"Evaluating ERP Implementation Feasibility: A Case Study of Odoo Adoption in a Philippine Distribution Firm Using the Toe Framework"

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ABSTRACT

This paper evaluates the strategic and economic feasibility of adopting an enterprise resource planning (ERP) system—specifically Odoo—within a Philippine distribution company experiencing operational inefficiencies arising from fragmented and manual processes. A single in-depth evaluative case study was employed, integrating the Technology–Organization–Environment (TOE) framework with economic assessment tools including cost–benefit analysis, return on investment (ROI), and payback period estimation. Results indicate strong technological fit between Odoo modules and existing workflows, adequate organizational readiness supported by leadership commitment, and favorable environmental pressures. The economic evaluation indicates a projected ROI of 55.4 per cent, with an estimated payback period of approximately eight months. The study provides managers and decision-makers with an evidence-based framework for evaluating ERP investments, emphasizing the importance of aligning technological suitability, organizational readiness, and financial justification before implementation. This study contributes to the enterprise information management literature by integrating the TOE framework with formal economic evaluation in a real-world distribution firm context, thereby addressing the limited empirical evidence from Philippine distribution companies.

Keywords: ERP adoption; Odoo ERP; Technology–Organization–Environment framework; economic evaluation; distribution firms; SMEs

INTRODUCTION

Organizations in the distribution sector operate in environments characterized by rapid inventory cycles, complex supply chain interactions, and increasing customer expectations for real-time information. As these dynamics intensify, traditional manual processes and disconnected systems create operational bottlenecks that hinder productivity and obstruct growth. Brigada Distributions Inc. is no exception. Like many distribution firms in emerging markets, the company relies on spreadsheets, isolated software tools, and manual documentation practices. While these tools may be sufficient for small-scale operations, they cannot support the increasing complexity of large-scale distribution activities.

Globally, ERP systems have been recognized as transformative tools that enhance integration, improve process synchronization, and facilitate better decision-making. Numerous studies have emphasized the strategic value of ERP platforms in creating seamless data flow and enhancing the transparency of business operations. Their relevance to distribution companies is particularly notable, given the sector's reliance on accurate stock monitoring, timely logistics coordination, and comprehensive financial reporting.

ERP adoption is no longer limited to large corporations. Recent advancements in open-source and cloud-based platforms have democratized access, enabling small and medium-sized enterprises (SMEs) to implement ERP solutions at lower costs. Among the many ERP options available, Odoo has risen to prominence for its affordability, modularity, and adaptability. These characteristics make it attractive to organizations that require customization without incurring the high expenses associated with proprietary ERP brands.

Statement of the Problem

This study investigates whether Odoo ERP is the most suitable option for achieving this objective, considering

both strategic and financial aspects. Specifically, the study aims to answer the following questions:

1. How can the company address inconsistent inventory tracking that leads to frequent stock mismatches?
2. How can prolonged order processing times be reduced when sales and warehouse teams rely on multiple unintegrated tools?
3. How can the company overcome delayed financial reporting caused by reliance on manually compiled spreadsheets?
4. How can managers gain access to real-time data to enable prompt and informed decision-making?
5. How can fragmented workflows be streamlined to eliminate duplicated efforts and reduce operational costs?

Given these challenges, the company requires an integrated system that consolidates inventory, sales, procurement, accounting, and reporting functions.

LITERATURE REVIEW

Prior studies consistently highlight ERP systems as enablers of enterprise integration, improved transparency, and enhanced operational control across diverse organizational contexts. Davenport (1998) seminal work established ERP systems as transformative technologies capable of integrating disparate business processes into unified information architectures, thereby eliminating data silos and improving decision-making capabilities. More recently, Panorama Consulting Solutions (2021) reported that organizations implementing ERP systems experienced significant improvements in operational efficiency, data accuracy, and cross-functional collaboration.

