WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Implementation of Procurement Workflow in ERPNext

Nithin Reddy Saggu[1], Dr. B. Indira[2]

MCA III Semester Student, CBIT(A), Hyderabad, India,
Email: saggunithin24@gmail.com
Dr. B. Indira - Associate Professor, CBIT(A), Hyderabad, India,
Email: bindira@cbit.ac.in

ABSTRACT :

Procurement plays a vital role in organizational efficiency, directly influencing cost, transparency, and decision-making. Manual procurement processes often face challenges such as delays, miscommunication, and limited traceability. This work presents the *design and implementation of a procurement workflow in ERPNext*, an open-source ERP platform, to streamline material requests, multi-level approvals, and supplier quotation management. The workflow integrates conditional approval paths based on quotation value, ensuring accountability and compliance at every stage. By automating approvals and centralizing supplier interactions, the system reduces human errors, enhances transparency, and accelerates procurement cycles. The results highlight ERPNext's adaptability in addressing real-world procurement requirements with scalability and cost-effectiveness.

Keywords*:* ERPNext, Procurement Workflow, Workflow Automation, Supplier Quotation, Enterprise Resource Planning

Introduction

Enterprise Resource Planning (ERP) systems have become an integral part of modern organizations, enabling the seamless integration of core business processes such as finance, inventory, procurement, and human resources. Among these processes, procurement plays a pivotal role in ensuring that organizations acquire the right goods and services at the right time, cost, and quality. However, traditional procurement methods often rely on manual approvals, paper-based tracking, and fragmented communication, leading to inefficiencies, delays, and lack of transparency.

ERPNext, an open-source ERP platform, offers a flexible and customizable framework for managing procurement workflows. By digitizing approval processes, integrating supplier quotations, and automating purchase order generation, ERPNext enhances accountability and reduces human errors. Workflow-driven procurement further ensures that every request passes through well-defined approval hierarchies, strengthening compliance and organizational control.

This paper presents the *Implementation of Procurement Workflow in ERPNext*, focusing on designing and automating approval stages within the procurement cycle. The study highlights how structured workflows improve efficiency, transparency, and decision-making in procurement. The system was tailored to organizational requirements, ensuring smooth transitions from material requests to final purchase orders, while maintaining audit trails and role-based access control.

The proposed implementation not only streamlines procurement but also serves as a scalable model for organizations seeking to digitize their business processes with open-source ERP systems. By emphasizing automation and accountability, this work demonstrates the potential of ERPNext as a cost-effective and adaptable solution for modern procurement management.

Objectives

The primary objectives of this work are:

1. To design and implement a structured procurement workflow within ERPNext.
2. To establish *multi-level approvals* ensuring accountability and transparency.
3. To improve *efficiency and accuracy* by minimizing manual effort and errors.
4. To enable *real-time tracking and auditability* of procurement activities.
5. To create a *scalable framework* that can be extended to other ERP processes.

Methodology

The methodology adopted for this work involved the following steps:

1. *Requirement Analysis* – Studied the existing procurement practices and identified gaps in approval tracking, transparency, and efficiency.

2. *Workflow Design* – Defined the procurement flow covering *Material Request* → Manager Approval → HOD Approval → Supplier Quotation → Final Authorization.
3. *ERPNEXT Customization* - Configured workflows, roles, and state transitions within ERPNext to match the designed process.
4. *Automation & Notifications* – Implemented automated email triggers and approval links to streamline decision-making.
5. *Validation* – Tested the workflow with sample procurement cases to ensure correctness, transparency, and scalability.

System Design / Architecture

The architecture of the proposed procurement workflow in ERPNext is based on a *modular, role-driven, and event-triggered design*. It integrates user interactions, approval mechanisms, and backend automation within a unified ERP environment.
The architecture consists of the following layers:

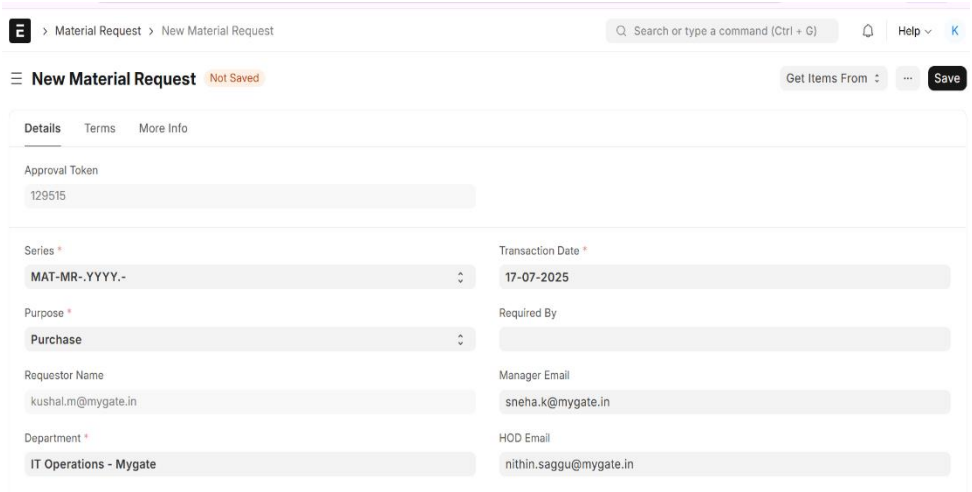

Fig. 1. User Layer – Employees initiate Material Request which are then routed for approval.

