

The Digital Leap by Boosting Business Performance through E-Invoicing with Utaut and Delone & Mclean

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Abstract

Electronic invoicing (e-invoicing) has become a crucial component of modern financial management, offering the potential to streamline financial transactions, enhance compliance, and improve operational efficiency. Despite its well-documented advantages, the implementation of e-invoicing remains fraught with challenges. This conceptual paper aims to explore the role of e-invoicing in enhancing business performance through two primary interventions: the integration of existing systems and Business Process Restructuring (BPR). These interventions are analyzed through the lens of the Unified Theory of Acceptance and Use of Technology (UTAUT) and the DeLone & McLean Information Systems Success Model. The study draws upon existing literature to develop a conceptual framework for e-invoicing adoption, focusing on the critical factors that influence successful implementation. The first intervention, system integration, emphasizes aligning the e-invoicing system with existing operational infrastructures, addressing themes such as Perceived Ease of Use, Facilitating Conditions, and Perceived Usefulness from the UTAUT model. The second intervention, BPR, is based on the DeLone & McLean model, with a focus on improving System Quality, Information Quality, and Service Quality. The anticipated findings suggest that both interventions will significantly improve business performance by enhancing operational efficiency, user satisfaction, and service quality. The paper concludes by offering insights into how businesses can overcome the barriers to e-invoicing adoption, leveraging both theoretical models to guide effective implementation strategies.

Keywords: E-invoicing, Business Performance, UTAUT, DeLone & McLean Model, System Integration, Business Process Restructuring

Introduction

E-invoicing is increasingly vital in contemporary business environments, particularly in accounting and financial management contexts. Its primary objective is to streamline financial transactions, ensure regulatory compliance, and optimize operational efficiency. However, despite these clear advantages, many organizations have notable challenges during implementation. This conceptual paper applies to the Unified Theory of Acceptance and Use of Technology (UTAUT) and the DeLone and McLean Information Systems Success Model to analyze factors affecting the successful adoption of e-invoicing and its potential to enhance business performance.

Literature Review

Theoretical Foundations

This UTAUT framework identifies critical determinants of technology acceptance, including Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions (Frihardina & Mulia, 2023; Seongtae, Il, & Myung Soo, 2011). Concurrently, the DeLone & McLean Information Systems Success Model evaluates system effectiveness based on System Quality, Information Quality, Service Quality, User Satisfaction, and Net Benefits (Indriyati Hadi, Prasajo, & Seftika, 2023). The comparison of approaches for this theory and model are as follows:

No.	Aspect	UTAUT Theory	Delone & McLean Model
1.	Focus	Behavioral intention and user acceptance	System effectiveness and user satisfaction
2.	Key Constructs	Performance expectancy, effort expectancy, social influence, facilitating conditions (Frihardina & Mulia, 2023)	System quality, information quality, service quality, user satisfaction, net benefits (Indriyati et al., 2023)
3.	Application	Adoption drivers	Overall system impact
4.	Extended Models	UTAUT2 includes hedonic motivation, price value, habit (Syamsudin et al., 2018; Prima et al., 2020)	Integrates with PMT theory (Indriyati et al., 2023)

Business Performance Dimensions

Key dimensions of business performance relevant to e-invoicing include operational efficiency, cost reduction, improved accuracy of financial transactions, user satisfaction, and enhanced compliance with regulatory standards (Bani Ahmad, 2024 ; Wong, 2022)

Implementation Gaps and Challenges Identified

Significant implementation gaps and challenges highlighted in recent literature include technological compatibility issues, organizational readiness deficiencies, and integration challenges. Technological compatibility is crucial for successful integration with existing enterprise systems, yet many organizations struggle with legacy systems and platform usability (Azman, Mohamed, & Mohamad Jamil, 2021). Organizational readiness, including management support and adequate training, is often insufficient, causing resistance to change and reduced adoption effectiveness (Qi & Azmi; Bani Ahmad, 2024). Aside, lack of technical infrastructure and knowledge about e-invoicing implementation significantly

hinder adoption which providing targeted training and education can mitigate these challenges (Rok, Andreja, & Gregor, 2024). Moreover, diverse and evolving regulations create substantial challenges. Hence, adopting structured frameworks capable of adapting to regulatory changes can help businesses effectively navigate these complexities (Nguyen, Nguyen, & Dang, 2020).