Research focusing on distribution and supply chain contexts indicates that ERP adoption improves inventory accuracy, reduces administrative workload, and enhances forecasting capabilities. Kale et al. (2010) demonstrated that ERP implementation in distribution companies resulted in reduced order cycle times and improved inventory turnover rates. Similarly, Shehab et al. (2004) found that ERP systems enable real-time visibility across supply chain operations, facilitating more responsive and agile business processes. Ganesh et al. (2014) further emphasized that integrated ERP platforms significantly reduce manual data entry errors and streamline communication between sales, warehouse, and accounting functions.

The TOE framework has been extensively validated as a robust theoretical lens for examining technology adoption decisions. Baker (2012) applied the TOE framework to ERP adoption in manufacturing firms, confirming that technological compatibility, organizational readiness, and environmental pressures collectively influence adoption outcomes. Ramdani et al. (2013) extended this framework to SME contexts, demonstrating its applicability across different organizational sizes and industries. More specifically, Ahmad and Cuenca (2013) utilized the TOE framework to examine ERP adoption in developing economies, highlighting the importance of local contextual factors in shaping implementation success.

Odoo ERP has gained increasing attention in academic and practitioner literature due to its modular architecture, affordability, and particular suitability for SMEs and mid-sized firms. Unlike traditional enterprise systems that require substantial capital investment, Odoo's open-source foundation and flexible deployment options make it accessible to organizations with limited IT budgets (Conway & Monk, 2020). Velcu (2010) noted that modular ERP systems allow organizations to implement functionality incrementally, reducing implementation risk and enabling phased adoption strategies. Furthermore, research by Al-Mashari et al. (2003) emphasizes that successful ERP adoption requires not only technological fit but also careful attention to organizational change management, user training, and leadership support—factors that remain critical regardless of the specific ERP platform selected.

Despite growing interest in ERP adoption, empirical studies focusing specifically on Philippine distribution companies remain limited. This gap is particularly significant given the unique operational challenges, regulatory environments, and competitive dynamics that characterize emerging market contexts (Gupta & Kohli, 2006). The present study addresses this gap by providing empirical evidence from a real-world Philippine distribution firm, integrating strategic assessment with economic evaluation to offer comprehensive insights into the feasibility of ERP adoption.

Conceptual Framework

This study is grounded in the Technology–Organization–Environment (TOE) framework, initially developed by Tornatzky and Fleischer (1990), which posits that three distinct yet interrelated contextual dimensions influence organizational technology adoption decisions. The technological context examines the characteristics and capabilities of the ERP system itself, including its compatibility with existing workflows, functional adequacy, and technical infrastructure requirements. The organizational context encompasses internal factors such as organizational readiness, leadership commitment, available resources, employee competencies, and change management capacity. The environmental context addresses external influences, including competitive pressures, industry trends, regulatory requirements, customer expectations, and market dynamics that may compel or constrain technology adoption.

In this study, these three dimensions jointly shape the ERP adoption decision for Brigada Distributions Inc., with each providing critical insights into the feasibility and appropriateness of Odoo implementation. The technological assessment evaluates whether Odoo's modular capabilities align with the company's operational needs; the organizational evaluation examines whether the company has sufficient readiness and capacity to support successful implementation; and the environmental evaluation identifies external drivers that create urgency or opportunities for digital transformation. Importantly, financial feasibility—assessed through cost-benefit analysis, return-on-investment calculations, and payback period estimation—serves as a moderating factor in this relationship, providing quantitative evidence that either reinforces or challenges the qualitative assessments derived from the TOE dimensions. This integrated framework enables a comprehensive, multi-dimensional evaluation that balances strategic considerations with economic realities, ultimately yielding more robust and actionable recommendations for ERP adoption decisions.

METHODOLOGY

Case organization description**.** The case organization is Brigada Distributions Inc., a Philippine-based distribution company engaged in the handling and distribution of fast-moving consumer goods. The company operates multiple functional units, including sales, warehousing, procurement, accounting, and logistics, and has experienced increasing operational complexity as its scale of operations expanded. Reliance on manual processes and fragmented information systems has resulted in inventory discrepancies, delayed reporting, and workflow inefficiencies, prompting management to evaluate the adoption of an integrated ERP system.

