
Extending the value of ERP

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Abstract

Two distinct phases of ERP have been identified. The first phase refers to the changes that an organization undergoes in transforming from the old system and "going live" with the ERP system. The second phase, also called the second wave of ERP, refers to the actions subsequent to ERP implementation, that enable the organization to achieve the full capabilities and benefits of ERP. The paper examines the problems organizations frequently experience with ERP implementations, and suggests strategies for extending the value of ERP systems.

Introduction

ERP (enterprise resource planning) emerged about five years ago as a complete business software system that enables an organization to:

- share common data and activities throughout the entire enterprise;
- automate and integrate the critical parts of its business processes; and
- generate and access information in a real-time environment.

Companies that have implemented ERP seem to experience one of two opposite outcomes. For some, the ERP system helps create re-energized organizations that are in a position to better serve customers, empower employees, and drive greater business value. For others, the organization's long-term implementation process can be a source of fatigue and complete dissatisfaction. The bad news is that the evidence indicates that the level of dissatisfaction appears to be growing.

This paper explains why this has happened and describes two distinct phases, or waves, of ERP implementation. Organizations that only complete the first phase will not reap the full benefits of ERP. Why this is so and how the second phase extends the value of ERP is discussed. Change strategy recommendations and extensions are provided.

Sagging satisfaction levels with ERP implementations

A semi-annual survey conducted by A.T. Kearney Company (Kearney, 2000) asked over 250 major corporations around the globe about the impact that information technology is having on the corporate strategic agenda. The percentage of CEOs who were "very

satisfied" with their ERP efforts dropped from 62 per cent in 1996 to only 10 per cent in 2000. Similarly, the percentage of respondents who expressed complete dissatisfaction or gave no response to the question increased from 2 per cent in 1996 to 31 per cent in 2000.

The main reason one ERP implementation is a success and another is not, depends on what ERP is meant to be: i.e. how long-term or short-term-oriented is a company's view of what it means for its ERP system to be complete. Simply implementing the system will likely result in disappointment. But a longer view in which "going live" with the new system is not the end of the ERP journey, but the beginning, is more likely to produce significant tactical and bottom-line strategic benefits.

Implementation studies, such as the one conducted by Deloitte Touche Tohmatsu (Deloitte, 1999a) in 1999 have revealed two distinct phases or waves of the ERP transformation journey.

The first wave starts with securing the necessary ERP tools. This is followed by system implementation and is finalized with the "go live" stage in which the system is trusted to support important operational and strategic decisions. The mistakes that companies make is to see the "go live" point as the final goal or destination. The second wave refers to the actions that are taken after ERP is implemented to enable the organization to maximize value and return on investment. The continued ERP journey should lead to growth, greater agility, and improved profitability.

First phase ERP

The first phase or wave of ERP can be described as focusing on the effort necessary to reach the "go live" milestone. This means to convert from the legacy applications to ERP. One reason for the urgency to "finalize" implementation was that in the year 1999,



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many companies felt pressure to undertake ERP implementation in a defensive move to protect themselves from anticipated Y2K problems. As a result, many implementations were characterized as a “slammed in” approach using a pre-configured or “vanilla” implementation, which created gaps in required industry-specific functionality. In other words, a generic, untailored system that very minimally meets the needs of unique business operations was accepted because the organization fell prey to time constraints. This then had a profound negative impact on the overall long-term success of the effort.

Another compromise was made when companies attempted to rely too heavily on limited in-house expertise. In many cases, this decision was forced by the scarcity and high cost of skilled consultants knowledgeable about the particular system. The result was improper setup and configuration. Hiring and retaining skilled personnel has become an extremely important critical success factor according to an A.T. Kearney study (Kearney, 2000). It ranked number two in importance in 2000 according to surveyed CEOs.

The lack of knowledge or awareness also resulted in the failure to implement some very useful, if not critical, system features. It is becoming increasingly difficult for ERP implementing companies to obtain and retain people who are competent in their “core” skills *and* who are technically savvy. However, it is not necessary to hire and train personnel for two different skills sets – “core” or functional skills and “IT” or technology skills. A company can hire workers with strong core skills and support those individuals with other personnel that have the technical expertise.

Rising implementation costs that exceed budget has caused many companies to trim project efforts. This has translated into limited training and an abbreviated effort at redesigning processes and re-engineering the organization. As Hammer (1999) points out:

Companies that have launched into the ERP implementation without planning for the long-term have lost opportunities to drive cultural change and online value from the organization.

