



PROCUREMENT SYSTEM

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Abstract— A procurement system streamlines the purchase of goods/services and inventory management. It involves acquiring items from external sources, often through bidding or competition, amidst shortages. Enterprise Resource Planning (ERP) systems aid in rapid decision-making through data analysis and manage various business operations. Cloud computing has made ERP accessible to SMEs, but choosing the right product can be challenging. Odoo's purchasing management module offers a comprehensive solution for managing purchasing activities such as supplier management, stock reviews, and quality inspections. E-Procurement enhances firm performance by reducing search time, administrative costs, and cycle times, and by increasing volume with preferred suppliers. Information Communication Technologies (ICTs) improve efficiency and quality in service delivery, with e-procurement systems automating processes and reducing transaction costs. In dynamic environments, e-procurement minimizes conflicts and improves system performance..

Keywords: ERP, Odoo, SMEs, Small Medium Enterprise, Enterprise Resource Planning, Odoo Architecture

I. INTRODUCTION

A procurement system, also known as a purchase system, serves as the backbone of organizational purchasing and inventory management. It streamlines the process of acquiring goods and services, ensuring seamless transactions while maintaining accurate inventory records. This involves negotiating terms and conditions with external suppliers, often through competitive processes like bidding.

Enterprise Resource Planning (ERP) systems play a pivotal role in modern business operations, regardless of organizational size. These systems enable companies to make informed decisions swiftly by analyzing intricate data sets. With the advent of cloud computing, ERP solutions have become more accessible to Small and Medium Enterprises (SMEs), empowering them to compete effectively in the market.

Despite the benefits of ERP systems, selecting the right software can pose a significant challenge, particularly for SMEs lacking specialized IT resources. However, platforms like Odoo offer comprehensive solutions tailored to meet diverse business needs, including purchasing management. Odoo's purchasing management module encompasses various functions such as managing vendor relationships, conducting stock assessments, and ensuring quality control. E-Procurement, beyond being a mere online purchasing tool, is increasingly recognized as a strategic performance enhancer for firms. Successful implementation of e-procurement strategies can lead to substantial improvements in efficiency and competitiveness. Key objectives of e-procurement initiatives include reducing search time for products and suppliers, streamlining administrative processes, and optimizing supplier relationships for better pricing and quality assurance.

Moreover, Information Communication Technologies (ICTs) have revolutionized the landscape of business operations, reshaping service delivery models and customer expectations. E-procurement systems leverage these advancements by automating procurement processes, thereby reducing transaction costs and minimizing manual intervention.

In dynamic business environments, e-procurement not only facilitates smoother operations but also mitigates conflicts that may arise due to organizational diversity. By aligning procurement practices with strategic objectives, companies can harness the full potential of e-procurement to drive sustainable growth and maintain a competitive edge in the market.

II. LITERATURE SURVEY

- Enterprise Resource Planning (ERP) systems have become ubiquitous across organizations, irrespective of size, driven by the need for rapid decision-making based on complex data analysis. Initially limited to large organizations due to high implementation costs, the emergence of open-source ERP systems has democratized their usage. Odoo, a leading open-source ERP program, has

elevated ERP systems by integrating content management, e-commerce, and business intelligence functionalities.

- ERP software plays a crucial role in managing and integrating business operations, with cloud computing making it accessible to Small and Medium Enterprises (SMEs). However, selecting the right ERP product remains a challenge for most SMEs lacking IT expertise. Success in ERP implementation hinges on factors such as product selection, with business performance and total cost being critical considerations, particularly in developing countries. The alignment of ERP functionalities with business processes and reliable support services are key factors for successful ERP adoption across all regions.
- Project management is paramount in software development projects, and Odoo ERP offers a module dedicated to this purpose. This research utilizes the project management module within Odoo ERP, employing the Accelerated SAP (ASAP) methodology. The study, conducted at the *Islamic State University Maulana Malik Ibrahim*, concludes that ASAP methodology demonstrates efficiency and effectiveness in managing the development of e-learning management software. The project execution yields favorable results in terms of timeline adherence and project realization accuracy.

PROBLEM STATEMENT

The procurement process is a critical aspect of organizational operations, ensuring the timely acquisition of goods and services while maintaining optimal inventory levels. However, many organizations face challenges in effectively managing their procurement systems, leading to inefficiencies and potential disruptions in supply chains. These challenges include manual procurement processes, lack of transparency and accountability, difficulties in vendor management, and limited integration with other business systems.

Furthermore, as organizations grow and expand, the complexity of their procurement needs increases, requiring scalable and adaptable procurement systems that can accommodate evolving business requirements. Additionally, the emergence of new technologies, such as cloud computing and big data analytics, presents both opportunities and challenges for modern procurement systems.

Therefore, the problem statement for this project is to design and develop an advanced procurement system that addresses the aforementioned challenges and leverages emerging technologies to enhance efficiency, transparency, and effectiveness in the procurement process. This system should be scalable, adaptable, user-friendly, and seamlessly

integrated with other organizational systems. Additionally, the project aims to evaluate the impact of the developed procurement system on organizational performance, cost savings, and vendor relationships..