Intervention Strategy

There are two principal interventions - integration with existing systems and Business Process Restructuring (BPR) - based on the UTAUT and DeLone & McLean Information Systems Success Model suggested in this paper. Integration with Existing Systems: focuses on seamless system integration using middleware to connect the IRBM e-invoicing system with existing operational systems. The UTAUT themes such as Perceived Ease of Use, Facilitating Conditions, and Perceived Usefulness guide this process. Meanwhile, for the next phase is BPR which is supported by DeLone & McLean's model, emphasizes improving system quality, information quality, and service quality to enhance operational outcomes. Therefore, Figure 1 outlines the two intervention cycles and the relationship between system integration and business process restructuring.

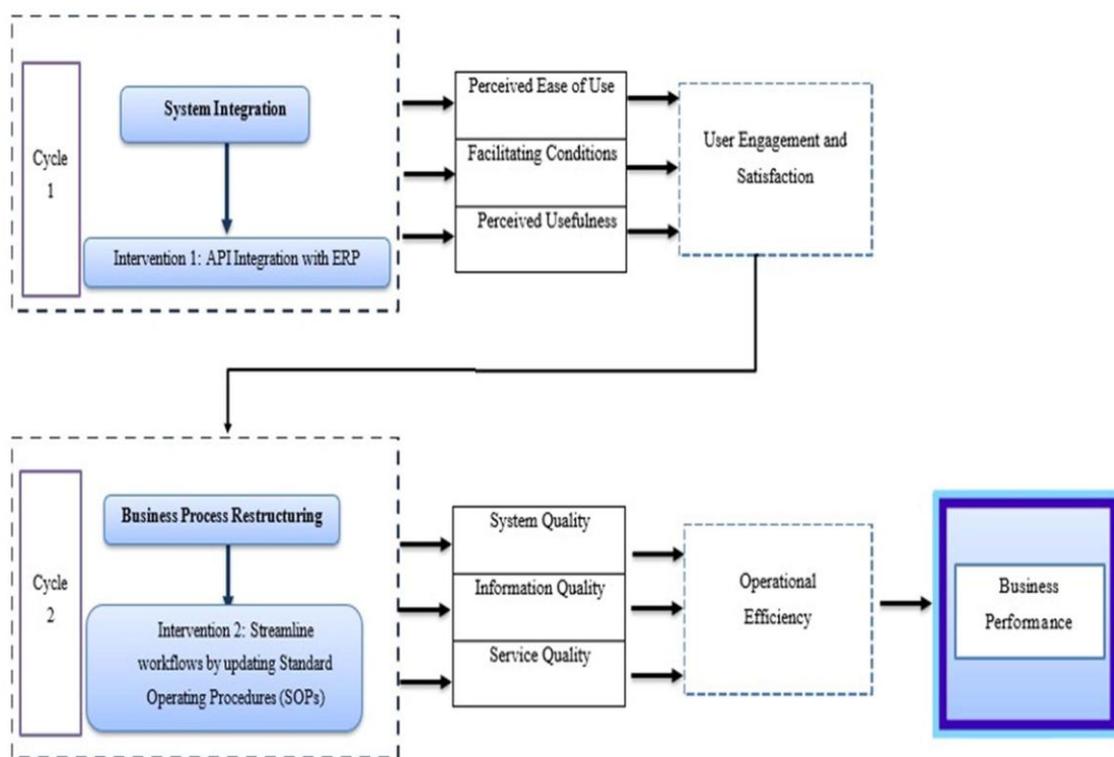


Figure 1: Conceptual Framework from e-invoicing implementation

Methodology

This paper employs qualitative conceptual analysis through extensive literature review and synthesis. Literature is critically analyzed to develop an integrative conceptual framework grounded in UTAUT and DeLone & McLean models.

