

# Implementation of Cloud ERP

## *Moderating Effect of Compliance on the Organizational Factors*

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Abstract: Cloud ERP has changed the way business can be done for Small and Medium Enterprises (SMEs). The two important benefits offered by Cloud ERP are: (a) SMEs can log into the internet from any place to access applications and data services at any point in the time. (b) Pay for the services that are used or needed. Although Cloud ERP has taken the IT world by storm and with all the advancement that has taken place so far, there are still issues and challenges that require to be addressed. This paper relates issues pertaining to Compliance with Organizational factors for successful implementation of Cloud ERP.

## 1 INTRODUCTION

Cloud ERP is a buzz word in the IT world and with all the advancement that has taken place so far, there are still issues and challenges that require to be addressed. Compliance issues need to be addressed for Cloud ERP implementation. These are discussed in detail.

## 2 CONCERN IN CLOUD ERP: COMPLIANCE

Compliance plays a vital role in decision making when any business process is moved into the cloud. Companies are not sure about the location of the data stored when it is on cloud. The data which might be safe in one country may not be safe in another country. In America, US Patriot Act gives limitless powers to government and its agencies to access any data. European Union (EU) has enforced strict measures so that cloud service providers can be tried in case of any data theft or breach of laws. The compliance concerns by EU have led to the creation US Safe Harbor Privacy Principles. This insulates European companies from the laws in USA that virtually gave unlimited powers to government agencies to snoop on any data. The issues that revolve around compliance are:

- Cloud based data archiving service should be able to classify, index, search and retrieve data

in a security-rich manner and complying with all government and industry regulations. If the cloud provider is successful in achieving this, then it helps control rising costs of data storage with a utility priced cloud-based service. The cloud user would at all times want to access, search and retrieve data from the cloud. Not able to do so can have an impact on decision making process and operational efficiency (IBM, 2011).

- Cloud based segregation of duties (SOD) can minimize error and fraud occurrences. Any Individual should not have complete security access to a series of transactions which could allow him or her to engage in financial misconduct. Individual can collude with a vendor to (a) receive and pay for fictitious goods or services or (b) pay for services with company's money to be used for personal gain. SOD increases the compliance standards for data and work handling issues but this can negatively impact the business efficiency and also increase costs and staffing requirements. The mission critical elements of the business and sensitive data should be brought under the purview of SOD.
- Global compliance standards and regulations vary from country to country. There is lack of governmental regulations which can impose varying compliance requirements and standards on the industries. In Germany, it is not permitted to relocate auditable information

which can be considered as critical data to a server outside the country. This hosting of information in the cloud outside Germany violates the German laws (Seitz, 2010).

### 3 CRITICAL SUCCESS FACTORS (CSFs) FOR CLOUD ERP: ORGANIZATIONAL FACTORS

Nguyen (2011) has stated that identification of CSF's is important to attain the desired goals laid down by the business. In relation to CSFs for ERP, it can be explained as conditions that can lead to a successful ERP adoption and implementation (Finney and Corbett, 2007).

The success factors for Cloud ERP implementation from an organizational point of view are considered here. These success factors identified by literature review can be better understood by going through the existing theories which will examine the relationship between CSFs and Cloud ERP.

#### 3.1 Contingency Theory

Suggests that organization culture should be conducive for any change to take place effectively. The manner in which any organization reacts to the change can be critical for the successful adoption and implementation of Cloud ERP. The employees should be given adequate training and guidance so that they do not offer much resistance in transitioning to the usage of Cloud ERP. The independent variable **organization resistance** is better explained by this theory. Literature review (LR) which supports this CSF are (Bingi et al., 1999; Holland and Light, 1999; Ross and Vitale, 2000; Mehrtens et al., 2001; Kumar et al., 2002; Zhang et al., 2002; Abdinnour-Helm et al., 2003; Olson et al., 2007; Saeed et al., 2011; Hasibuan and Dantes, 2012, Utzig et al., 2013).

#### 3.2 Knowledge based View

Lays emphasis on the fact that knowledge can be utilized to achieve competitive advantage. The knowledge that is created over a period of time within an organization acts as a repository which can always be referred or even build upon any newer strategy. Independent variables **communication** (Kumar et al., 2002; Grant, 2003; Mabert et al., 2003; Mandal and Gunasekaran, 2003; Somers and

Nelson, 2004; Yusuf et al., 2004; Nah and Delgado, 2006; Hasibuan and Dantes, 2012) and **implementation strategy** belongs to this theory (Bancroft et al., 1998; Davenport, 1998; Cliffe, 1999; Holland and Light, 1999; Trepper, 1999; Davenport, 2000; Gupta, 2000; O'Leary, 2000; Scott and Vessey, 2000; Motwani et al., 2002; Robey et al., 2002; Mandal and Gunasekaran, 2003, Umble et al., 2003).

