

# Case Study of Enterprise Resource Planning System Implementation in Small Medium Business

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## Abstract

With the ERP systems are applications to business operations including, production planning, manufacturing, purchasing, marketing, human resources into a number of modules or functions. These modules and functions are data-integrated and functional processes so that business and administrative processes in the company can be carried out Utility. This ERP project implementation process method consists of guidelines to help the project team manage change, offering the completion of tools for practitioners to direct resources accordingly and maximize benefits so as to achieve the expected results, optimizing the capabilities of the ERP system and avoid unproductive expenses and expensive. These modules include: supply chain management, accounting and finance, human resource management, customer relationship management, inventory management, material management, logistics, maintenance, sales, production, distribution, procurement, asset and cash management, financial accounting, strategic planning, quality management.

## Keywords

Case Study, Enterprise Resource Planning, Small Medium Business, Strategic planning

## 1. Introduction

During the current COVID19 pandemic, digital marketing has made MSMEs even more aggressive in the offline and online marketing process. Therefore, a design and formulation in the development of local potential is needed, especially digital financial applications for MSMEs. Take advantage of the COVID-19 condition to seize the opportunities that exist, because in the current pandemic era it changes human lifestyles and orders. People today are more interested in finding and buying things online using existing marketplaces and social media. By using this media, it helps MSMEs in marketing their products to consumers. Social mapping is needed to find out the entrepreneurial potential of one of the marketing media that is currently in great demand by the public to support various activities carried out. They gradually began to leave the conventional/traditional marketing model. Switch to modern marketing, namely digital marketing. With digital marketing, communication and transactions can be done any time / real time and can be global or global. With the large number of chatini-based social media users and increasing number of opportunities for MSMEs to develop their market online using websites and social media as an internet-based application group that uses Web 2.0 ideology and technology, where users can create or exchange information on the application. Some of the social media that are very popular and have millions of users in Indonesia are Facebook, Twitter, Instagram, Youtube, Blogs, and others. Social media allows users to communicate with millions of other users. ERP application the app will provide combined benefits to their employees working in different locations departments such as finance, human resources and warehouse due to the uniformity of the platform. In the normal scenario, each department has its own special independent computer system programmed to perform a specific set of activities related to the department. This independent systems can help with coordination and intercommunication issues across different departments. ERP applications enable and provide solutions by combining activities and create one integrated database, allowing different departments to access and share valuable information consistently. The

literature considers ERP applications being the most innovative development in the ICT sector, yet due to their complexity and significant business process change and infrastructure requirements, ERP applications are considered an expensive alternative. ERP systems provide data integrity, interface uniformity and integration that are critical deliverables for timely and accurate information for reporting. The literature argues differently on the history of ERP, as some researchers believe ERP as an extension of MRP and MRPII while others do not accept this notion. ERP applications are either vendor based standardised applications or an open-source application, developed to meet specific sector requirements. Major players in ERP include SAP, Oracle Corporation (PeopleSoft, J.D. Edwards) and Microsoft. ERP applications comprise different modules and each module provides specific organisational functions such as, financial management, human resource management, customer relationship management, material management, logistics, maintenance, sales and distribution, warehouse management, procurements, asset and cash management, project management and so forth. These functional modules provide an integrated service to the organisation using a GUI interface and are hosted on central RDMS. ERP systems have an ability to provide accurate and timely reporting for effective decision making that is considered to be an important business requirement.

