ERP System Adoption Analysis Using TOE Framework in Permata Hijau Group (PHG) Medan

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ABSTRACT

In this research, employee adoption intention is important consideration of successful ERP system implementation. The purpose of this research is to identify the important factors in Technology-Organization-Environment framework that affect ERP system adoption’s intention. Online survey data were collected from 175 employees with active status from each department who had used ERP in PHG, Indonesia. The research data was collected through simple random sampling method and applying SEM in AMOS 24. The results of this article proves that technology readiness, organization size, and external support significantly influence ERP system adoption intention. Compatibility, relative advantage, complexity, top management support, business operation, and competition pressure have no significant influence on ERP system adoption intention. Thus, it can be concluded that ERP system adoption’s intention is important to enhance corporate competitive advantage. Adopted ERP system can be developed continuously by involving employees to achieve information technology and business strategy within company.

KEYWORDS
Adoption Intention, Business Operation, Compatibility, Competitive Pressure, Complexity, ERP, External Support, Organization Size, Relative Advantage, Technology Readiness, TOE, Top Management Support

INTRODUCTION

There are many ERP (Enterprise Resource Planning) systems development which being implemented currently as one of IT (Information Technology) strategies. ERP systems are often being called as a set of software packages that support each other through process-oriented information platforms where the operational activities inside is for achieving organizational effectiveness and efficiency. ERP system helps the company on integrating every business process thus its productivity level can increase (Poba-Nzaou & Raymond, 2013) (Nwankpa, 2014). ERP system involves many different business areas, such as manufacturing, human resources, financial, sales, and other areas (Boza, Cuenca, Poler, & Michaelides, 2015). The ERP system implementation can provide competitive advantage value but also has a high risk to the company.

In terms of technology, the ERP system features complexity level is one of the biggest failures where the system’s user has to understand each ERP system features function at first before they are actually using it. This thing has an influence on information system infrastructure’s composition. The compatibility level between ERP system technical components which is developed through enterprise resources management does not have maximum synchronization. Consequently, the company should

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reconsider ERP system benefit when the system has disruption. In terms of organization, company must be able to deal with business issues occur within organizational structure that will affect the ERP system implementation. Lack of employee involvement on conducting operational activities within the company may result in less organized management decision-making process. Furthermore, the company large scale and business processes complexity can become problems when company develops ERP system. Consequently, the company become less control over the business process sustainability because the transactions that need to be processed becomes more. In terms of environment, the tight global competition requires faster and real-time information distribution. By the time, the company’s competitors are growing fast with the support of ERP system where more detailed information can be obtained by competitors. It becomes one of the company’s requirement to implement an ERP system in a short time. Company’s external parties (such as investors, and other stakeholders) who are less supportive to an ERP system development can lower the business performance and value within the company. Hence, ERP system adoption’s intention plays a critical role within the successful ERP system implementation.

One of the palm oil processing companies that implements the ERP system is PHG (Permata Hijau Group) which located in Medan, Indonesia. The company hasn’t found a strong reason for employees to adopt the ERP system. Thus, TOE (Technology-Organization-Environment) modeling is appropriate to analyze the importance of ERP system adoption within the organization (Awa, Ukoha, & Emecheta, 2016), such as PHG. This TOE modeling involves technology, organization, and environment aspect that must be considered in IT strategy achievement which is aligned to the business strategy in PHG.

The questions which will be answered as the problem formulation within this research is whether the technology context affect the ERP system adoption’s intention? Does the organizational context affect the ERP system adoption’s intention? Does the environmental context affect the ERP system adoption’s intention? Hence, this research study aims to identify the important factors that affect the ERP system adoption’s intention in PHG Medan.

LITERATURE REVIEW

ERP System

According to Davenport (2000), ERP system is one part of the information system aspect. ERP system is designed to integrate and optimize the transactions and business processes sustainability within the organization which involves many different business areas (Hadidi, Assaf, & Alkhiami, 2017), such as manufacturing, human resources, finance/accounting, sales and other areas (Boza, Cuenca, Poler, & Michaelides, 2015). In fact, ERP system is defined as a complex software package in which its components integrate information with business processes within the organization’s functional business areas (Nwankpa, 2014).

ERP system implementation has an important IT investment value in which the organization not only utilizes technical resources but also the relationships that entwine organizational fit between the ERP system itself and the organization’s business functions so that the organization is able to identify and apply innovative applications (Nwankpa, 2014). The ERP system implementation is similar to “engineering project” concept which involves cross-functional team and consultant cooperation, coordination of technical activities and human resources behavior within the organization (Leu & Lee, 2016). According to Erat (2006), ERP system implementation requires knowledge sharing. The information distributed and data classification within the organization further leads to transparency (Al-Jabri & Roztocoki, 2015). It focused on the ERP system development that are more easily accepted by all management. ERP system allows operational decision making with data access in the organization (Stair & Reynolds, 2016). To optimize decisions, companies can customize or configure ERP systems that result in high implementation costs that increase system complexity (Koch & Mitteregger, 2014).
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