



Integration Appliances: Deliver Application Integration Projects in Days

**Think Integration Requires Complex Software?
Think again!**
January, 2006

Introduction

Today's business landscape, propelled by e-business initiatives, mergers, acquisitions, and corporate growth, has intensified the need for real-time enterprise integration. This need continues to be recognized in study after study, such as the recent Morgan Stanley and Goldman Sachs annual CIO survey, which identified application integration as one of the top three enterprise priorities for the third year running.

As a result of this need, a myriad of software-based application integration vendors, of all sizes, has emerged in the past ten years, with all of them fighting to establish their presence in a rapidly expanding market. Their software-based integration tools have consistently proven to be very complex technologies for customers, often requiring multimillion-dollar investments in implementation costs. However, homegrown, custom-code alternatives to such tools solve integration problems only in the short term and also lead to high operating costs.

CIOs today are facing constant pressure to respond faster to their business' integration needs, and, at the same time, to reduce their spending on integration projects. Therefore, the question that burns in their minds is "How can I best achieve these conflicting objectives involving time and costs?"

Categories of Integration

The first step in understanding how to deliver integration projects faster and reduce integration costs at the same time is to examine the types of integration problems faced by an enterprise today, which can be classified into three broad categories:

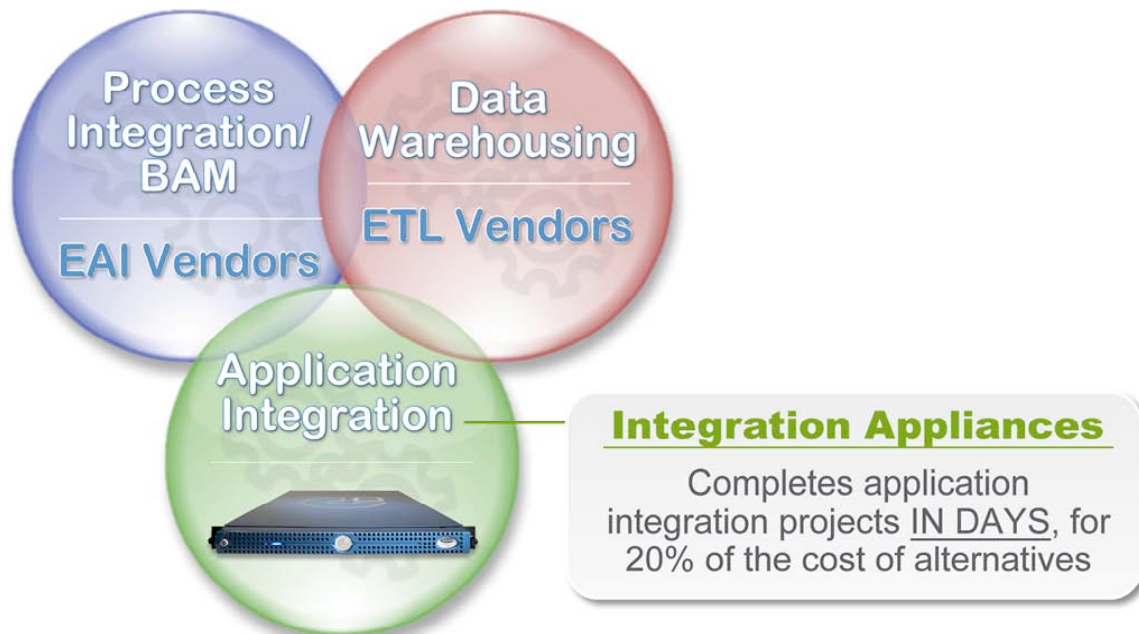
- ✓ Business process integration
- ✓ Data warehousing
- ✓ Application integration

Business process integration (BPI) projects involve automation of end-to-end processes, such as order-to-cash, credit-approval, and purchase-to-pay. They require complex business logic, involve extensive human-machine interaction, and require native connectivity to legacy applications in order to leverage the business logic. For example, a credit-approval process involves multiple steps of approval and human interaction, requires complex business logic to determine the creditworthiness of a customer, and typically needs information from multiple systems to determine an answer. Business process integration has now logically extended into a new area called Business Activity Monitoring (BAM), the need to provide a consolidated view of key performance indicators (KPIs) synthesized from different applications.