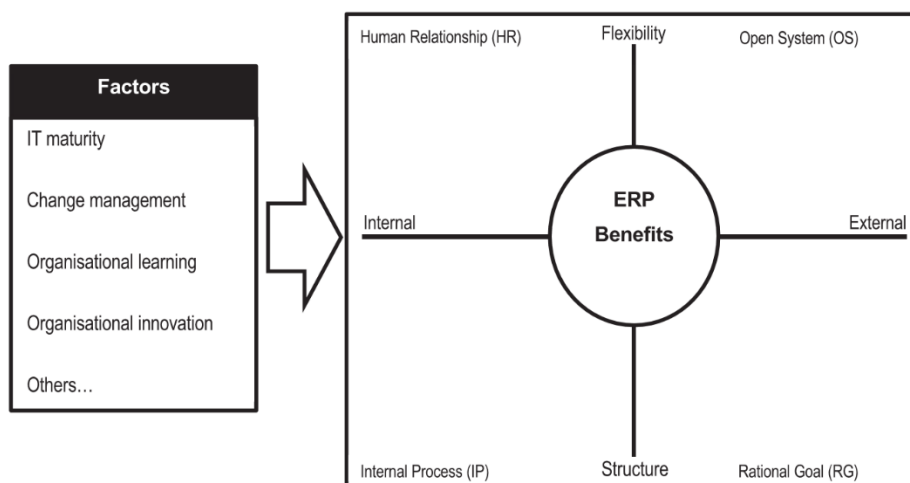


Figure 1. ERP design system

ERP systems offer adopting organisations the prospect of increased work productivity and operational efficiency. Yet its implementation is costly and resource intensive. The evaluation of ERP system benefits is important to justify the investment made. Equally, it is important for adopting organisations to understand what forms of implementation efforts are required to optimise their ERP system performance. Current literature on ERP system benefits overly focuses on performance-based metrics, financial, operational or balanced scorecard. The literature review suggests that organisational inertia & change management, IT maturity, organisational learning and organisational innovation are crucial factors impacting on ERP implementations, that may further enhance or inhibit the benefits derived from ERP system. Due to the situational nature of ERP implementations, this research employs contingency theory complemented by CVF as a theoretical lens to examine the implementation process of ERP projects and its associated outcomes. There is a lack of understanding on the manner in which organisations deal with issues known to affect ERP implementations to obtain the anticipated ERP benefits. The proposed framework offers an analytical base to assess the manner in which the contingent factors contribute to ERP system benefits realisation, including the range of benefits that could be derived post ERP implementation. While making adoption decisions for ERP applications, organisations generally tend to identify their business and technology needs to establish a business case. Haddara and Zach (2011) conducted a comprehensive literature review on ERP adoption in small and midsize business and argued that the current literature on ERP adoption has several issues in relation to the midsize business context. To understand and evaluate the adoption and ERP selection process, many case studies identified factors that could influence ERP application selection in small and midsize businesses. Organisational factors such as business complexity, change management, external factors (like supply chain partners) and networking pressures could be considered important for the selection decision. While other studies suggest that cost drivers, business functional

requirements, flexibility and scalability and the degree that ERP can align itself to existing businesses process could also be influential factors for selection decisions.

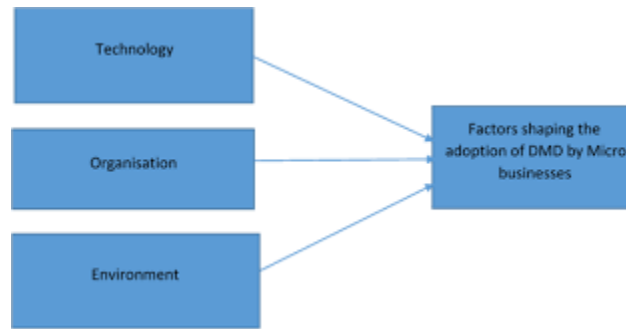


Figure 2. TOE Framework

As outlined in Figure 2, some researchers have adopted a TOE framework for the purpose of developing a model that could help predict midsize business adoption of ERP applications. Additionally, adoption of enterprise systems by midsize businesses is generally influenced by internal organisational and technological factors instead of the industry and/or market-related factors. In contrast, with reference to another study, Haddara and Zach (2011) argued that with the higher rate of collaboration amongst midsize organisations, businesses are likely to adopt enterprise applications due to environmental factors. BRW conducted a survey that showed that most Indonesian midsize businesses were unaware of the advantages of technology and were focused more on sales and revenue generation. This was considered to be a major concern for Indonesian economic development, given such short-sightedness. Haddara and Zach (2011) provided an insight into potential adoption decisions in India, suggesting that the business needs or requirements along with competition in the market, survival and the desire to retain customers could be a few of the drivers influencing midsize businesses to adoption ERP. Furthermore, a pre-adoption framework was discussed that was developed for the purpose of evaluating the suitability of ERP applications in terms of business requirements, business process complexity, level of change that a company could endure and the cost of ERP implementation. Free opensource ERP applications in comparison to vendor delivered branded ERP systems are likely to have less cost dependencies. Business complexity could be considered to be a weak ERP adoption predictor in comparison with business size being strong predictor (Haddara & Zach, 2011). In addition, the willingness of midsize businesses and their readiness for adoption could be affected by their type of industry such as, manufacturing, retail, customer services and so forth. Other evidence suggests that the financial scarcity, resourcing and business size could be other crucial factors potentially influencing ERP selection by midsize businesses.

