Elements of a Successful Enterprise Application Integration
THE FASTER A BUSINESS RESPONDS TO CUSTOMER NEEDS, THE GREATER ITS CHANCES FOR SUCCESS. THIS KIND OF REAL-TIME RESPONSIVENESS REQUIRES THAT DECISION-MAKERS HAVE IMMEDIATE ACCESS TO ACCURATE INFORMATION FOR DECISION-MAKING AND THE ABILITY TO MAKE IMMEDIATE CHANGES TO BUSINESS PROCESSES IN RESPONSE. ENTERPRISE APPLICATION INTEGRATION (EAI) ADDRESSES THESE NEEDS BY ENABLING MULTIPLE APPLICATIONS WITHIN AN ORGANIZATION TO SHARE INFORMATION AND FUNCTIONALITY TO AUTOMATE BUSINESS PROCESSES.

A CRITICAL PRINCIPLE OF EAI IS THE ABILITY TO INTEGRATE ISLANDS OF AUTOMATION WITHOUT HAVING TO REPLACE EXISTING LEGACY SYSTEMS THAT ARE PERFORMING SATISFACTORILY. TO ACCOMPLISH THIS AN EAI ARCHITECTURE NEEDS TO INCORPORATE APPLICATION-TO-APPLICATION ADAPTERS, BUSINESS RULES, DATA TRANSFORMATION TECHNOLOGIES AND WORKFLOW MANAGEMENT. IN ITS MOST MATURE FORM, EAI ENABLES SUBJECT MATTER EXPERTS RATHER THAN PROGRAMMERS TO QUICKLY AND EFFICIENTLY CHANGE BUSINESS PROCESSES.

THE FOLLOWING STEPS PROVIDE A ROAD MAP FOR GETTING FROM A TO Z.
Developing an EAI task force and steering committee

One of the primary problems with many early ERP implementations was that top management and information technology drove the project with relatively little input from operating management. The result was, frequently, that mission-critical legacy applications were neglected in the rush to adopt the newest technological solution. If EAI is to overcome this problem, the various divisions and departments within the organization must play a leading role. The idea is to ensure that the architecture of the EAI solution gives primary weight to the needs of the operating arms of the organization.

The need for EAI arises from the failure of most ERP solutions to provide a complete functional replacement for legacy systems. The companies that attempted that approach largely determined that the cost and time involved in totally replacing legacy systems was far too high to be tenable. Instead, most companies have recognized that for the foreseeable future, ERP systems will be co-existing with legacy systems, not to mention new e-business applications. The emerging technology of EAI provides a robust structure to preserve the functionality of the legacy systems while addressing critical connectivity and communications needs with leading-edge technology.

When operations drive the EAI implementation, the result can be the integration of islands of automation that have risen throughout most large organizations, resulting in dramatic improvements in business efficiency and closer communications with customers, suppliers and partners. Later down the road, operations will also play a key role in the steering committee that has the mission of reviewing and guiding the project to ensure it stays aligned to the business goals.
In the 1960s and 1970s when companies began to acquire first-generation business computers, those systems were used to reduce costs and headcount by automating rote tasks as part of static and highly-structured approach to information management. As information technology proliferated throughout the organization, a wide range of different applications were implemented, at the department, division and enterprise level.

As companies move into the Internet economy, the need has arisen to obtain additional efficiencies and interact with the digital economy by integrating these islands of automation. The first step is mastering your application portfolio by determining which systems exist within the organization, what functions they are capable of performing, what other applications they communicate with if any and how they fit into your long-term e-business strategy. In a large number of cases you will probably discover that these applications are performing a critical function effectively yet are unable to communicate effectively with other important parts of your organization, wasting time and resulting in poor decisions because information is not available. The existence of applications such as this is a good reason to implement an EAI strategy. The basic idea is to integrate the application logic that implements business processes within an enterprise, which usually happens to be the same business processes that partners and customers will be interacting with over the Web.

Far too much EAI activity today is being driven by technology rather than business objectives. What should be done instead is to first develop a macro level business strategy that provides a road map for adapting a business to the era of e-business. Just like developing a business strategy for the old economy, an EAI strategy should start by considering a business’ current position in the market including strengths and weaknesses, products and distribution channels, the challenge posed by competition, new opportunities in the market, etc. But at the same time, a business needs to consider the opportunities and challenges posed by the ability to integrate existing applications both to each other and to the Internet, such as the potential to interact directly with customers to streamline distribution channels as well as the competitive threat posed by new market entrants leveraging the Internet. The next step is mapping a path to implement that strategy while putting the primary emphasis on delivering a positive experience to customers, channel partners and the others with whom you interact. For example, several years ago Federal Express set out to provide its customers with the current location and status of any of the 2.6 million packages the company will deliver today. Providing these capabilities required integrating legacy systems as well as developing wireless devices used by collection and delivery agents to scan most packages 5 to 7 times between pickup and delivery and to automatically transmit updates to the nearest regional center. This strategy dramatically improves the level of customer service that the firm is able to provide.
Establish your EAI architecture

An enormous amount of time and money is probably invested in the systems that run your business. Replacing these systems with parallel systems designed to interface with other parts of the organization and e-business systems doesn’t make good business sense in most cases. This creates the need to develop an architecture that can communicate with and extend existing systems by integrating them with new packaged and custom applications that service your supply chain, channel network and customers.