III. OBJECTIVES AND SCOPE OF THE PROJECT

The objective of the proposed model procurement system is to enhance efficiency, transparency, and effectiveness in organizational procurement processes. It aims to streamline the acquisition of goods and services, optimize inventory management, improve vendor relationships, and reduce costs. Leveraging emerging technologies such as cloud computing and big data analytics, the system seeks to address existing challenges and adapt to evolving business requirements. The scope of this system includes automating procurement processes, enhancing transparency and accountability, facilitating effective vendor management, integrating with existing organizational systems, ensuring scalability and adaptability, and utilizing emerging technologies for data-driven insights. Additionally, the system will undergo evaluation to assess its impact on organizational performance metrics, providing valuable insights for further optimization and refinement.

MEDHODOLOGY

The procurement process is vital for organizational operations, ensuring timely acquisition of goods and services while managing inventory effectively. However, many organizations struggle with managing procurement systems, leading to inefficiencies and supply chain disruptions. Challenges include manual processes, lack of transparency, vendor management difficulties, and limited integration with other systems. As organizations grow, their procurement needs become more complex, requiring scalable systems that adapt to evolving requirements. New technologies like cloud computing and big data analytics offer opportunities and challenges for modern procurement.

Thus, this project aims to design and develop an advanced procurement system addressing these challenges and leveraging emerging technologies for enhanced efficiency, transparency, and effectiveness. The system should be scalable, adaptable, user-friendly, and seamlessly integrated with other organizational systems. Furthermore, it seeks to evaluate the system's impact on organizational performance, cost savings, and vendor relationships.

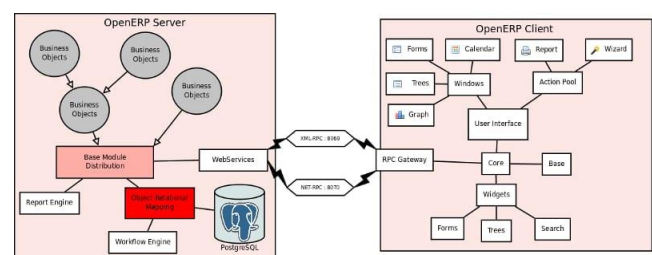


Fig.1 Methodology: Open ERP Client Server

IV. RESULTS AND DISCUSSION

The analysis of the e-procurement system's utilization yielded four primary categories: data transfer, supplier/buyer communication, system administration, and billing management. Participants shared insights into the challenges and benefits associated with each category, shedding light on areas of improvement and strategies for enhancing system effectiveness.

Data Transfer : Participants highlighted the significance of data automation in expediting routine office tasks. Automation was praised for its ability to accelerate data transmission and communication, streamlining procurement processes. Despite the perceived benefits of automation, participants also raised concerns about communication and technological challenges, particularly regarding email communication. Issues such as emails being redirected to spam folders or delayed due to poor internet connections were reported, underscoring the need for reliable communication channels to ensure seamless data transfer.

Supplier/Buyer Communication:

Effective communication between buyers and suppliers emerged as a critical factor in the procurement process. Participants emphasized the importance of compromise and ongoing coordination to address issues and maintain positive relationships. Email communication was identified as a valuable tool for transmitting information, with participants acknowledging its role in facilitating supplier/buyer collaboration. The benefits of clear and constant communication were highlighted, including improved transaction efficiency, transparency, and cooperation.

System Administration: Participants discussed various aspects of system administration, including monitoring, oversight, and accountability. While some participants expressed satisfaction with the system's monitoring capabilities, others suggested improvements such as assigning specific individuals to monitor issues and streamline processes. Transparency and online monitoring were emphasized as essential for effective system administration, enabling stakeholders to access and share information easily. Participants underscored the importance of systematic process streamlining and regular updates to enhance system performance and ensure accountability.

Billing Management: Billing management emerged as a key concern for participants, with a focus on accountability and efficiency. Participants stressed the importance of timely payment to suppliers to maintain positive relationships and avoid negative perceptions of the organization. Accountability in billing management was linked to fairness, transparency, and integrity in processing paperwork and handling responsibilities. Suggestions for improvement included implementing a more systematic billing monitoring process and updating data regularly to ensure accuracy and efficiency.

Overall, the results of the e-procurement system utilization highlight both the benefits and challenges associated with its implementation. While participants acknowledged the system's role in improving productivity, data accessibility,

and quality of goods/services, they also identified areas for enhancement, such as communication reliability, system monitoring, and billing management. These insights provide valuable guidance for organizations seeking to optimize their procurement processes and leverage e-procurement systems effectively

V .CONCLUSION

The conclusion drawn from the findings of the study on the E-Procurement System utilization suggests that four key categories emerged: data transfer, buyer/supplier collaboration, system administration, and billing management. Staff perceptions indicated that the system contributed to productivity gains and enhancements. Therefore, management is advised to prioritize improvements in the e-procurement system by implementing routine observation of various processes and fostering integrated collaboration among departmental staff members. This approach can lead to further optimization of the system and better outcomes for the organization.

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