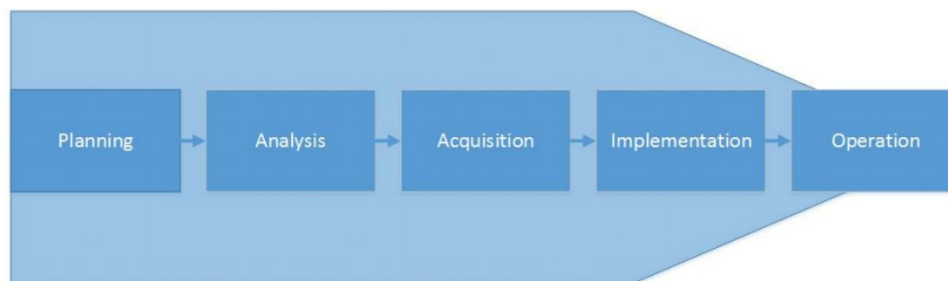
## 2. Research Method

ERP life-cycle model comprising six phases and four dimensions. The phases presented by Esteves (1999) include: adoption decision, acquisition, implementation, use and maintenance, evolution, and retirement. Dimensions represent the different point of views through which each phase should be analysed. These are: product, process, people and change management. The phases of the ERP life-cycle model in more detail are:

1. Adoption decision phase consists of the definition of system requirements, the goals and benefits and analysis of the impact of adoption at a business and organizational level.
2. Acquisition phase consists of product selection in accordance with business requirements, identification of customisation requirements, and selection of an implementation partner. Factors to consider in this stage include product and implementation cost, training and maintenance services, and contractual agreements.
3. Implementation phase comprises acquiring the ERP application package, with or without customisations. In this phase, external contractors became involved to implement and provide know-how/knowledge of the application and training.

4. Use and maintenance phase comprises of using the product and gaining benefits with minimal disruption. In this phase, aspects to consider include functionality, usability and adequacy to the business process after system implementation. System maintenance and fixing in case of malfunction and general system improvement/upgrade are included in this phase.
5. Evolution phase includes integration of capabilities in the new system, materializing new benefits and expanding new frontiers for external partner collaboration.
6. Retirement phase corresponds with the stage when managers decide if they will substitute the ERP software with other information system approaches that are better suited to organisational needs. In addition to the phases of the ERP life-cycle, the four dimensions are described as follows:
7. Product: refers to aspects relating to the ERP product such as its functionality, technical features, hardware, software needs, etc.
8. Process: refers to the pre-existing core capabilities and functionalities of an organisation that need to be supported by the ERP system. There should be a consideration of business process re-engineering, conversion of existing processes to new business process or functional requirements of the ERP application for optimal performance.
9. People: refers to human resources, their skills, roles and capabilities within the organisation. Roles or skills are required to minimise the impact of ERP implementation, to manage its complexities and facilitate organisational change. This includes contingencies, change in practice and adopting new structures along with learning a new culture in organisation.
10. Change management: refers to the body of knowledge used to address complex change brought about by ERP implementation. Change management ensures acceptance and readiness of a new system for its optimal use in the organisation.

Reengineering of the existing business processes became intricately part of the implementing a number of ERP system modules, not all the functionalities and applications were planned to be utilised. The ERP system modules that were installed contained a set of industrial “best practices” and processes that were not considered during the ERP system project initiation. The early stages of the ERP system implementation focused primarily on financial workflows, processes and reporting.



