



Strategic alignment of ERP implementation stages: An empirical investigation

Oana Velcu*

Hanken School of Economics, (PB 479) Arkadiankatu 22, 00101 Helsinki, Finland

ARTICLE INFO

Article history:

Received 6 November 2007
 Received in revised form 23 October 2009
 Accepted 19 January 2010
 Available online 29 January 2010

Keywords:

Business strategy
 ERP strategy
 Strategic alignment
 ERP systems implementations
 Balanced scorecard

ABSTRACT

We applied the notion of strategic alignment to ERP system implementation and used a balanced scorecard approach to analyze business performance. The PLS analysis showed a positive association between realized strategic alignment, shorter and more cost efficient ERP projects, faster reaction times to business events, and the benefits of ERP systems. While each stage of ERP implementation has its inherent intricacies, we concluded that there was a substantial interdependency between the stages of ERP implementation and the success factors in one stage influencing the success of another.

© 2010 Elsevier B.V. All rights reserved.

1. Introduction

There is a substantial body of existing literature on the relationship between IT and business performance [16,17]. Many papers have suggested that IS investments impact the bottom-line but it has been difficult to show this empirically. There are still gaps that need further investigation of factors that may leverage their financial impact. Questions still remain: what kinds of process changes and to what extent should they be implemented to improve the bottom-line performance? What are the IS investment related factors on which companies should focus so that the investments pay off?

A global provider of market intelligence and advisory services for IT and consumer technology markets, International Data Group (IDC), found that global spending on ERP systems increased at an aggregate annual rate of 13.5% between 2001 and 2006, reaching \$187 billion in 2006 while a later study anticipated a 5% annual growth from 2006 to 2010.

Some studies investigate the alignment of business and IS strategies as an organizational factor with leveraging effect on business performance [2,3,11]. In addition, some factors that aided the integration of IS were considered critical, because they increased the effect of IS on business performance: project management, organizational adaptation, and package adaptation [1,5,8,14]. However, researchers had not examined the role of strategic alignment on the success of ERP implementations. ERP

systems combine business processes and IT technology of the implementing organizations in order to ease the flow of information through business functions. Nowadays ERP systems provide the business infrastructure in a large percentage of organizations, and any change in business strategy needs to be supported by the ERP system. Thus, if a company decides to change its strategy due to pressure from competitors and intends to ensure that customers receive the products within a specified time, then it must make sure that the ERP system provides such information during the distribution process.

A company implementing an ERP system: (1) may need to make changes to its business processes and procedures, (2) customize the ERP system, and (3) become dependent on the ERP vendor for support and updates. The first two characteristics apply to the project stage of ERP implementation; the third applies for the whole ERP lifecycle. The business process changes resulting from the ERP system customizations need to fit the organizational processes to the ERP system, and may be critical in successful use of the ERP system after its go-live stage.

Success stories of ERP implementations have emphasized process efficiency as a success measure. For example, Southern Book Company observed a 10% increase in margins and a doubling of revenue since implementing Compiere, an open source ERP system. The company attributed this growth in performance partly due to improvements in the order, inventory, and invoicing processes. The link between business process changes induced by ERP implementations and business performance still needs to be empirically investigated.

After the go-live stage, ERP implementations require a continuous improvement effort that involves alignment between

* Fax: +358 9 431 3395.

E-mail address: oana.velcu@hanken.fi.

the latest requirements of the business model and the update/change to the ERP software. While previous papers on ERP implementations have identified proxies to measure the success of the implementation at each stage, there are few empirical analyses of the relationships between these measures. Success at one stage increases the likelihood of successfully managing the ERP system at the following stage; indeed a failure at an early stage may imply failure of the project as a whole. Thus it is worthwhile studying the links between the success measures of each stage of ERP implementation.

ERP systems may make an increased contribution to business performance when implementing companies strive for alignment between their strategic needs and the ERP system. Therefore, the aim of our study was to test the interrelations between strategic alignment, the management of ERP implementations, the process changes and the business performance of companies implementing ERP empirically.