The EAI architecture should, first of all, address the issue of communicating with the disparate applications in the organization. Secondly, it should deal with converting data structures into a common format and, third, it must create business processes that link the integrated applications. Consider the situation of a firm that has problems communicating with customers and wants to implement a leading-edge customer relationship management system to address them. Without provisions for interfacing with back office systems, connectivity will require multiple manual steps with the result that information will often be incomplete and out of date. EAI architecture can address these issues by integrating the existing ordering and inventory systems with the new CRM to eliminating manual processing. When the CRM system is executed, it calls each of the integrated applications in a sequence that corresponds to the flow of the business process. This will make it possible for the CRM to automatically initiate an order and pass customer demographics and information to the ERP system which can then initiate the manufacturing process using existing methods.

An early approach to EAI was to write hard-coded point-to-point interfaces that allow the business logic in one application to communicate with other applications. The problem with this approach is that it requires existing applications to be modified, which can introduce bugs, and also creates a considerable amount of maintenance work. This approach has been largely superceded by a new generation of software that integrates both data and business processes between a wide range of different applications, from custom mainframe applications to the latest packaged e-business solutions. These newer generation products cut IT costs by creating a modular, scalable, flexible integration environment, and by providing the ability to make transformation and routing changes through a high level language or GUI interface. Because these new tools add an independent, noninvasive layer, nothing has to be torn apart while the integration solution is developed. Companies can integrate ERP systems with legacy applications, then easily incorporate state-of-the-art e-business applications. Mainframe and other legacy systems that are already running efficiently can continue to shoulder their part of the workload while connecting seamlessly to newer Web-based solutions. Using an integration broker architecture approach can eliminate the seemingly endless number of application interfaces imposed by point-to-point integration schemes. Instead of an interface between each application, 56 interfaces if you have 8 applications, only a single interface is needed between each application and the integrator. The technological requirements for an EAI implementation are by necessity quite strict. With data transformations, business rules and workflow logic that integrates many mission-critical applications a single platform, the EAI solution must provide continuous availability, scalability and ironclad security. The key to success of the EAI solution is in its ability to reuse or preserve critical business functionality and to make the integration scheme transparent to its user community.

Evaluate and select EAI tools

An early approach to EAI was to write hard-coded point-to-point interfaces that allow the business logic in one application to communicate with other applications. The problem with this approach is that it requires existing applications to be modified, which can introduce bugs, and also creates a considerable amount of maintenance work. This approach has been largely superceded by a new generation of software that integrates both data and business processes between a wide range of different applications, from custom mainframe applications to the latest packaged e-business solutions. These newer generation products cut IT costs by creating a modular, scalable, flexible integration environment, and by providing the ability to make transformation and routing changes through a high level language or GUI interface. Because these new tools add an independent, noninvasive layer, nothing has to be torn apart while the integration solution is developed. Companies can integrate ERP systems with legacy applications, then easily incorporate state-of-the-art e-business applications. Mainframe and other legacy systems that are already running efficiently can continue to shoulder their part of the workload while connecting seamlessly to newer Web-based solutions. Using an integration broker architecture approach can eliminate the seemingly endless number of application interfaces imposed by point-to-point integration schemes. Instead of an interface between each application, 56 interfaces if you have 8 applications, only a single interface is needed between each application and the integrator. The technological requirements for an EAI implementation are by necessity quite strict. With data transformations, business rules and workflow logic that integrates many mission-critical applications a single platform, the EAI solution must provide continuous availability, scalability and ironclad security. The key to success of the EAI solution is in its ability to reuse or preserve critical business functionality and to make the integration scheme transparent to its user community.
In the 1960s and 1970s when companies began to acquire first-generation business computers, those systems were used to reduce costs and headcount by automating rote tasks as part of static and highly-structured approach to information management. As information technology proliferated throughout the organization, a wide range of different applications were implemented, at the department, division and enterprise level.