*Figure 3. ERP System planning*

ERP system manager claimed that not all functionalities and applications found in the modules that have been installed were utilised. There is still potential for improvement by reviewing the ERP system performance and identifying what can be changed to conform to the ERP system’s practices.

### **3. Results and Discussion**

the result of several changes / changes to the existing factors, most of the factors that have been previously identified include, user analysis, support base for applications, thus adding a new factor to team management and control as well as reposition some of the factors listed below such as, outline the matrix for team competence, develop training strategies and so on. In addition, there are factors that are suggested to be and transferred from another stage to the people domain with some new factors to be proposed from different participants. The factors recommended to be moved elsewhere in the model are: conflict resolution procedures, analysis of realistic end-user expectations (at least or nothing) adjustment, resources include skills, developing communication strategies, developing conflict resolution procedures and develop knowledge management strategies. The factors proposed by the participants were: a plan to test and identify staffing needs, develop test strategies, test plans, test scenarios and test case records on resources

with details of the utilization of staff allocation on the project for knowledge transfer, internal and external team engagement planning, developing test strategies, identifying key business users – testing resources, identification of key business staff for UAT and contract signing so as to finally build stage gate – baseline and work results.

Table 1: Result Implementation stage amended after case study analysis

Domains	Planning stage (Before Case study)	(New factors or changes as recommended)	Planning stage (After Case study)
Technology factors	<ul style="list-style-type: none"> <li>• Selection criteria with relevant parameters</li> <li>• Accurate information on ERP applications</li> <li>• Less reliance on sales advice</li> <li>• Time &amp; Cost of implementation</li> <li>• New technology adoption issues</li> <li>• Industry standards</li> <li>• Proposed application System architecture analysis</li> <li>• Technical staff/consultant expertise</li> <li>• Realistic “end user” expectation analysis</li> <li>• Identify value stream for organisation</li> </ul>	<ul style="list-style-type: none"> <li>• Technical requirements identification</li> <li>• Technical requirements analysis</li> <li>• Decision on Testing Tools – QC (QA, QM protocols set)</li> <li>• Data Migration Strategy development</li> <li>• Data migration strategy communication &amp; feedback</li> <li>• Plan for testing and identify Tools required for Testing QC</li> <li>• Planning Decisions should be Made</li> <li>• Engage with partners</li> <li>• Define compatibility issues with other applications</li> <li>• Identify Applications for Integration</li> <li>• ERP complexity management planning</li> </ul>	<ul style="list-style-type: none"> <li>• Selection criteria with relevant parameters</li> <li>• Less reliance on sales advice</li> <li>• New technology adoption issues</li> <li>• Mobility, HA, Complexity, network</li> <li>• Proposed application System architecture analysis</li> <li>• Technical staff/consultant expertise</li> <li>• Realistic “end user” expectation analysis</li> <li>• Technical requirements identification and analysis</li> <li>• Plan for Testing                             <ul style="list-style-type: none"> <li>o Decide on Testing Tools– QC (QA, QM protocols set)</li> </ul> </li> <li>• Engage with technical stakeholders</li> <li>• Identify Applications for Integration</li> <li>• Compatibility issues with other applications</li> <li>• Establish infrastructure strategy – Technology requirements</li> </ul>

Table 1 shows the “Implementation stage” factor at the end of the first phase of data collection. At the end of this section, the revised design phase factors will be presented; by case study feedback. The data obtained from the case study analysis are presented in four category. the purpose of the stage would be to gather requirements, complete functional design and identify gaps in the solution for potential customisations Compatibility issues with other applications and their requirements must be carried out at the end so that the practicality of the solution will be completed at the final stage will make it easier on projects and systems

#### 4. Conclusion

ERP implementation has been described as unique and different from other software implementations due to its strategic impact over business. There are number of attempts made to produce an effective model, providing an appropriate strategic direction for large enterprises while implementing sophisticated business applications. Successful ERP implementation the platform does not imply that the business benefits will be generated automatically is acceptance and effective utilization of functionality in ERP systems that provide businesses with multiple model changes to ERP.

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