

## Chapter 4

# Emergent Theory for Enterprise Resource Planning Upgrade Decision: A Multiple Case Study

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### **ABSTRACT**

*This chapter is based on four case studies and the findings are based on three rounds of qualitative data coding. This study finds that the type of business benefits expected to be derived from an ERP upgrade project, and the similarities between a firm and a new ERP system business processes have a strong impact on an ERP upgrade decision. Strategic business benefit has a relatively high impact on the upgrade decision than the managerial and operational business benefits. In contrast, symbols attached to an ERP system and top management supports are not salient factors influencing the ERP upgrade decision. However, based on further analysis of the pattern-matching of cause-effect relationships tested in this study, this research suggests that top management supports are necessary but not a sufficient factor to justify for an ERP upgrade, when there are lack of strategic business benefit incentives and similarity between a firm and a new ERP system business processes. This also indicates that ERP upgrade decisions are made rationally rather than habitually and socially defined.*

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## **INTRODUCTION<sup>1</sup>**

Enterprise Resource Planning (ERP) upgrade is one of the major activities in ERP maintenance ‘iceberg’ (Ng, 2011). ERP upgrade, from the ERP-clients’ perspectives, requires extensive attentions and efforts. But, on-going business improvement and benefit-realization are necessary for this kind of enterprise system (Seddon, Calvert, & Yang, 2010). This is in-line with the initial reason, for organizations to embark on lengthy, expensive and stressful ERP projects in the first place (Panorama, 2017). However, according to the latest Panorama’s 2017 ERP market survey, 37% of ERP client-organizations realize less than half of the anticipated business benefits and only 45% of them recoup their ERP software investment costs within three years (Panorama, 2017).

ERP market is reaching maturity, therefore the vast majority of the installed base are typically in ERP upgrade cycles (Jimenez & Lee, 2011). Even though a typical ERP upgrade cycle is between five to seven years (Acumatica, 2010), some organizations will put off their ERP upgrade project in order to wait for the return on investment from previous investment (Paul, 2008). This issue gets worsen considering the fact that conducting an ERP upgrade project is risky as it has a higher total cost of ownership and uncertainty with unproven fresh solutions, such as SAP S/4 Hana, Oracle Cloud and Microsoft Dynamics 365 (Kimberling, 2017).

Prior researches in ERP upgrade can be broadly divided into practice-oriented and theory-oriented research outcomes. Practice-oriented studies, typically meant to prescribe what to do, focus on issues such as critical success factors (Nah & Delgado, 2006; Olson & Zhao, 2006) and best practices (Beatty & Williams, 2006; Herschberg, 2004; Paul, 2009). On the other hand, theory-oriented output studies, i.e. theory-building in particular, are focussing on explaining why an ERP upgrade phenomenon happened, (Khoo & Robey, 2007; Ng, 2006, 2011). However, most of these theory-testing papers merely propose theoretical frameworks useful to understand this phenomenon but they have not provided sufficient empirical findings to support or refute the proposed research frameworks.

As a result, we know very little about ERP upgrade decision, and there is a paucity of empirical evidence and theory in the field of ERP upgrade decision (Dempsey, Vance, & Sheehan, 2013; Law, Chen, & Wu, 2010). An ERP upgrade decision is defined as “a decision made which results in the installed old ERP version (partly or as a whole) being replaced by a newer version either from the same or different vendor’s product,” (Ng, 2011). Thus, this study is meant to provide some empirical data: (1) to support (or refute) the suitability of previously proposed concepts for ERP upgrade decision, and (2) to offer more generalizability power and enhance prior ERP upgrade decision concepts developed from case studies. The research questions

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