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Original Article

FinTech - Automatic Payment Process in the ERP System

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Abstract *- Businesses are moving online, opening up more channels for growth and a wider customer reach. With a global market, there is a need for a streamlined and automatic payment system. Integrating ERP systems and automatic payment solutions offers an efficient way to carry out financial management, which is crucial for business growth. ERP systems have evolved with technological advancement. Today, ERP incorporates cloud computing, artificial intelligence, and data analytics technologies to facilitate automation in ERP payment systems. Blockchain is another technology that FinTech companies can explore to enable automatic payment processing in ERP systems. Oracle Netsuite, a SaaS company, currently offers an ERP payment system, which is a great reference for the study.*

Keywords *- Automatic payment processing, ERP system, ERP payment system, ERP payment system integrations, ERP payment gateways, Payment portal.*

1. Introduction

As more companies enable online transactions, manual transfers that use outdated legacy systems can be expensive, prone to error, and time-consuming. Therefore, companies need front-end and back-end integrations to enable seamless automated payment processing. This is where an ERP payment system with integrated payment portals, gateways, and functionalities is applied.

ERP is an abbreviation for enterprise resource planning. ERP interprets and manages data collected from various sources, consolidating the data into a single system. For instance, a business company may have three data centers such as human resources, manufacturing, and finance (Oracle, 2020). ERP connects the different sub-sources into a single system containing data from all these sources (Almajali & Dmaithan, 2016). Currently, FinTech providers are offering ERP solutions for financial management with payment integration abilities to facilitate automatic payment processing in ERP systems.

2. History of ERP

The introduction of the ERP as a concept dates back to 1970 when it was aimed at integrating business processes. The term 'ERP' was coined by the Gartner Group and implemented in 1990. Over the past decade, the ERP software solutions market has grown immensely, catering to various business functions and applications. The various steps that ERP evolution has gone through can be termed ERP I, ERP II, and ERP III (Vasilev, 2013).

ERP III builds on ERP I and ERP II by focusing on creating new functionalities for the ERP systems toward integration between the company and other parties, such as customers and suppliers. By integrating pathways for customers and vendors to access and use the ERP systems, a wide space is created for innovative solutions (Vasilev, Julian, 2013). This introduces modern ERP systems and payment integrations.

3. Modern ERP Payment Systems

Initially, ERP systems were upgraded through cloud technology, adding data cloud. Furthermore, digital transformation has led to more advanced features in ERP through newer technologies. Cloud-based ERP was a game-changer. Cloud computing has enabled users to cut costs, specifically software system upgrades and maintenance. For instance, ERP software such as Oracle ERP, Syspro, Sage Intacct, and Netsuite currently in the market use data cloud (Ruhi Umar, 2016).

Artificial intelligence (AI) is one of the technologies incorporated in ERP payment systems, referred to as iERP. AI in ERP helps in faster processing of collected unstructured and complex data. Concurrently, iERP creates a simplified workflow, reduces data analysis time, and reduces errors (Ruhi Umar, 2016).

In addition, technology integrations have enabled real-time data support. The integration of ERP and CRM enables the collection of data such as customer buying history, customer preferences, and favorites. This helps better decision-making on sales opportunities for customer retention

and loyalty (Linchpinseo, 2020). The technology employed in this case is big data analytics.

4. ERP Payment System

Although ERP software covers various business operations, it has modules that focus on specific aspects of a company. Payment systems are one of the modules that handle the business' financial aspects (*Tigernix*, 2023). The finance ERP connects all company operations related to billing, sales, purchasing, payment, and inventory. It collects and manages data such as balance sheets and cash management.

A company's financial management is a significant aspect of the company's growth. ERP finance systems help businesses manage company finances more streamlined and more efficiently (Chandra Natsir, 2023). The main aim of an ERP payment system is to facilitate secure and efficient payment transactions, enabling companies to manage outgoing and incoming payments, invoicing, cash flow tracking, and financial reporting.

4.1. Features of the ERP Payment System

4.1.1. Profit Tracking

This is one of the main tasks handled in ERP financial management. The profit tracking feature assists in evaluating the company's overall financial health and how it is leveraging resources (*Tigernix*, 2023). It keeps track of all business earnings.