User Layer – The User Layer is where employees initiate Material Requests by entering item details and requirements. These requests are validated and then routed into the approval workflow. This layer ensures that all procurement activities begin with authorized users in a structured manner.

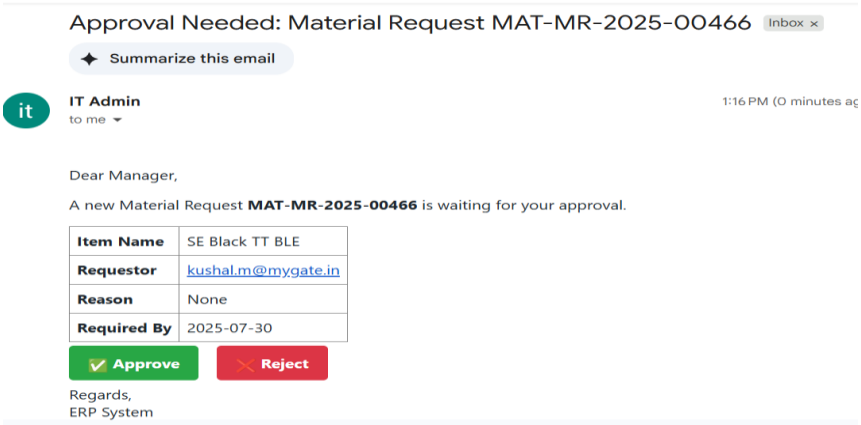

Fig. 2. Approval Layer – Department Managers and HODs review and authorize Material Requests based on role-specific workflows.

Approval Layer – The Approval Layer involves Department Managers and HODs who review submitted Material Requests according to predefined workflows. Each request is evaluated based on budget, necessity, and policy compliance before authorization. This layer ensures accountability and controlled decision-making in the procurement process.

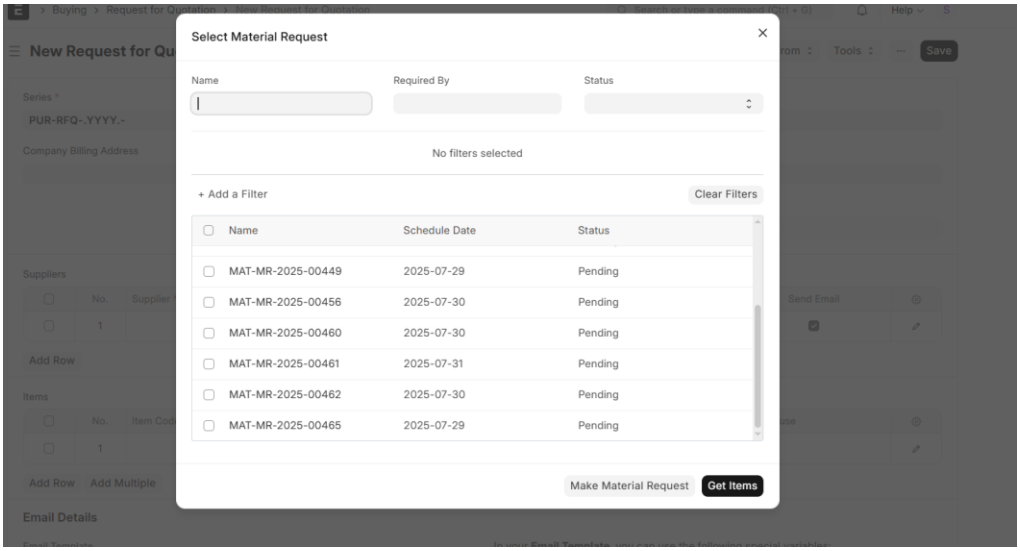

Fig. 3. Procurement Layer – Approved requests are processed into Supplier Quotations and evaluated for vendor selection.

Procurement Layer – The Procurement Layer handles approved requests by converting them into Supplier Quotations. Vendors are evaluated based on price, quality, and delivery timelines, enabling transparent and efficient vendor selection. This layer ensures that procurement decisions align with organizational requirements.

