

ERP and the Best-of-Breed Alternative

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INTRODUCTION

Enterprise resource planning (ERP) systems are off-the-shelf software systems that claim to meet the information needs of organizations. These systems are usually adopted to replace hard-to-maintain legacy systems developed by IS departments or older off-the-shelf packages that often provided only piecemeal solutions to the organization's information needs. ERP systems evolved in the 1990s from material requirements planning (MRP) systems developed in the 1970s and manufacturing resources planning (MRPII) systems developed in the 1980s. ERP systems serve the entire organization, not just material or manufacturing planning. One advantage of ERP is that it integrates all the information for the entire organization into a single database.

Implementation of ERP systems has proven expensive and time consuming. Failed and abandoned projects have been well publicized in the business press. ERP systems are "expensive and difficult to implement, often imposing their own logic on a company's strategy and existing culture" (Pozzebon, 2000, p. 105).

Most firms utilize a single software vendor for the complete ERP system throughout their organizations. The integrated nature of ERP software favors this single-vendor approach. An alternative strategy adopted by some firms is the best-of-breed approach, where the adopting organization picks and chooses ERP functional modules from the vendor whose software best supports its business processes. Organizations adopting best of breed believe that this approach will create a better fit with existing or required business processes,

Table 1. Some functions available in SAP R/3 (Source: Davenport, 1998)

<u>Financials</u>	<u>Operations and Logistics</u>
Accounts receivable and payable	Inventory management
Asset accounting	Material requirements planning
Cash management and forecasting	Plant maintenance
Cost element and cost center accounting	Production planning
Executive information systems	Project management
Financial consolidations	Purchasing
General ledger	Quality management
Product-cost accounting	Routing management
Profitability analysis	Shipping
Profit-center accounting	Vendor evaluation
Standard and period-related costing	
<u>Human Resources</u>	<u>Sales and Marketing</u>
Human resources time accounting	Order management
Payroll	Pricing
Personnel planning	Sales management
Travel expenses	Sales planning

reduce or eliminate the need to customize a single-vendor solution, and reduce user resistance. Jones and Young (2006) found that 18% of companies used this approach to select ERP software packages.

This article examines what the best-of-breed strategy is, when it is used, what advantage adopting companies seek, examples of best-of-breed implementations, and differences in implementation methods.

BACKGROUND

ERP implementation projects can be distinguished from other IT projects by three characteristics (Somers, Ragowsky, Nelson, & Stern, 2001). First, ERP systems are “profoundly complex pieces of software, and installing them requires large investments in money, time and expertise” (Davenport, 1998, p. 122). Second, ERP packages may require the user to change business processes and procedures, may require customization, and may leave the firm dependent on a vendor for support and updates (Lucas, Walton, & Ginsberg, 1988). Finally, adopting firms are usually required to reengineer their business processes. Implementation projects must be managed as broad programs of organizational change rather than a software implementation (Markus & Tanis, 2000; Somers et al., 2001).

ERP systems include functionality for basic business processes based on the vendor’s interpretation of best practices. However, the selected functionalities do not generally match the existing business processes of all organizations and may not be the best practices for a particular organization.

Typical ERP functions from SAP R/3, a major ERP vendor, are shown in Table 1. SAP R/3 modules provide a wide range of functional solutions, however, with the wide range of potential ERP customers, some organizations may not be a good fit. With the best-of-breed strategy, organizations can pick and choose the ERP modules from whichever vendor provides the best fit with their business processes and possibly reduce the amount of reengineering of business processes required, hence reducing the level of employee resistance.

BEST OF BREED IN INFORMATION SYSTEMS

The term *best of breed* was originally used in information systems literature to describe a situation where individual departments are allowed to install systems that best meet their needs rather than adhere to a corporate standard.

Acquisition costs are lower when all departments use the same software systems because of joint-purchase benefits such as volume discounts and other economies of scale.

However, other costs may offset these savings. Unit document costs may be higher on a single-vendor approach compared to best of breed. Costs to translate and reformat data may be excessive. Switching costs may differ depending on the system chosen (Dewan, Seidmann, & Sunderesan, 1995).

BEST-OF-BREED ERP

ERP vendors design systems that are “purported to represent best practice and a more competitive business model.” However, organizations interested in adopting ERP argue that “ERP software functionality is often lacking, the implicit business model does not represent their own and therefore reengineering business processes in line with this presents major difficulties” (Light & Holland, 2001, p. 217).

Single-vendor packages seem to have strengths in a particular functional area. PeopleSoft is known for exceptional human resource modules and Oracle has a reputation for exceptional financial modules.

Best-of-breed solutions provide an alternative strategy to enable organizations to implement ERP when a single vendor may not provide the functionality that the adopter requires or when modules from different vendors may provide a better match with existing or required business processes than a single-vendor solution. Lack of feature-function fit may be due to the design of most ERP systems for discrete manufacturing. Many organizations have specialized business processes common to their industry that may not be solved by the best practices embedded into single-vendor ERP systems. Various modules may not support process manufacturing industries, such as food processing and paper manufacturing; project industries, such as aerospace; or industries that manufacture products with dimensionality, such as clothing or footwear (Markus & Tanis, 2000).

While providing the additional needed functionalities, the best-of-breed approach complicates integration. With a single-vendor ERP system, “the whole package is designed for data compatibility” (Grant & Tu, 2005). With best-of-breed implementations, middleware is usually needed to link the various modules and databases: “The chance of being able to arrive at the same levels of integration as with an ERP system is very low, but this may be worth accepting as a means of saving the cost and pain associated with ERP implementation” (Payne, 2002).

Although most firms select a single vendor, a survey of Fortune 1000 firms found that 18% of the respondents chose ERP packages based on best-of-breed criteria; 32% of respondents used a combination of packages, such as SAP, PeopleSoft, Oracle, Baan, JD Edwards, Lawson, Adage, and SSA/CT (Jones & Young, 2006).

Although little empirical research has been done on best-of-breed ERP implementations, the information shown

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