Enterprise application integration (EAI) technologies effectively solve BPI and BAM problems with a comprehensive suite of complex software modules. A complete EAI solution involves many

moving parts, including hardware, operating systems, sophisticated stacks of integration software, adapters installed at endpoints, monitoring software, and the list goes on.

Data warehousing projects are similarly complex, involving the movement of massive volumes of business information from enterprise systems to a central repository. Business users perform detailed analytics and run ad-hoc queries against this central repository using front-end reporting tools. Data warehousing projects are batch-oriented and often involve millions of transactions on a daily basis. For example, a company wanting to perform detailed analytics on its sales history for the past year uses data warehousing solutions to provide this information. Extract transform and load (ETL) vendors have successfully provided very specific batch-oriented tools to solve these types of problems.



However, a vast majority of integration problems in an enterprise are simpler than business process integration and data warehousing projects. Although no integration is *simple*, this category of integration problems, known as application integration, is mainly point-to-point and *simpler* than the complex problems already mentioned. Application integration addresses the need to synchronize and integrate business information—such as customers, suppliers, items, inventory, and orders—in a real-time manner across business applications and partners. Application integration creates a consistent view of information across the enterprise and enables businesses to make fact-based decisions and provide better customer service.

Without application integration, organizations create islands of information that lead to operating inefficiencies and customer dissatisfaction. For example, a local phone provider that did not have customer information synchronized across its billing, customer support, and technical support systems would quickly run into trouble. Additionally, since companies need to synchronize and integrate their data across applications before streamlining their business process (using process integration) or reporting on it (using data warehousing), application integration is a necessary first step for these more complex projects. The need for a single, real-time view of core business information such as customers, items, inventory, and pricing, has expanded the need for application integration today. Such projects are more numerous than process integration or data warehousing projects, have simpler requirements, and often require short delivery timeframes.

Using a Chainsaw to Open a Letter

So how are companies solving the growing need for application integration and why are these solutions so time-consuming and expensive? The answer is that some customers have attempted to use complex EAI and ETL technologies for simpler point-to-point projects. While these solutions have been very effective in solving complex integration problems, they have proved to be an overkill for the simpler point-to-point problems. Companies have not only incurred high implementation and operating costs, but also have been faced with project cycles that span many months, mainly driven by the need for sophisticated IT skill sets to develop and manage these complex solutions.

As an alternative to these complex solutions, many customers have chosen to piece together their own one-off custom built solutions for application integration using batch, SQL, VB scripts, and the like. These homegrown solutions may be adequate in the short term but are not a good long-term answer for many reasons. First, they are all one-off solutions to solve a specific need, which are not flexible enough to meet future demands. Second, while they solve a problem if everything works as it should, they are not typically built in a way that feeds the existing management and maintenance infrastructure so critical after deployment.

For example, custom code provides neither visibility into transactions nor management console notifications on data or connectivity errors. Finally, they require many person-hours to upgrade and modify by their original author, leading to long lead times for changes and higher operating costs in production. The net result is that all existing software-based application integration solutions are complex and expensive, especially over time. Why use a chainsaw to open a letter? Isn't there a simpler and more appropriate tool for the job?

The Quest for Simplicity

The only way to truly accelerate application integration projects is by reducing the complexity of the solutions used. Just tweaking existing software-based solutions cannot provide the answer—if it could, it would have happened by now. Instead, a revolutionary approach using disruptive technology is needed to simplify integration and thereby deliver the dramatic cost savings required. A model for this can be found in the simplest category of integration problems, *network integration*.