First phase results

The first phase has provided organizations a tactical solution for such problems as Y2K compliance and a reduction in operational mistakes and deficiencies caused by data inaccuracy and information shortages. The first phase of ERP also supports strategic solutions that lay the foundation for

integrated processes and functions which can be extended: i.e. a foundation that sets the stage for the second wave of implementation.

In many cases, these benefits can be overshadowed by what the first wave has not provided. A major complaint has been the lack of user-friendly systems. Few company personnel may use the system because they feel that one has to be an expert (Caldwell and Stein, 1998). It is difficult to readily capture critical data at the inception of a particular transaction. The ability to easily retrieve and analyze data is hampered when companies have not thoroughly reworked processes in preparation for ERP.

In essence, all the integration and sophisticated functionality does not matter if organizational users cannot figure out how to use the system, cannot easily enter pertinent data into the system, and then cannot retrieve it in a meaningful format.

The result of these characteristics is a partial implementation for ERP “go live”. Steve Baldwin, a senior partner at Deloitte Consulting stated that several companies that had gone live discovered that the ERP packages included only 50 per cent to 75 per cent of the technology they needed to get the full benefit of their systems (Caldwell and Stein, 1998).

The question is how does a company define a “completed” implementation? The company should adopt a long-term view that ERP implementation is not the end of the journey, but the beginning of a journey toward improvement, innovation, and flexibility. Full benefits come only with continued focus and effort after the system is turned on.

The first major hurdle to overcome in the “go live” phase is a dip in performance. This is shown in Figure 1. Almost every ERP project director is confronted with problems, such as late orders, billing errors, and inaccurate inventory records after implementation (Hammer, 1999). But if the organization properly re-engineers for the new processes and thoroughly masters the change culture, a significant performance dip can be avoided. The drive to overcome these initial problems can provide the vision and realization that the “go live” is not the end, but the starting point. When the organization begins to understand the full-power that the ERP system can deliver and buys into the concept of a second wave, the organization can extend the ERP system to provide better business value, with tighter collaboration with customers, suppliers, and ultimately, end users, both domestically and globally (Stein, 1998).

Second phase ERP

The initial success of the second wave, or post-go-live stage, depends on three critical steps. The first step involves housekeeping. Before companies implement post-ERP applications, it is important that they stabilize their ERP system (Caldwell and Stein, 1998). An audit of the new system (ERP implementation) should be conducted to identify major breakdowns, inconsistencies, and deficiencies. Stabilization of the core ERP technology and people charged to work with it, requires training and retraining of all users (Deloitte, 1999b). Process discrepancies and critical functionality shortages must be filled and corrected. For example, if the system has been configured to automatically create a purchase order when raw materials are issued to production (a nice feature), it becomes a problem if received raw material is not entered into the ERP system on time, resulting in unnecessarily created purchase orders that must be tracked down and corrected. The goal is to make sure that all functions are working correctly and that the foundation is sound.

A second step is to add functionality and to re-engineer necessary processes. The existing IT investment is maximized by evaluating functionality in the modules already purchased, but not fully implemented. An area of opportunity is often overlooked simply because of a lack of awareness of the existence of a piece of functionality or how it works. Consultants are a valuable resource for learning new applications. Examples include product data management, document management, workflow management for automated routing of approvals, and electronic data interchange functionality. Keep in mind that the ERP system cannot meet 100 per cent of the needs. Treat ERP as the backbone and when the system capability is understood, go to step three.

The third step is to extend and integrate. Although most ERP software providers are working hard to extend their own offerings, most companies are looking to third party products to meet these needs. When evaluating products, it is important to select a vendor that integrates easily and is a preferred partner of the existing ERP provider. Most ERP systems are generally weak in specific functional areas such as customer relationship management (CRM), data warehousing, e-business, transportation management, and sales process automation. Industry-specific solutions, such as oil and gas, apparel manufacturing, and health care,

also are a weakness of ERP. These three steps are portrayed in Figure 1.

Second phase ERP extensions

Organizations are building onto ERP platforms, applications more attuned to engaging customers (Caldwell and Stein, 1998). Add-ons such as supply chain management, data mining, demand planning, and CRM, enable companies to be more customer-focused. The A.T. Kearney survey (Kearney, 2000) previously mentioned, showed that CEOs feel that a primary value benefit of ERP systems is to “improve customer relationship management”. CRM systems support customer information centers where data is collected on customers, such as order patterns, product preferences, customer demographics, and satisfaction/complaint responses.