As companies move into the Internet economy, the need has arisen to obtain additional efficiencies and interact with the digital economy by integrating these islands of automation. The first step is mastering your application portfolio by determining which systems exist within the organization, what functions they are capable of performing, what other applications they communicate with if any and how they fit into your long-term e-business strategy. In a large number of cases you will probably discover that these applications are performing a critical function effectively yet are unable to communicate effectively with other important parts of your organization, wasting time and resulting in poor decisions because information is not available. The existence of applications such as this is a good reason to implement an EAI strategy. The basic idea is to integrate the application logic that implements business processes within an enterprise, which usually happens to be the same business processes that partners and customers will be interacting with over the Web.

Far too much EAI activity today is being driven by technology rather than business objectives. What should be done instead is to first develop a macro level business strategy that provides a road map for adapting a business to the era of e-business. Just like developing a business strategy for the old economy, an EAI strategy should start by considering a business’ current position in the market including strengths and weaknesses, products and distribution channels, the challenge posed by competition, new opportunities in the market, etc. But at the same time, a business needs to consider the opportunities and challenges posed by the ability to integrate existing applications both to each other and to the Internet, such as the potential to interact directly with customers to streamline distribution channels as well as the competitive threat posed by new market entrants leveraging the Internet.

The next step is mapping a path to implement that strategy while putting the primary emphasis on delivering a positive experience to customers, channel partners and the others with whom you interact. For example, several years ago Federal Express set out to provide its customers with the current location and status of any of the 2.6 million packages the company will deliver today. Providing these capabilities required integrating legacy systems as well as developing wireless devices used by collection and delivery agents to scan most packages 5 to 7 times between pickup and delivery and to automatically transmit updates to the nearest regional center. This strategy dramatically improves the level of customer service that the firm is able to provide.
An enormous amount of time and money is probably invested in the systems that run your business. Replacing these systems with parallel systems designed to interface with other parts of the organization and e-business systems doesn’t make good business sense in most cases. This creates the need to develop an architecture that can communicate with and extend existing systems by integrating them with new packaged and custom applications that service your supply chain, channel network and customers.

The EAI architecture should, first of all, address the issue of communicating with the disparate applications in the organization. Secondly, it should deal with converting data structures into a common format and, third, it must create business processes that link the integrated applications. Consider the situation of a firm that has problems communicating with customers and wants to implement a leading-edge customer relationship management system to address them. Without provisions for interfacing with back office systems, connectivity will require multiple manual steps with the result that information will often be incomplete and out of date. EAI architecture can address these issues by integrating the existing ordering and inventory systems with the new CRM to eliminating manual processing. When the CRM system is executed, it calls each of the integrated applications in a sequence that corresponds to the flow of the business process. This will make it possible for the CRM to automatically initiate an order and pass customer demographics and information to the ERP system which can then initiate the manufacturing process using existing methods.

An early approach to EAI was to write hard-coded point-to-point interfaces that allow the business logic in one application to communicate with other applications. The problem with this approach is that it requires existing applications to be modified, which can introduce bugs, and also creates a considerable amount of maintenance work. This approach has been largely superseded by a new generation of software that integrates both data and business processes between a wide range of different applications, from custom mainframe applications to the latest packaged e-business solutions. These newer generation products cut IT costs by creating a modular, scalable, flexible integration environment, and by providing the ability to make transformation and routing changes through a high level language or GUI interface. Because these new tools add an independent, noninvasive layer, nothing has to be torn apart while the integration solution is developed. Companies can integrate ERP systems with legacy applications, then easily incorporate state-of-the-art e-business applications. Mainframe and other legacy systems that are already running efficiently can continue to shoulder their part of the workload while connecting seamlessly to newer Web-based solutions. Using an integration broker architecture approach can eliminate the seemingly endless number of application interfaces imposed by point-to-point integration schemes. Instead of an interface between each application, 56 interfaces if you have 8 applications, only a single interface is needed between each application and the integrator. The technological requirements for an EAI implementation are by necessity quite strict. With data transformations, business rules and workflow logic that integrates many mission-critical applications a single platform, the EAI solution must provide continuous availability, scalability and ironclad security. The key to success of the EAI solution is in its ability to reuse or preserve critical business functionality and to make the integration scheme transparent to its user community.

Establish your EAI architecture

Evaluate and select EAI tools
Syntel is a global Applications Outsourcing and e-Business company that delivers real-world technology solutions to Global 2000 corporations. Founded in 1980, Syntel's portfolio of services includes complex application development, management, product engineering, and enterprise application integration services, as well as e-Business development and integration, wireless solutions, data warehousing, CRM, and ERP.

We maximize outsourcing investments through an onsite/offshore Global Delivery Service, increasing the efficiency of how complex IT projects are delivered. Syntel's global approach also makes a significant and positive impact on speed-to-market, budgets, and quality. We deploy a custom delivery model that is a seamless extension of your IT organization to fit your business goals and a proprietary knowledge transfer methodology to guarantee knowledge continuity.