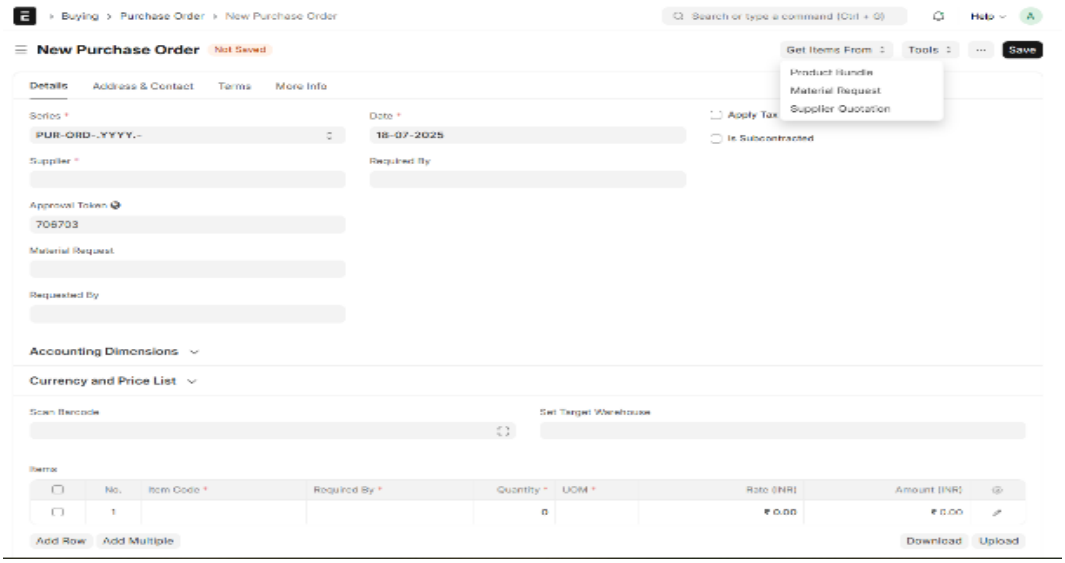

Fig. 4. Finance Layer – Final approval and purchase authorization by Finance

Finance Layer – The Finance Layer is responsible for granting the final approval of procurement requests. Once authorized, purchase orders are generated and financial records are updated to ensure compliance and budget control. This layer provides the official authorization for procurement execution.*System Automation* – ERPNext automates email notifications, approval links, and state transitions to ensure efficiency and transparency.

Employee → Manager → HOD → Procurement Team → Finance → Final Approval

Implementation & Results

The procurement workflow was implemented in ERPNext by configuring customized workflows, approval hierarchies, and automated email notifications. The system was designed to reflect real-world procurement processes within the organization.

- ***Material Request Workflow*:**
  - Employees can raise a Material Request.
  - The request is first routed to the Department Manager for review.
  - Upon approval, it is escalated to the Head of Department (HOD) for final approval.
- ***Supplier Quotation Workflow*:**
  - Supplier quotations are collected and verified by the Procurement Manager.
  - If the quotation value is ≤ ₹5,00,000, it is directly routed to the Procurement Head.
  - If the value exceeds ₹5,00,000, it first requires CEO approval before reaching the Procurement Head.
  - All approved quotations are forwarded to the Finance team for processing.
- ***Purchase Order Handling*:**
  - Once quotations are approved, the Finance team creates and finalizes the Purchase Order.
  - Approved Purchase Orders are sent to the suppliers, and the system automatically generates Gate Passes for goods delivery.
- ***Automation & Notifications*:**
  - Email notifications with secure approval/rejection links were implemented for each stage of the workflow.
  - Dynamic email fetching from Google Sheets ensured that approvals were routed to the correct authority.

Results

The system provided the following benefits:

- Reduced manual intervention and paperwork.
- Faster approval cycle with one-click email approvals.
- Improved transparency and accountability in procurement.
- Enhanced traceability of requests, quotations, and orders through ERPNext's database.

Conclusion and Future Work

The implementation of the procurement workflow in ERPNext successfully automated and streamlined the organization's purchasing process. By introducing structured approval hierarchies, conditional workflows, and automated notifications, the system minimized manual errors, reduced delays, and improved transparency across departments. The adoption of ERPNext provided a centralized platform where all procurement activities, from material requests to purchase order finalization, could be effectively monitored and managed.

This project demonstrates how open-source ERP solutions like ERPNext can be customized to meet organizational requirements while ensuring scalability and efficiency.

For future work, the system can be further extended by integrating advanced analytics to predict procurement trends, linking with supplier performance dashboards, and embedding mobile notifications for on-the-go approvals. Additionally, incorporating AI-driven insights can further optimize decision-making in procurement activities.

REFERENCES

[1] ERPNext Foundation, "ERPNext Documentation." [Online]. Available: https://docs.erpnext.com/.
[2] Frappe Technologies, "Frappe Framework Documentation." [Online]. Available: https://frappeframework.com/docs.
[3] Google Developers, "Apps Script & API Guides." [Online]. Available: https://developers.google.com/apps-script.
[4] MariaDB Foundation, "MariaDB Documentation." [Online]. Available: https://mariadb.com/kb/en/documentation/.
[5] ERPNext Project, *Official Source Code Repository with Examples*, GitHub, [Online]. Available: https://github.com/frappe/erpnext
[6] ERPNext Community, "Tutorials and Articles," ERPNext Forum. [Online]. Available: https://discuss.erpnext.com/.
[7] Vivish Technologies (MyGate), "Internal Training Materials and Project Notes," Internship Resources, 2025.