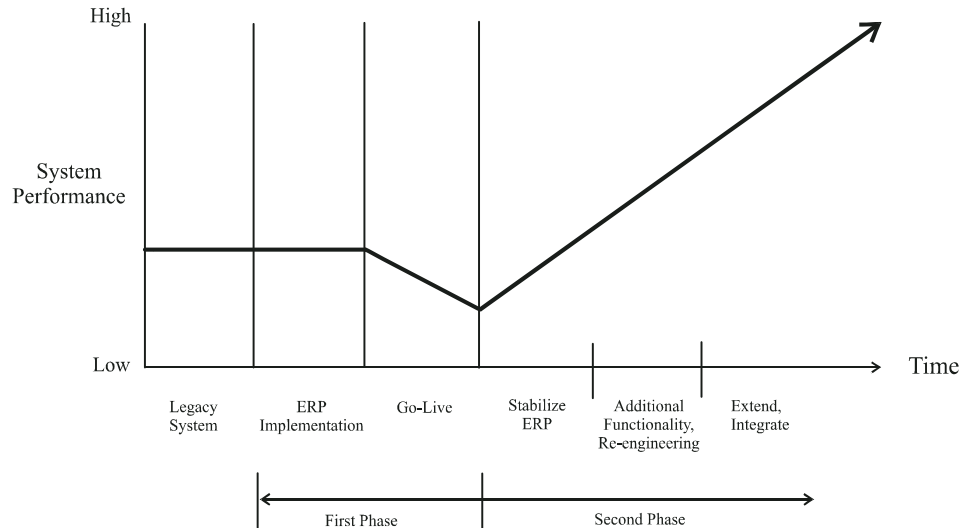
Some companies are engaging in cross-enterprise collaboration through e-business systems including both B2B and B2C elements. Colgate-Palmolive Company has extended its SAP software to the Internet, providing such essential data as manufacturing production schedules and inventory levels to its key suppliers (Stein, 1998). Suppliers are responsible for monitoring inventory levels on their own, and when the materials that they provide start to run low, they can recognize the status and replenish the stock without having to be notified by Colgate. The potential for creating new sales and distribution channels is tremendous.

A fatal error is in building Internet solutions and not effectively integrating them with the back-end system. The result could be a heavy stream of orders but an extremely cumbersome and inefficient fulfillment and customer service process.

Data warehouse technology provides valuable information on customer profitability, sales performance, product and product-line profitability, and supply chain performance. These types of enterprise-based analytical tools help overcome traditional data retrieval problems.

Another ERP extension that helps solve the data capture problem is mobile ERP. Mobile ERP is arguably one of the biggest opportunity areas today. Basically, it permits the user to take the ERP system with him/her. One example is that ERP allows the setup of complex pricing and promotion programs automatically tied to invoicing and billing, which are ultimately tied to accounts receivable and the general ledger. The promotion programs are much less effective if sales reps cannot easily take data with them out into the field, and remotely capture

Figure 1
Performance trend for ERP implementation



sales order information and check inventories specifications and inventory levels that promotions are tied to. Another example are passive systems that automatically track a movement or activity performed without the worker having to take any action to tell the system – the system just knows.

Satellite-based global positioning system technology offers another excellent payoff opportunity. This technology can enhance ERP by tracking assets, such as trucks and inventory, that have moved beyond the plant. Delivery routes and schedules can be dynamically tracked and optimized. Organizations can use the ERP system to better track the status of materials and goods by extending beyond the physical plant. RFID technology is capable of automatically tracking the movement of tagged inventory from receiving, quality assurance/inspection, work-in-process, packaging, and final shipping and distribution.

The plethora of hand-held/mobile and wireless devices are allowing the capture and retrieval of data “anytime and anywhere” that is so critical to maximizing the operation of ERP systems.

Conclusions

ERP is not an “end all” and “be all”. Companies should not spend excessive time trying to retrofit the business to ERP. If ERP

does not meet the needs of the organization, extend it. ERP must be extended beyond traditional bounds of the first phase to reap the true value of the system. Take advantage of new technologies to “mobilize” the system. However, keep in mind that the ERP foundation, or backbone, must be solid before extensions can be successful.

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