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Making ERP More Adaptable to Business Change

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Historically ERP vendors have emphasized flexibility of system implementation, as well as ease of configuration and customization. Today, however, the key issue is post-implementation system responsiveness to business change. Enterprise resource planning (ERP) systems need to adapt not only to changing business processes, but also changing business information. The ability to make ongoing changes in three areas — business process, the data (whether organizational, industry, or regulatory), and the delivery methodology (reporting, analytics) — is how companies can best capitalize on their ERP investment.

The following questions were posed by Agresso to Henry Morris, Group Vice President and General Manager of IDC's Integration, Development, and Application Strategies, on behalf of Agresso's enterprise customers.

Q. What are the new business requirements for enterprise resource planning (ERP) applications?

A. The pace of business change is accelerating, driven by market forces such as mergers and acquisitions. Companies with different systems have to consolidate their information and be able to agree on a standard way of performing functions like procurement or financial transactions. Other forces include changes in customers, competitors, or suppliers. Particular types of businesses that are more people-oriented, such as service companies, have to deal with changes on a continual basis, restructuring the way the business is organized, how people are organized within the business, and also how the business deals with external relationships. All these things can change — at the process level and at the data level.

ERP application suites designed to organize and manage these business processes and information are not new. I think that the focus is shifting from what it was, say 15 years ago, where companies worried mainly about how to initially implement their ERP system. Today, the main concern is how the company keeps the ERP system aligned with ongoing changes — changes that the company didn't anticipate when the ERP system was first put in place. Legacy ERP systems becoming a bottleneck to rapid business process and information change is a real problem.

Q. What are the cost areas associated with less-adaptable ERP systems?

- A. There are a number of cost areas to think about, such as the total cost of ownership when needing to adapt the ERP system to changes in the data model that underlies the system. That could make it very difficult to connect the ERP system to other applications.

Another TCO area is the difficulty in accommodating upgrades when you've made changes to the ERP system. Suppose you want to get a new version. How will you roll forward all those changes to the ERP system — to the data model, the reports, and the processes that you need to support with the new version? Some companies may choose not to make any changes to their information and processes, and hence to the system. But that choice carries an opportunity cost; you're foregoing the chance of new business opportunities. You may recognize a new way in which you could better serve your customers and gain market share, for instance, but you can't do it because it would be too expensive to change the underlying ERP system.

In this scenario, the ERP system becomes a bottleneck to business agility. The company becomes stuck between a rock and a hard place. Either it makes changes to the ERP system as they relate into other systems, which can be expensive because the system's not set up to accommodate those changes easily, or the company decides to pretty much live with whatever the ERP system provides, which means paying the opportunity cost of not being able to change and gather new business.

Conventional wisdom says only large companies have to make these kinds of changes to their ERP systems and that medium-sized companies can accept whatever an ERP system provides and only have to worry about scaling it up. Yet, when you look at midsize companies, they have a need for ongoing customization, and they also aren't satisfied with using only an ERP suite to run the company. It may not be broad enough; it may not meet all their needs. They'll supplement the ERP system with other applications and need to integrate those apps with ERP.

The reality is midsize companies have the same types of needs as larger companies do in terms of flexibility and the need to adapt ERP systems to leverage business opportunities or business requirements. A new supplier, for example, might want them to deliver data in a particular way, and they have to be able to get the ERP system to do that.

Q. What kind of application architecture do companies need to better deal with change?

- A. The history of application architecture has been a long progression toward greater flexibility, from the early days of mainframe-based applications, to client/server architecture, to Web-based architecture. Now the big thing people are looking to is service oriented architecture (SOA). So as people talk about the move to SOA, we need to define what we're talking about.

People tend to think that if you have a service oriented architecture, you automatically have a system that's adaptable, changeable, flexible, and so on. What they need to recognize is not so fast. It's a leap from looking at the way the underlying components or services of an application are made to assuming that, in and of itself, SOA gives you the ability to change the application as much as desired. It doesn't.

After all, having a modular capability with an SOA architecture simply gives you the ability to standardize and integrate applications at the systems level. What's necessary for the kind of flexibility we've been discussing is the ability to make changes at the model level — to make

changes about the data, about the information that's delivered, about the processes that you want to support at a higher level of abstraction.

Ultimately you want to enable a business person, someone not necessarily even in IT, to make that kind of change and have all the appropriate configuration of services, the data models, process models, and the information delivered, in a report, to be automatically reconfigured. By tightly integrating all three components — data, process, and information delivery — the changes in any one place can be reflected intelligently across the enterprise.

Q. What's the next wave in application development that may facilitate more adaptable ERP systems?

A. First, organizations need to realize that ERP doesn't automate all the processes in a business. There are many events that aren't really well automated, well orchestrated. Information workers are continually having to fill in gaps between processes, responding to exceptions and alerts. There's a need for what IDC calls "intelligent applications" — applications that can respond to and fill these gaps in business processes.

Organizations need to get to a point that is called "sense and respond," to be able to monitor the current state of what's going on in a business and send an alert if there's something that requires attention, providing recommendations for actionable information.

Now, to be able to handle events, you must have a concept of the event and the associated processes down to the data model, so that the system would then know what kind of information or data should to be monitored, and send out alerts, reports, or other kinds of visual information to help people focus on the things that they need to pay attention to.

Event-based systems, model-based development, and the architecture to support it will become important both for the productivity and success of the enterprise. For example, it can help organizations more easily meet new process or organizational requirements because they'll be able to respond faster. Let's say you're a services company and you've discovered project management issues. You need to be able to respond quickly to workflow problems, for instance, in terms of making process changes to do better detection of such problems and faster remediation.

The system needs to support event processing and architectures. Then, in terms of how the system is developed and maintained, you need the ability to do this at the model level, at a visual level so the processes can be understood. You need an underlying data construct that's rich enough to support this notion of the ability to monitor and respond to events, and then be able to make changes — add new events, for example, new kinds of patterns that must be understood. Without these capabilities, intelligent applications are only going get you part way toward an ERP system that supports ongoing and dynamic business change without major IT intervention and reengineering.

ABOUT THIS ANALYST

Henry Morris is the Group Vice President and General Manager for IDC's Integration, Development, and Application Strategies (IDeAS) solutions research group, which seeks to understand how technology is being used in support of a business process via build, buy, or integrate strategies.

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