



What's the Future of Enterprise Systems?

Overview and Guide

Businesses have made enormous investments in Enterprise Resource Planning (ERP) and other large and complex Enterprise Systems (ES), both packaged and home-grown. Most companies have gained cost, scale, and performance benefits from consistently performed business processes and consistently formatted data. But they have paid a price in terms of flexibility and innovation because ES are designed for stability, not changeability. In short, ES were a step ahead in automated process performance, but now they are a step behind in the drive for simpler, more agile, more plug-and-play computing platforms. As one CIO put it, "With ERP we have big biceps but very weak legs."

Even with well-implemented ES, the common problems of large application systems persist – expensive maintenance, time-consuming upgrades, and difficulty maintaining interfaces and accessing data for other purposes. And the tightly integrated nature of ES hinders companies from making use of new and alternative technological capabilities – mobility, cloud services, software-as-a-service (SaaS). ES vendors are adding capabilities, but they're also striving to protect their installed base. And changes such as support for mobile devices come at the vendor's pace and prerogative. SaaS vendors would like to penetrate the enterprise applications market; however, with a few exceptions like customer resource management (CRM) from salesforce.com, most of their capabilities are unproven at large-corporation scale.

That was the context, the presenting problem, as we began this research. Working with two dozen large organizations and a variety of experienced CIOs, we explored how to overcome the limitations of today's ES – how to protect their benefits while making them operate as parts of more agile computing environments. Examples drawn from our research participants feature prominently in this report. On the one hand, we don't want to dilute the benefits that ES have brought to many businesses, to throw out the proverbial baby with the bathwater. On the other hand, companies are under enormous pressure to innovate, to capitalize on analytics, and to raise their business agility generally, but ES are proving a source of rigidity.

What's the Future of ES?

Here are the main trends we see in the evolution of ES; they're also recurring themes of this report:

- ES must become less monolithic, less tightly integrated, and less the center of the computing environment.
- Companies are making greater use of focused and modular software, including in the cloud, to supplement or supplant ES functionality.

- Companies are becoming more active and disciplined in “surrounding” their ES, and the key is robust middleware and connectivity architecture.
- Companies are making greater use of development platforms and should anticipate a growing need for custom development of differentiating functionality.
- Companies must focus on achieving simplicity and scale through modularity, discipline, and connectivity standards – not through forced standardization of processes, applications and technology.
- In service of business agility, reengineering and innovation, ES must expose more of their assets – starting with data for analytical management – to other, often experimental, applications.

We can distill our basic recommendations for ES into three interrelated actions:

- **Get ES out of the way.** Stabilize difficult-to-maintain ES and treat them as engines running in the background, not the center of activity. More fundamentally, don’t let the “care and feeding” of your ES dominate your effort and budget. Stabilize the applications “core” and devote more resources to innovation at the “edge” of the enterprise.
- **Teach ES to play nicely with others.** Invest in your architecture for systems and user interfaces and follow it as consistently as possible. Build your capability to surround an ES with additional, alternative, and experimental functionality.
- **Make ES more generous.** Your ES are full of valuable assets, both data and business logic. Make these available to other applications and innovation initiatives. If business logic cannot be extracted in the form of code modules, consider incorporating rules engines. The traditional objective has been to protect an ES from outside interference; the new objective is to expand the value of ES by sharing its assets.

The success criteria for ES traditionally center on operational performance. Going forward, they must account for innovation as well. An ES cannot be the center of innovation, but if your ES is not enabling innovation, you’re missing an opportunity. If it impedes innovation, you’re in trouble.

This report contains four main sections, published both individually for focused distribution and in consolidated format. Here is a brief overview with key points for each section.

Business Challenges of Enterprise Systems

Reviews the benefits and limitations of ES, shares the candid viewpoints of experienced CIOs regarding those limitations, and discusses how to assess the business condition of an ES.

- A well designed and implemented ES can keep a company humming – processes are consistently performed, technology is integrated into processes, and data is relatively “clean.” With those benefits, however, come the problems of fit and agility. At a time when companies seek to innovate and become more agile, they find their major processes set in technological concrete.
- Because the fit is always imperfect (even with in-house ES), an organization must be adept at surrounding any ES with additional or alternative functionality, as well as managing a clean architecture of interfaces.
- The answer is not to ask of ES things they were not intended to do, but rather to recognize and work around their limitations, and to find ways to make ES part of a computing platform that becomes more modular and flexible over time.
- Large and complex ES have taken on the character of a cost of doing business, but the financial return on ES has been mixed. A 2011 Computer Economics study indicated that only 37% of the companies surveyed had a positive ROI with commercial ERP.

Stabilizing, Maintaining, and Consolidating Enterprise Systems

Presents a variety of examples of how companies improve the condition, manageability, and flexibility of their ES. Also provides methods for assessing the business performance and fit of an ES and evaluating alternatives for improvement.

- The goals are to commit to a reasonable plan for keeping an ES healthy, surround it with additional capability as needed, keep maintenance costs reasonable and benefits flowing, and replace or dismantle the ES at the right juncture. And avoid being painted into a corner through inaction, a corner where the only escape is a large, risky, and time-pressured replace or repair project.
- “Freezing” an ES means ceasing to maintain it (except for emergency repairs) and “walling it off,” preferably with a limited set of standard interfaces. The ES is then treated as an engine running in the background. Freezing makes sense under a pair of conditions: one, the basic functionality of the ES is adequate and the business needs are not changing fast; two, the company is good at surrounding old systems with new capabilities.
- Large and complex corporations, especially those that have grown by acquisition or have given business units great autonomy, can reach the point where their many ES need to be consolidated. They tend to consolidate onto multiple ES platforms, or to use a “single instance” only for common processes. They decide to live with a degree of complexity, and to compensate for the variety of ES with data warehouses, standard interfaces, and portals for access.

Surrounding the Core

Describes the kinds of capabilities and functionality that commonly surround core systems and how to manage the core-edge dynamic. Presents a variety of examples of how organizations surround the core and innovate at the edge.

- Organizations surround their ES with additional applications and technologies for a variety of reasons: supplement or replace functionality, compensate for weaknesses of the ES or its user interface, integrate the ES into a broader business process, and innovate in ways that would be disruptive to the ES core.
- Assets in the “core” are managed for stability, scale, and reliable performance. ES are in the core, but so are other operational applications. The goals are to accommodate scale, drive efficiencies, make incremental improvements, and ultimately lower the unit cost of business operations.
- Assets at the “edge” are managed for flexibility and change. These include any new applications, technologies, or ways of working that the enterprise is experimenting with or adopting to bring beneficial change to business operations. The goals are to discover and capitalize on new opportunities, and to introduce productive and sometimes disruptive business innovations.
- One of the biggest management challenges in surrounding an ES and innovating at the edge involves new roles and skills. Businesses need more data scientists, collaboration specialists, user-interface designers, and workflow analysts.

Technology Landscape

Presents a framework, organized by business objective and value, for visualizing and discussing the capabilities and completeness of the computing environment – core engine, integration/middleware layer, and surrounding capability in the forms of new functionality, information and analytics, user interface and mobility, and collaboration and engagement.

- The landscape framework enables business and IT leaders to understand and discuss the core-edge distinction, the types of capability that typically have to surround any core, and the key role of the integration layer in simultaneously maintaining integration and flexibility.
- Large vendors play in multiple areas of the landscape, and they’d like to “grab more real estate” in customer environments. But are they good in all the areas where they play? If your company excels at the integration layer, you can be more vendor agnostic and go for “best of breed” in more areas of the landscape.