A single in-depth evaluative case study design was adopted to examine ERP adoption within a real organisational context. Qualitative data were gathered through interviews and document analysis, while quantitative evaluation employed cost–benefit analysis, ROI, and payback period calculations. Data triangulation was used to enhance credibility.

RESULTS

The results of this study indicate that Brigada Distributions Inc. is confronted with substantial operational inefficiencies that negatively impact productivity, accuracy, and workflow continuity. These inefficiencies underscore the critical limitations of the company's current manual processes and demonstrate an urgent need for a more integrated system. The technological assessment reveals strong alignment between Odoo ERP's modular capabilities and the company's existing workflows, with the system offering clear functional advantages across inventory management, sales processing, and financial reporting. Organizational readiness is generally adequate, supported by leadership commitment and employee openness to change; however, the study emphasizes the need for structured training programs to address identified skill gaps and ensure smooth adoption across all operational levels. Environmental conditions—including intensifying competitive pressure, evolving customer expectations, and industry-wide digital transformation trends—further reinforce the strategic imperative for modernization. The economic analysis presents compelling evidence supporting ERP implementation, demonstrating projected annual benefits that significantly exceed implementation costs, a favorable 55.4 percent return on investment, and a rapid payback period of approximately eight months. Collectively, these findings affirm that adopting Odoo ERP is not only operationally feasible and economically viable but also strategically essential for enhancing Brigada Distributions Inc.'s competitive position and long-term sustainability.

DISCUSSION

The findings support existing ERP literature that emphasizes technological fit, organizational readiness, and economic justification as key determinants of successful adoption. By integrating the Technology-Organization-Environment (TOE) framework with rigorous financial evaluation tools, this study offers a more comprehensive understanding of ERP decision-making processes in distribution firms. This dual-lens approach demonstrates that successful ERP adoption requires not only technological compatibility and favorable financial returns but also adequate organizational preparedness and supportive environmental conditions. The results reinforce the importance of leadership commitment as a critical enabler of organizational change and highlight how competitive and regulatory pressures can catalyze digital transformation initiatives. Furthermore, the study validates the practical utility of combining strategic assessment frameworks with quantitative economic analysis to produce evidence-based recommendations that address both the operational and financial dimensions of technology investment decisions. This integrated methodology offers valuable insights for practitioners and researchers seeking to understand the multifaceted nature of ERP adoption in similar organizational contexts.

CONCLUSION AND IMPLICATIONS

This study concludes that Odoo ERP adoption is both strategically justified and economically viable for Brigada Distributions Inc., offering a robust solution to the operational inefficiencies that currently constrain the organization's performance and competitiveness. The convergence of strong technological fit, adequate organizational readiness, favorable environmental conditions, and compelling financial returns provides a comprehensive foundation for implementation. The projected return on investment of 55.4 percent and payback period of approximately eight months demonstrate that ERP adoption represents not merely an operational upgrade but a sound strategic investment with measurable financial benefits.

Managers and decision-makers are encouraged to view ERP implementation as a comprehensive organizational transformation initiative that extends beyond mere technology deployment. Success requires careful alignment among technology capabilities, human capital development, and strategic business objectives. Specifically, organizations must invest in structured training programs to bridge skill gaps, secure sustained leadership commitment throughout implementation, and establish clear change-management protocols to facilitate user acceptance and system integration. Furthermore, the study underscores the importance of conducting thorough pre-implementation assessments that examine technological compatibility, organizational preparedness, and economic feasibility in tandem, rather than in isolation.

From a broader perspective, this research contributes to enterprise information management literature by demonstrating the practical value of integrating the TOE framework with formal economic evaluation methods. This integrated approach provides practitioners with an evidence-based decision-making model that can be adapted to similar contexts, particularly in distribution companies operating in emerging markets, where empirical research remains limited. Future research should explore post-implementation outcomes to validate these projections and examine the long-term organizational impacts of ERP adoption in comparable settings.

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