#### 3.3 Market based View

Determines the nature of any organization strategy based on the trends of the industry's environment. Rivalry between competitors and threat of new entrant are factors which shape up the nature of strategies implemented by companies. A lot of this is also dependent on the budget of the companies which are doing business or wanting to enter the market. Cloud ERP can offer the services at low rates and this fits well within the financial limitations for a SME. **Project budget** is the independent variable that is best explained by this theory (Bingi et al., 1999; Holland and Light, 1999; Davenport, 2000; Al-Mudimigh et al., 2001; Willis et al., 2001; Ribbers and Schoo, 2002; Trimmer et al., 2002; Somers and Nelson, 2004; Ellis, 2010; Hasibuan and Dantes, 2012).

#### 3.4 Social Capital Theory

Stresses upon the various social capital that exists in an organization like the values and goals. These goals and values coupled with effective leadership can lead to successful implementation of Cloud ERP. **Strategic goals and objectives** as an independent variable explains the importance for successful implementation (Buckhout et al., 1999; Akkermans and Helden, 2002; Al-Mashari et al., 2003; Mandal and Gunasekaran, 2003; Somers and Nelson, 2004; Calogero, 2000; Pabedinskaite, 2010, Hasibuan and Dantes, 2012).

#### 3.5 Strategic Choice Theory

Focuses that the people of an organization can shape the environment around them. If the environment in the organization is nurtured in a way where the existing as well as new projects can be executed without much delay, then the transition to a newer ERP system and its implementation would never pose any problem. For this, the company should be comfortable in shaping up the existing processes in a different manner. The independent variables

considered here are **Business Process Re-engineering (BPR)** (Bingi et al.,1999; Holland and Light, 1999; Bernroider and Koch, 2000; Al-Mudimigh et al., 2001; Kraemmergaard and Rose, 2002; Palaniswamy and Frank, 2002; Trimmer et al., 2002; Zhang et al., 2002; Al-Mashari et al., 2003; Mabert et al., 2003; Muscatello et al., 2003; Bajwa et al., 2004; Hasibuan and Dantes, 2012) and **project management** for successful Cloud ERP implementation (Hoffer et al., 1998; Trepper, 1999; Nah et al., 2003; Akkermans and Helden, 2002; Zhang et al., 2002; Umble et al., 2003; Somers and Nelson, 2004; Bhatti, 2005; Nah and Delgado, 2006; Hasibuan and Dantes, 2012).

#### 4 MEASURING SUCCESS

The biggest beneficiaries out of Cloud ERP implementation will be cloud user. The cloud provider aim will be to beat the competition and generate more and more revenue. This can happen by adding more clients to their existing user base and also convincing companies who have never used ERP solution to switch to an affordable service. But this is directly related to the user acceptance and usage of Cloud ERP services. While there can be different viewpoints about the measure of success, an a-priori framework is proposed which will qualitatively address the research objective. This framework is based on intuition and using previously published literature on ERP and Cloud ERP.

From the viewpoint of a project-manager; time, cost, productivity, and customer satisfaction are the main ingredients of any project’s successful completion (Schwaber and Beedle, 2002; PMI, 2004; Parthasarathy, 2007).

Based on balanced scorecard terminology (Kaplan and Norton, 1996), following are the success criteria taken for this study:

- S1 Lower Implementation Cost
- S2 Ease of Use and Reporting
- S3 Lower wait time for consumer
- S4 Increase in Customer Retention
- S5 Increased Ability to meet with Current User Requirements
- S6 Increased Flexibility to meet with Changing User Requirements

These criteria form the constituents of the dependent variable (“Success”) in this paper.

#### 5 RESEARCH OBJECTIVE

- RO 1 Development of a framework with the different determinants of compliance for the successful implementation of Cloud ERP.
- RO 2 To establish and verify the role of Compliance on the organizational factors for successful implementation of Cloud ERP.

#### 6 VARIABLES IN THE MODEL

- Independent Variable: Organizational Factors
- Moderating Variable: Compliance
- Dependent Variable: Cloud ERP Successful Implementation

#### 7 CONCEPTUAL MODEL

Moderating Effect of Compliance on the Organizational Factors in Cloud ERP Implementation can be seen below.

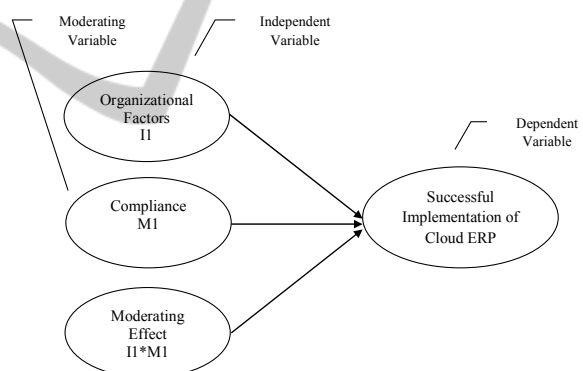


Figure 1: A-Priori Conceptual Model.

#### 8 CONCLUSIONS

This paper brings out a conceptual model based on the literature review as well as various theories which tries to establish the link between CSFs and Cloud ERP implementation. This model can be empirically tested so that it can be used as a tool for assessing the implementation of Cloud ERP.

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