas Jayaprakash, MACHINE LEARNING-DRIVEN VERIFICATION: USING ML TO OPTIMIZE COVERAGE ANALYSIS, PREDICT SIMULATION RUNTIMES, AND AUTO-GENERATE TESTBENCHES, Vol. 54 No. 2 (2026): April-June 2026, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/391>
45. Mohammed Shafi Kundiladi, EVENT-DRIVEN IMAGE AND VEHICLE STATUS MANAGEMENT FOR LOW-POWER IOT DIGITAL LICENSE PLATES, Vol. 53 No. 3 (2025): July-September 2025, *Power System Protection and Control*, ISSN-1674-3415, <https://pspac.info/index.php/dlbh/article/view/175>
DOI: <https://doi.org/10.46121/pspc.53.3.17>
46. Controlled Synthesis and Characterization of Lanthanum Nanorods, Author(s), Jayadeep Tejani, Rahul Shah, Hiral Vaghela, Shailesh Vajapara, Amanullakhan Pathan, doi:10.18576/ijfst/090205, URL: <https://www.naturalspublishing.com/Article.asp?ArtclD=20705>, May-2020
47. Kunal Kapoor, Apr 2026, Relation Extraction and NER through Fine Tuned BERT model with transfer Learning, <https://ieeexplore.ieee.org/document/11472214/metrics#metrics>
48. Harender Bisht, Human–AI Collaboration in Insurance Fraud Detection: Ethical Cloud-Native Architectures for Fair and Transparent Decision Support, Volume 2026, Issue 1, <https://doi.org/10.52710/cfs.873>
49. Harender Bisht, Ethical AI-Augmented Compliance Systems: Architectural Innovations for Cloud-Native Financial and Insurance Data Integrity, Vol. 11 No. 1s (2026) , <https://doi.org/10.52783/jisem.v11i1s.14056>
50. Harender Bisht, Governance-By-Design For AI-Based Insurance Fraud Detection: Auditability, Accountability, And Regulatory Traceability, Archives / Vol. 9 No. 1 (2026) ,<https://doi.org/10.63278/jicrcr.vi.3620>
51. Harender Bisht, Operationalizing Explainable AI in Insurance Fraud Detection: From Model Transparency to Decision Justification, Vol. 35 No. 1 (2026): JOCAAA, <https://eudoxuspress.com/index.php/pub/article/view/4791>,

52. A. MahendraVardhan and S. Sridhar, "Determining False Positive Analysis of Software Vulnerabilities with Predefined Scan Rules using Random Forest Classifier and Decision Tree Technique," 2022 4th International Conference on Advances in Computing, Communication Control and Networking (ICAC3N), Greater Noida, India, 2022, pp. 622-625, DOI: <https://doi.org/10.1109/ICAC3N56670.2022.10074458>
53. Amilineni, M.V. 2025. Audit-Safe Agentic RAG Framework for Regulated Enterprise Systems: A Trustworthy AI Architecture for SAP, Finance, Healthcare, and Government Workflows. INTERNATIONAL JOURNAL OF ADVANCES IN SIGNAL AND IMAGE SCIENCES. (Jan. 2025), 34–46. DOI: <https://doi.org/10.29284/7fjzk883>
54. Islam, Imtiaz (Annotator), Goard, Michael (Annotator), Daves, Daniel (Annotator), Credit Card Fraud Detection: A Comparative Study of Anomaly Detection and Supervised Learning under Extreme Class Imbalance, Published May 5, 2026 | Version v1, DOI: [10.5281/zenodo.20032207](https://doi.org/10.5281/zenodo.20032207)
55. Deepa Nagalavi; Shankar Balla Microsoft, USA; Pushpalatha. M; Nashwan Adnan Othman; Malik Bader Alazzam; A. Balakumar, Enhancing Real-Time Language Processing via Advanced PET Signal Analysis and Deep Learning, 06-07 June 2025, DOI: [10.1109/ICICKE65317.2025.11136561](https://doi.org/10.1109/ICICKE65317.2025.11136561) , <https://ieeexplore.ieee.org/document/11136561>
56. Venkata Sai Aditya Kondru,FMR, Carmel, USA ;, Shankar Balla; Dhavalkumar Thakar; Dheeraj Velaga; Sri Lekha Bandla, Intelligent Human–Computer Interaction for Navigation Control Through Vision-Based Hand Gesture Recognition, Conferences >2026 IEEE 15th International Date of Conference: 07-09 April 2026, Date Added to IEEE Xplore: 08 May 2026 DOI: [10.1109/CSNT69054.2026.11502317](https://doi.org/10.1109/CSNT69054.2026.11502317) , <https://ieeexplore.ieee.org/abstract/document/11502317>
57. Sudipkumar Ghanvat , Aishwarya Badlani, Shreya Sandeep Joshi, Marketing Effectiveness in the Post-Cookie Era: A Comparative Analysis of First Party and Zero-Party Data Strategies on Campaign Performance and Customer Equity, Vol. 31 No. 4 (2023): JOCAAA , <https://www.eudoxuspress.com/index.php/pub/article/view/3940>
58. Christian Umenze, Fadumo Daniel Oluwatayomi, Emmanuel Okechukwu, "Assessing The Benefits Of Construction Management Software In Building Projects In Anambra State", International Research Journal of Modernization in Engineering Technology and Science, March-2024, Vol 06, Issue:
59. Dipta Chowdhury, Prithvi Gharami and Jhumana Akter, "Implementing Advanced Software in Construction Project Management and Control", Journal of Logistics, Informatics and Service Science, (2019) Vol. 6 No. 1, pp. 87-105.
60. Dinh Tuan Hai, Nguyen Giang Son and Tran Minh Tran. "Application of Autodesk software to design and manage planning projects at the conceptual stage", International Conference on Construction Digitalisation for Sustainable Development: Transformation through Innovation AIP Conf. Proc. 2428, 2021.
61. Eryk Głodziński, Mateusz Szyborski, "Utilization of software supporting project management in middle and large project-based organizations", an empirical study in Poland, International Conference on Project Management, Procedia Computer Science , (2019) Vol 164 , 389–396.
62. Egbebi Adeleke Oluwatosin Ehinola Nigeria Limited Doi. "Impact Of Advanced Construction Project Management Software On Project Performance", International Journal of Research Publication and Reviews, Vol 5, no 7, pp 414-422 July 2024.
63. Jeet Hemansubhai Parikh, Er. Jay Mody, Dr. J. R. Pitroda, "Effective Project Management Using Mobile Application For Construction Projects", A Review, International Research Journal of Modernization in Engineering Technology and Science, March-2021, Vol:03, Issue:03.