4.1.2. Ledger Management

Managing ledgers in an ERP system is a feature that completes the accounting of a company's financial transactions. It connects to various modules in the ERP, including inventory management and customer relationship modules (*Tigernix*, 2023).

4.1.3. Cash Flow Control

The feature manages Cash Flows. ERP oversees all company financial obligations to customers and suppliers. The feature has an accounts payable component that connects the spending information and the company buying system's data to manage cash flows (*Tigernix*, 2023).

4.1.4. Payments Tracking

The feature enables tracking of all clients' payments. Some ERP payment systems include a gateway through which clients can view their invoices to make payments (*Tigernix*, 2023). Through automation, recurring bills and purchases can happen without manual action. Additionally, the system would send automatic payment reminders and account statements.

5. ERP Integrations for Automatic Payment

Automatic payment processing in ERP systems is achieved by integrating the financial ERP system with payment gateways and portals. Recently, businesses discovered that combining ERP software with external automated payment systems improves the performance of financial management systems. Therefore, integrated automatic payment gateways and solutions supplement the ERP finance system accounting modules. Additionally, integrating the ERP software with the eCommerce customer portal increases efficiency and simplifies operations for business employees and customers (Stephen Beer, 2023). For instance, the business can automate invoice sending and allow online bill payment via the customer portal connected to the ERP system. In addition, these invoices can be sent or paid at any time from any location. Hence, customers are more likely to find it easy to do business with a company that has automatic payment integrations.

Customer payment portals and ERP integration facilitate the transmission and sharing of information between two systems. The customer portal can request information stored in the ERP system when needed. For instance, a customer can log in and request information like a quote, purchase order, or invoice to make payments instantly (Stephen Beer, 2023). Concurrently, when a customer updates data through the web portal, the information is automatically updated in the ERP system.

A FinTech solution that is at its exploration stage to further improve automatic payment processing in ERP systems is the integration of ERP with blockchain technology.

5.1. Blockchain in ERP

According to Elias (2011), one of the disruptive FinTech innovations that has been researched on the blockchain in ERP concept is the Tripple-entry Accounting. In Tripple-entry accounting, blockchain technology is used to enable the recording of accounting records from different parties to a transaction. Additionally, smart contracts are used, and entries are protected through a third record within the blockchain space. This method eliminates the possibility of manipulation or human error in accounting records. As a result, a company will have reliable and high-quality financial statements, significantly preventing financial scandals (Grigg, 2005). The characteristics of blockchain technology, including immutability, increase the reliability of recorded financial information while eliminating the need for costly and time-consuming audit processes (Jun Dai et al., 2017). In addition, with the data encryption that blockchain offers, the privacy of a company's confidential information is protected. Only participants with the password key can access the information needed (Dai et al., 2017).

A blockchain with smart contracts can be integrated with ERP payment systems to enable real-time financial transactions. Smart contracts are self-executing and programmable, performing terms and tasks as programmed (Kitsantas, Thomas, 2022). For instance, for recurring bills or monthly subscription payments, a blockchain can trigger

automatic payments using smart contracts at specific dates or when a specific term is realized (for example, every 30 days). These transactions happen without the need for intervention by a third party.

Concerning the concept of blockchain integration with ERP, Morteza and Ghadi (2022) suggest two modules for the ERP payment system: Autopay and auto-receive. In Autopay, when smart contract terms are presently met, a purchase order in line arrives, and the payment process is initiated automatically. If a condition is not met, for instance, a customer cancels a subscription, payment is automatically revoked, and the contract is marked completed. Blockchain merges accounts payable transactions with the movement of money. Similarly, Auto Receive involves the company making automatic payments, such as salaries or suppliers. When an order is delivered, the terms of a contract are met, and the company receives an invoice. Then, the payment process is initiated automatically. In case the supplier or employee fails to fulfill any set terms, the process is automatically terminated.

