Connectivity and integration
Executive brief

WebSphere® software

Optimize the potential of ERP systems through IBM SMART SOA integration strategies.

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Executive overview

Today's businesses rely on the increased availability of back-office enterprise resource planning (ERP) data to deliver new services, communicate with suppliers and keep customers better informed. In recent years, the ERP landscape has been dominated by world-recognized vendors such as SAP and Oracle. Both of these companies, as well as their smaller competitors, have driven innovation in the capabilities of their platforms, ranging from integration tools and portal solutions to industry-specific platforms.

But coupled with these innovative offerings is the false belief that businesses need to align with the full suite of an ERP vendor's recommended technology to draw the most value from a particular platform. This misconception not only limits an organization's choices, but it can also negatively affect hardware and implementation costs. Instead, with a solid integration strategy, businesses can avoid ERP vendor lock-in and choose proven components that offer a high probability of success. This path also allows businesses to take advantage of existing applications that still contain value or other packaged solutions available in the marketplace.

Avoid the limitations of point-to-point integration

While the initial cost of building point-to-point interfaces is low, businesses that leverage point-to-point integration leave themselves open to:

- *An increasing number of supported connections that can reach into the hundreds and even thousands.*
- *IT support costs that grow exponentially with time, absorbing company profits.*
- *Complicated infrastructures that limit innovation and growth.*

A problem of integration

Far too frequently, the modern business focuses its technology efforts on short-term problem solving, deploying new IT solutions that handle only the current challenge. Unfortunately, decision makers aren't giving much thought to how these new systems will affect future technology or business requirements. Point-to-point integration is routinely implemented when it's necessary to transfer information between platforms, and although this method works for small infrastructures, as time passes and businesses grow, the number of supported connections can become difficult to manage.

For businesses to regain control of their enterprise systems without sacrificing data accessibility, they need to employ a universal integration strategy across the organization, and an enterprise service bus (ESB) can provide the solid foundation needed for this strategy. By deploying an ESB to facilitate future integration projects, a business can connect disparate systems into a common integration "pipeline" that unifies the various platforms and helps ensure that interfaces built in previous projects can be reused for future projects.

How this affects ERP

Businesses routinely need to extend access to their ERP data to other business systems, vendors and customers, and to accomplish this task, organizations require a well-integrated ERP platform. Because previous point-to-point integration strategies have proved to be financially burdensome, some businesses are now attempting to avoid integration by consolidating their business processes onto a single vendor platform through extensive migration efforts. And although this strategy may reduce some integration concerns, it creates new business problems.

To maintain this unified vendor strategy, companies are deploying new ERP modules that have not fully matured, often neglecting third-party offerings that provide richer capabilities. Business policies are shoehorned into the available tools from the single vendor, or companies add customized code to the software to supply the needed functionality. But as time passes and more customizations are made, the software no longer resembles the original code, making it virtually impossible to incorporate a functional upgrade from the application vendor. Instead, a business must begin again from scratch with the new version of the software, restarting the customization process. And in today's marketplace, a repetitive rip-and-replace strategy is akin to no strategy at all.

The difficulties inherent with this single-vendor strategy echo the short-term problem solving discussed earlier. Over the years, most organizations have assembled dozens of business applications to keep their operations running, and there simply is not a single software vendor that can cater to all of a company's business needs. Avoiding system integration is not a viable solution, nor is abandoning existing IT investments to standardize on a less functional, single-vendor platform. Instead, businesses must employ a comprehensive, federated integration strategy that will allow them to reuse and enhance their business application investments.

The value of a federated strategy

By following a federated integration model with its ESB, a business can yield a number of improvements, including:

- *A flexible architecture that can better handle business changes, such as new marketplace ventures, mergers or acquisitions.*
- *Broader software choice without fear of compatibility concerns.*
- *An IT organization that can actively participate in driving business innovation and competitiveness.*
- *Reusable skills and integration assets that can be used across the enterprise.*
- *Reduced upgrade costs because of a decreased need for modifications to original, packaged ERP software.*
- *Consistent quality management and reporting policies for integration activities.*

Applying an ESB to your ERP

Further adding to the confusion, ERP vendors have begun to offer integration tools in recent years that can provide an integration layer for their own products. These tools build interfaces between vendor software modules, enabling ERP processes and user interfaces to be customized without making modifications to the original application code. However, if a company wants to share the ERP data with existing systems, feed supply chain data to its vendors or manage workflow processes across business partners, additional integration infrastructure is often needed.