Discussion

Based on the expanded literature, an enhanced conceptual framework combining UTAUT theory and DeLone & McLean models has been developed. It explores how the intervention cycles directly contribute to improving business performance as theoretical underpinnings.

Cycle 1 involves system integration via middleware facilities and API connections, emphasizing smooth interoperability with existing enterprise resource planning (ERP) systems. Key strategies include preparatory analysis to identify integration requirements, data alignment for seamless data synchronization, and rigorous system adaptation and testing to enhance usability and compatibility. Derived from the UTAUT model, themes such as Perceived Ease of Use, Facilitating Conditions, and Perceived Usefulness are explored qualitatively, focusing on user acceptance, perceptions and system reliability (Venkatesh, Morris, Davis, & Davis, 2003). This cycle aims to ensure minimal disruption to operational continuity and maximize the perceived usefulness of the upgraded system.

Cycle 2 emphasizes strategic business process restructuring to optimize operational workflows and enhance service quality. Aligned with the DeLone & McLean IS Success Model, it examines System Quality, Information Quality, and Service Quality (DeLone & McLean, 1992). The necessity for BPR arises from rapidly changing environments, high customer expectations, and the imperative for innovation in organizational processes. Fasna & Gunatilake (2019) contributed to the understanding of BPR by detailing a structured process for implementing BPR projects. Their framework emphasizes the need for organizations to critically assess existing workflows, identify redundancies, and apply systematic changes that not only improve performance but also align with strategic goals. Additionally, Hong and Shibghatullah (2024) further emphasize the significance of adaptive technological frameworks needed for successful BPR implementations. They propose that middleware integration strategies, which facilitate compatibility with existing systems, play a crucial role in overcoming integration challenges that often hinder BPR efforts. This concept supports the findings of Gospodarevskaya & Churilov (2011), who outline process performance indicators that signify the tangible benefits derived from BPR initiatives in healthcare settings. Hence, the figure 1 framework illustrates the relationships between technological readiness, organizational alignment, and environmental compliance as foundational drivers for successful e-invoicing adoption, directly influencing overall business performance

Anticipated Findings

The expected impacts of the two intervention cycles, integrating the UTAUT theory and DeLone & McLean model are:

Intervention Cycle	Key Impact	Relevant Model/Theory	Assumption	Expected Outcome
Cycle 1: System Integration	Improved data flow, minimize operational disruptions and system compatibility (Irawati, Darmawan, Sofyan, & Serebryakova, 2022)	UTAUT (Perceived Ease of Use)	Systems perceived as easier to use are more readily accepted by users (Venkatesh, Morris, Davis, & Davis, 2003)	Improve user acceptance and effectiveness.
		UTAUT (Facilitating Conditions)	The availability of technical and organizational infrastructure supports the integration process (Venkatesh, Morris, Davis, & Davis, 2003)	Improve user satisfaction
		UTAUT (Perceived Usefulness)	The need for the upgraded system to seamlessly mesh with existing workflows to improve dependability	Enhance system reliability
Cycle 2: BPR	Enhanced system efficiency and operational workflows since it signifies the tangible benefits derived from BPR initiatives (Gospodarevskaya & Churilov, 2011)	DeLone & McLean Model (System Quality)	High system quality ensures smooth operation and integration, reducing errors and downtime.	Reduced processing time and errors.
		DeLone & McLean Model (Information Quality)	Ensure data integrity enhances invoice data reliability, which improves customer satisfaction (Huemer, Zapletal, & Liegl, 2014)	Enhance system output for usability
		DeLone & McLean Model (Service Quality)	Effective user support fosters user satisfaction and minimizes resistance to change (Amalina & Suryani, 2022)	Reduced operational disruptions

In these anticipated findings, it connects directly with business performance metrics, aiming for enhanced operational efficiency, user satisfaction, and reduced system errors.

Conclusion

This study underscores the challenges and benefits associated with implementing e-invoicing systems, especially in financial management contexts. Leveraging UTAUT theory and DeLone & McLean model, the paper provides a structured framework to guide businesses in enhancing financial operational efficiency, regulatory compliance, and overall performance. Future empirical research should test this framework across diverse sectors to further validate its applicability and effectiveness in practical scenarios.

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