Although connecting different types of networks together is taken for granted in today's heterogeneous networking environments, this was not the case in the mid 1980's. At this time, the enterprise faced its first large-scale integration problem: connecting hosts that communicated using different protocols, such as IPX, AppleTalk, DECNet, and IP, to name only a few. Connecting hosts required each operating system to be modified in order to enable communication, a process that was time-consuming and difficult to maintain until the introduction of the network router. The multi-protocol router communicated using all the networking protocols and was able to seamlessly connect different types of networks.

If a network router could connect different networks in a quick, low-cost, and highly reliable manner, this concept could be expanded to connect applications in the same way. In 2002, the Application Router, a purpose built application integration appliance, was born.

What Is an Application Router?

An Application Router is an integrated hardware/software solution. It is a self-contained appliance that contains all the parts required to connect a customer's internal applications with each other and exchange information with its business partners. It is a solution consisting of three main components:

- ✓ Design-time software that allows a customer to graphically build and deploy integrations
- ✓ A hardware appliance that provides the run-time environment for integration projects
- ✓ A Web-based portal that provides detailed information on all data passing through the Application Router and plus essential information on the health of the router hardware

The Application Router solves both internal and external integration needs. Application Routers are being used today to solve a variety of application integration problems, for example:

Problems Solved	Systems Connected
<ul style="list-style-type: none"> » Single view of customer and SKU » Real-time dashboards for analytics » Real-time inventory synchronization » Creating Service-Oriented Architectures » Connecting remote subsidiaries and branches » Mergers, acquisitions and divestitures » Repair & warranty processing » Customer & supplier collaboration » Retail store integration » Extending EAI to quick-turnaround projects » And many more... 	<ul style="list-style-type: none"> » ERP (SAP, Oracle, JD Edwards, PeopleSoft, BAAN, QAD) » CRM including Siebel, Salesforce.com, Clarify, Remedy » All major databases including Oracle, DB2, SQL Server, Sybase, Informix » Flat-files using FTP, HTTP(s), e-mail » XML and Web Services » EDI » Middleware » NIKU » All major EAI platforms » And many more...

Application Routers can also be used to form an *Application Network*—an ecosystem of Application Routers that seamlessly communicate with each other to move data across a variety of geographically dispersed endpoints in an enterprise. For example, an Application Router in Japan can extract customer information from a local ERP application and send it to an Application Router in the United States to update the central ERP system.

Simpler = Faster Projects, Lower Costs

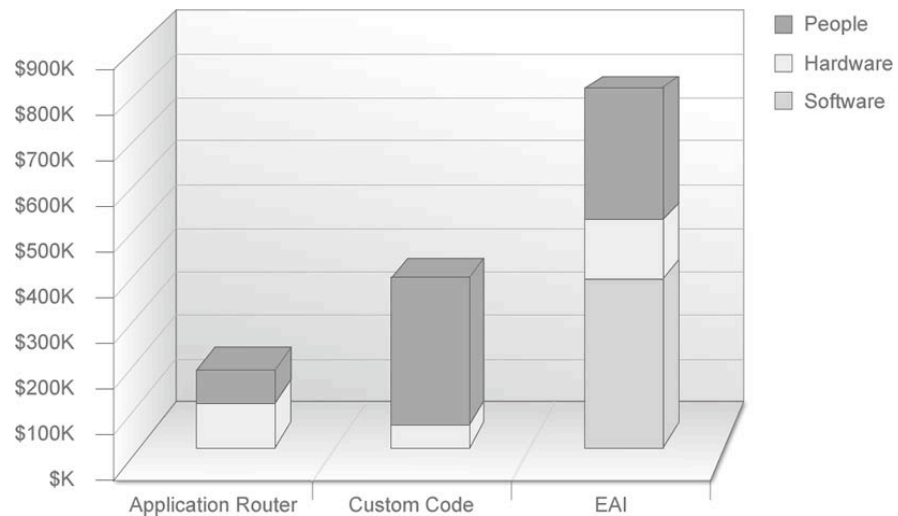
A hardware-based approach provides many benefits when compared to traditional software-based approaches to solve integration:

- ✓ **Fastest Time to Market:** Out of the box, customers plug in an appliance and create and deploy an integration solution within hours. The integrated tools provide a graphical modeling environment that allows the customer to quickly design and deploy an integration solution without ever having to write code. Because it's specifically designed for a single purpose, the appliance is by far the fastest way to connect applications. In a head-to-head benchmark study by one of the world's leading electronics manufacturing

companies, the same application integration project was implemented using both an Application Router and a traditional software stack from a leading EAI provider. The result: the Application Router was 75% faster in development time when compared to the EAI solution.