Simply put, ERP vendor integration offerings have not yet matured to the point of being able to support the integration of an entire IT infrastructure. If a number of application components from the same vendor are used, then an integration tool from that company is often still useful within that domain. However, the best solution for linking ERP systems across a broader IT environment—while maintaining flexibility and resiliency—is a robust, application-independent ESB. An ESB strategy can enable businesses to benefit from the innovations of the ERP integration platform without limiting an organization to a single vendor's technology. The organization can leverage a full-scale ESB along with integration adapters to extend access to its ERP data to numerous applications from various vendors without compromising the integrity of the ERP environment.

Beyond just strategy: how IBM can help

IBM offers a comprehensive portfolio of integration tools that can help businesses take the next step in optimizing their ERP systems whether they are implementing an ESB for the first time or extending the capabilities of an existing SOA.

- *IBM WebSphere MQ software provides a universal messaging backbone that can connect to virtually any commercial IT system.*
- *IBM WebSphere Enterprise Service Bus software offers a comprehensive service platform that delivers standards-based integration.*
- *IBM WebSphere Message Broker software transforms and routes data in realtime between formats and platforms.*
- *IBM WebSphere DataPower® Integration Appliance XI50 devices readily transform data between platforms.*
- *IBM WebSphere Adapter tools can extend your ESB (or SOA) to ERP applications from independent software vendors.*

At first glance, this strategy may seem redundant because it employs two integration technologies; however, a federated integration model offers a more mature architecture that can support a broader range of formats, protocols and application standards. And an ESB strategy, in particular, will help deliver a heightened level of flexibility for today's business.

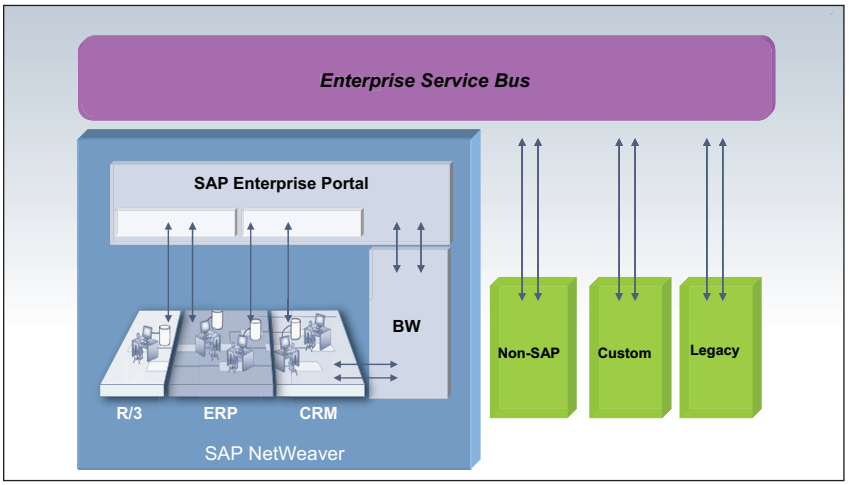

Figure 1: A typical example of a federated integration model that combines an enterprise service bus with vendor-provided integration tools

The IBM SMART SOA approach

With an ESB in place, businesses are well on their way to creating a service-oriented architecture (SOA) that facilitates better alignment of business goals with IT capabilities. Of course, an SOA is not an out-of-the-box solution that a business purchases and implements at one time. It does not have a start point or an end point. It is an architecture that places current and future system flexibility at the heart of development plans and is best deployed incrementally. And because this structure is designed to address the needs of the specific business, the deployment of an SOA will be different for everyone.

As discussed earlier, application integration is a key strategy for unlocking the value of new and existing ERP systems. And a federated integration strategy empowers businesses to extend the functionality of ERP systems across vendors, allowing organizations to choose the best ERP software module to meet their specific need. In addition, a central ESB can supplement the integration platforms bundled with ERP systems to extend back-office systems throughout the enterprise and beyond, providing users with a clearer view into service visibility and helping to establish governance policies across the enterprise.

To aid businesses through this process, IBM offers the IBM SMART SOA™ approach. An IBM-developed roadmap for successful SOA projects, the SMART SOA approach enables change and flexibility based on business priorities rather than on technology limitations, allowing organizations to take the necessary steps to deploy an SOA according to their timeline. And IBM is especially equipped to help businesses with these endeavors, offering a number of IBM WebSphere® connectivity and integration products to help businesses throughout the various stages of the SOA journey.

For more information

To learn more about IBM WebSphere application integration products or the IBM SMART SOA strategy, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/websphere/products/appintegration

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