6. ERP Payment Systems Currently in the Market: Netsuite ERP System

Oracle Netsuite is among the most known ERP software vendors and is currently the largest provider of cloud ERP. The company has a significant share of the ERP products market (Valashani & Abukari, 2020). Netsuite has over 19,000 clients using the Netsuite ERP across over 200 countries. This makes Oracle Netsuite a company that offers software-as-a-service (SaaS) with a complete set of cloud-based applications. The services include ERP, financial management, Human resource management, CRM, services automation, and omnichannel commerce.

In terms of financial management, Netsuite offers a cloud-based ERP system designed to enable simplified and automatic payment processing. It integrates an accounts payable function that automates payment approvals, making payment processing efficient (Chandra Natsir, 2023). Additionally, it integrates with various payment gateways, allowing businesses to accept secure payments from diverse sources.

In addition, this ERP payment system enables the generation of financial reports through a web application. The application uses cloud computing to store transaction data; the transactions are recorded automatically and stored in applications on the ERP network (Wulandari & Maulana, 2023).

Some modules included in the Netsuite ERP payments System of a Logistics company include:

6.1. Procure To Pay

The module provides functionality for carrying out transactions such as purchase requisitions and bill payments.

6.2. Purchase Order

A purchase order is created when there is a specific price agreement (which means a particular vendor has been selected through a structured approval matrix). A purchase request has been made (which has been approved) (Wulandari & Maulana, 2023). One purchase order can have multiple receipt items, often referred to as partial receipts.

6.3. Item Receipt

This is a document that is automatically recorded in Netsuite when goods and services are received. An item receipt form is generated, and accounting receives services or goods orders made.

6.4. Bill Payment

This module involves payment processes related to vendor payments and debts to vendors. Bills that need to be paid are categorized under open bills. Payments can be completely cleared or partially paid (Wulandari & Maulana, 2023). When bills are fully cleared, a paid bill status is created. However, with partial payment, the bill stays under open bill status.

6.5. Inventory Management

The module allows users to manage company inventories. The functionalities in this module include inventory count, inventory adjustment, transfer order, and inventory transfer (Wulandari & Maulana, 2023).

7. SAP, BaaN, and Oracle (JDE) ERP Payment Systems Comparison

One cannot discuss ERP systems without discussing SAP. SAP is a renowned provider of ERP systems and was one of the first companies to create ERP technologies. It was founded in 1972. Oracle is currently one of its main competitors. The top ERP vendors in the market include SAP, Oracle Corporation, BaaN International, and JD Edwards & Company. Below is a table comparing the solutions offered by the different companies:

Oracle NetSuite	**JDE**	**SAP**	**BaaN**
Excellent financial reporting	Excellent financial reporting	Average live financial reporting	Average live financial reporting
Provide 24/7 user support.	Provide sufficient user support.	Provide sufficient user support.	Provide sufficient user support.
User-friendly	User-friendly	Complicated; it takes a lot of time to learn	Simple and Plain User Interface.

Enable automated payment processing through third-party solutions	Enable automated payment processing through third-party solutions	Enables credit card processing for automated payments	Enables automatic invoice payment processing.
Saas model	Both SaaS and On-premises deployed	Both SaaS and On-premises deployed	
Focused on Accounting & Finance	Have finance and accounting features.	Multifaceted, but all ERP systems have finance and accounting features.	Multifaceted, but all ERP systems have finance and accounting features.
Offers intercompany and financial consolidation	Offers intercompany and financial consolidation	Has no in-built support for intercompany and financial consolidation	
Allows integration with external third-party solutions.	Allows integration with external third-party solutions.	Allows integration with only other SAP solutions	Allows integration with external third-party solutions.

8. Conclusion

The integration of a financial ERP system and automatic payment solutions enables automatic payment processing in ERP. Every business needs an ERP system that can integrate with various solutions, including a variety of payment gateways and payment portals. This will improve customer experience while making purchases from a particular business. Currently, several ERP vendors provide ERP payment systems that allow integration of external solutions and web applications, for example, Sage Intacct and Netsuite. However, more research is required on the implementation of the ERP systems and the integrated payment solutions. Additionally, more case studies need to be conducted to assess the efficiency and suitability of the ERP systems for future developments.

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