- ✓ **Lowest Costs:** The Application Router is very different from the software solutions many customers use today. It provides all of the software and hardware needed to solve application integration in one device. It includes all of the necessary connectors, the management and monitoring capabilities, and the ability to connect unlimited endpoints without additional cost. No additional technology is required, making an appliance much more cost-effective to acquire and configure. Also, the hosting costs of an appliance are about 90% cheaper than that of a hardware server. The result? Fortune 500 companies have slashed their total cost of ownership by up to 82%. The results are illustrated below:

TCO Breakdown for Application Integration Projects



Source: A global high-tech manufacturer

- ✓ **Better Utilization of Skills:** The Application Router is purpose-built for the simpler problems. Thus, it does not require sophisticated middleware programmers to write 'code' to implement integration solutions. Instead, a systems analyst or a junior applications developer can configure projects in days and deploy to production in minutes. This way, IT departments can free up their most skilled resources for complex projects while leveraging the other resources for the tactical, point-to-point problems.
- ✓ **Simplest Operations and Management.** Application Routers can be 100% monitored and managed remotely from a Web interface. As a result, maintenance, management and repair can be centralized in one location, often offshore. Additionally, because an appliance can be swapped out by simply unplugging one router and plugging in another, expensive trips to perform local troubleshooting are replaced by a simple "repair by replacement" strategy. Also, the Application Router provides proactive alert notifications on data and connectivity errors that helps IT fix the problems before business users report them. The Application Router is the world's first solution that provides High-Availability (HA) for mission-critical projects right out of the box. Traditional High-Availability solutions take a myriad of specialist resources weeks to assemble, code, test, deploy and maintain. Yet, the Application Router HA Pair can be installed in under one hour, ensuring no data loss and requiring no manual intervention upon failure – a quantum-leap for all mission-critical data centers.

- ✓ **Operational vs. Capital Expenditure.** Many companies prefer to amortize the cost of purchases rather than make large up-front commitments. Due to the nature of an appliance, Application Routers can be leased over a three year period and therefore treated as an operating cost rather than a capital expenditure.

Application Routers Extend Existing Integration Solutions

Despite its revolutionary approach, the Application Router complements existing integration technologies and improves overall enterprise integration rather than replacing it. Many Fortune 500 companies are choosing Application Routers to augment their existing integration solutions. For example, one of the world's largest electronics manufacturers uses EAI technologies extensively for business process integration problems. Recognizing the cost of extending EAI technology to simpler application integration projects as prohibitive, they—like many Fortune 500 companies—have adopted two standards for integration: EAI for process integration and Application Routers for application integration. In such a context, EAI technologies can be viewed as freight trains that use railroad backbones to transport goods (heavyweight business processes) between large stations (endpoints such as ERP and Financials). Application Routers can therefore be viewed as the trucks that transport the goods to and from the major freight train stations. In other words, appropriate purpose-built solutions are applied to the appropriate tasks.

Summary

Application Routers are radically simplifying application integration today. Just as network routers have become the de-facto standard way to connect different networks in a simple, fast, and reliable manner, Applications Routers are rapidly becoming the only logical choice for application integration. Companies like Motorola, DHL, British American Tobacco, and Solectron have adopted the Application Router standard, delivering integration projects in days, for 20% of the cost of other software-based alternatives. In the complex world of integration, companies are finding Application Routers to be the most compelling way to complete projects faster, while significantly slashing costs.

Contact Us

To learn more about Cast Iron's Application Router, please call us at 650.230.0658 or visit us online at www.castironsys.com

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