2. Strategic alignment conceptualization

Strategic alignment implies that the implementation of the organization's IS aligns with and develops the business strategies and organizational goals. Strategy literature differentiates between the concepts of *planned* and *realized* strategy, emphasizing the importance of analyzing not only what companies plan but also what results. The strategic intent is the official strategy that is documented. The realized strategy is reflected in the collection of managerial choices that are implemented and the decisions made so that the employees' actions should achieve the desired business goals.

Three questions have been asked about conceptualizing and measuring a business strategy:

- (1) Should the strategy definition distinguish between *means* and *ends*?
- (2) Should the construct be defined at the corporate, business, or functional level?
- (3) Should the definition have a functional focus, such as marketing or manufacturing, or a broader perspective?

The answers formulate the realized strategy consisting of patterns of resource deployments to achieve the goals at the business level across a broad perspective.

Six dimensions of strategic orientation that are not industry specific, are:

- Aggressiveness—the allocation of resources to improve the organization's market positions faster than its competitors.
- Analysis—the decision-making behavior of organizations, to achieve internal consistency in resource allocation, and to the use of appropriate management systems.
- Defensiveness—the behavior of companies that focus on cost reduction, efficiency seeking methods in defending core technologies.
- Futurity—the idea of a desired future, key strategic decisions that have either a long- or short-term focus.
- Proactiveness—involvement in emerging industries, continuous search for market opportunities, and trying out potential responses to a changing environment.
- Risk aversion—reacting to possible risks in resource allocation decisions and the choice of products and markets.

These were the factors to which, the *strategic orientation of business enterprises* (STROBE) method was developed and validated.

The intended and the realized views were applied to the strategic alignment concept also; in our experiment, the focus was

on the *realized view* of strategic alignment as it is assumed more appropriate, because the intended strategies may not have been applied for the actual system.

3. Theoretical framework

Byrd et al. [3] found that alignment between business and IS strategies was important in achieving business performance gains. They used both the planning and realized views of strategic alignment and found that the coordination of the planning processes of strategic alignment and the realized process of strategic alignment had a leveraging effect on the relationship between IT investment and firm performance. However, within the ERP context, the leveraging effect of strategic alignment was not tested.

Dehning and Richardson [6] proposed a framework for guiding future research in the evaluation of IT business value. It described three ways of measuring investments in IT: IT spending; the type of IT strategy, the type of system; and IT management, the degree of success with which companies used IT. Based on this framework, research opportunities were assumed to include the relationships between *IT* and *business processes* and *business processes* and *bottom-line performance*. This original framework can be extended to consist of the effect of strategic alignment on IT business value. Thus, we assumed an enlarged framework as shown in Fig. 1. In this, the IT investment was ERP systems. The alignment between ERP strategy and business strategy and the motivations of management for implementations were considered determinant factors for the degree of success of ERP implementation in its initial stage: the ERP project stage. During this stage, management decides upon the degree of BPR that is needed so that the organization accommodates the functionalities embedded in the ERP system. After this stage, the ERP system starts running and the process changes designed and implemented start to occur. From a benefits realization perspective, these business process changes are expected to increase the internal efficiency. Therefore, another extension related to the construct *process measures*, which was split into the constructs *business process changes* and *internal efficiency benefits*. Therefore, these constructs represented a more detailed reflection of the organizational effects of ERP systems implementations at the process level.

In early analyses, business performance was measured by *accounting items*, such as return on assets, return on equity, and return on sales, or *market values* such as Tobin's q and short-window abnormal stock returns. We used a balanced scorecard (BSC) perspective; this provided a multidimensional view of performance through internal processes, customer, and a learning and growth measure, in addition to financial measures [7].

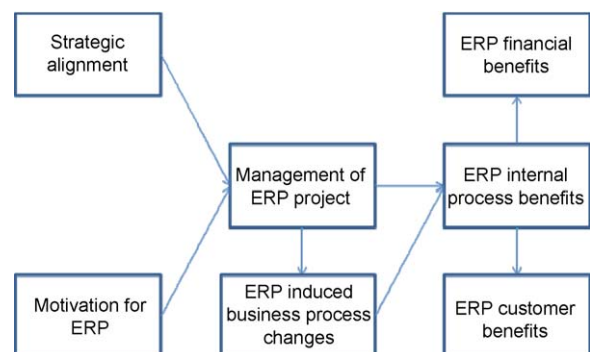


Fig. 1. Extended theoretical framework.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات