



THE MID-MARKET FAST LANE TO
ON-TIME, ON-BUDGET INTEGRATION

White Paper:

Practical ESB for the Mid-Market

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About This Document

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FusionWare Corporation is a leading provider of line-of-business (LOB) data access and intelligent integration products which simplify the integration of disparate data and applications for organizations looking to leverage their existing IT investments to optimize their business processes and enhance collaboration with their customers, partners and suppliers.

Contact info@fusionware.net to learn how the FusionWare Integration Server can help you reach your business performance goals faster.

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1 Overview

Enterprise Services Bus or ESB is quickly becoming considered a mission critical, “must-have” for Enterprises, according to technology media and analyst communities. The “E” in “ESB” stands for Enterprise. However, as I read the data and articles published by the trade press about ESB, it occurs to me that those writing these articles and analyses have an extremely limited view of what constitutes an Enterprise. Their definition seems to encompass just a sweet-spot that makes up their dream user: large, early-adopter businesses with huge infrastructure and discretionary budgets allowing them to invest in resources and software for the sole purpose of experimenting with new concepts. Unfortunately, this creates confusion and unreasonable expectations for most real-world readers, given that the problems and solutions described by the technology writers don’t coincide with the real-world requirements of real-world Enterprises.

The idealized, “dream” user actively updates or changes systems (often on a regular basis) and typically looks at solving problems on a scale far beyond most real-world Enterprises. To make matters worse, technology companies typically cater to this same, “ideal” stratum of the market by developing solutions to address leading-edge – some would say “bleeding edge” – objectives.

This is in stark contrast to the rest of the real-world Enterprises who must contend with strained resources and lower thresholds for acceptable risk on technology deployments. This is particularly true for Mid-Market Enterprises.

In this white paper, we will look at this disconnect in depth in an effort to determine what the Mid-Market requirements really are and the types of solutions that best meet their needs. Any determinations I make will be generalizations – every customer is potentially unique. Still, I can certainly identify features commonly required by Mid-Market enterprises.

This paper will explain what we understand the Mid-Market to be, what value this segment of the market can gain from an ESB, what a “Service” (the “S” in ESB) means to these customers and what features they should look for in an ESB. We’ll then explain how the FusionWare Integration Server was designed specifically to meet these requirements, by delivering the fastest path to on-time, on-budget/low-risk, high-return Web services-enabled applications..

2 What is Our Definition of the Mid-Market?

One of the misconceptions resulting from the many definitions for “Mid-Market” originates from the assumption that overall size determines the scope of need or the ability to deal with technology. In the real-world, few Enterprises make deploying the newest technology a strategic goal. There are many sizeable companies that are perfectly happy with older, legacy and mission-critical systems. When they encounter a need for connectivity or a requirement to interact with a new technology, they look for the quickest, least expensive solution that will give them the desired result. They don’t have the luxury of worrying about where they are going next with the technology unless there is an obvious and cost-effective answer to this question that they can readily determine and grasp. They are very conscious of not just the up-front costs, but the long-term costs of various solutions.

In addition, there are many Enterprises that may have larger IT investments for the size of their Enterprise relative to much larger Enterprises, but whose IT infrastructure is about the same size.

Most Mid-Market Enterprises have the following characteristics:

- Multiple and disparate Enterprise-level systems at various divisions or locations, often acquired through mergers and acquisitions.
- Most of these systems are mission critical, supported by knowledgeable but over-worked staff.
- These Enterprises are usually not in “replace” mode with any of their systems. They are generally happy with what they have, but recognize the need and value of extending their systems to customers and partners in a way that requires them to expose these applications over the Web.
- These Enterprises have close relationships with their solution providers, and look to them to assist or even take the lead in recommending or providing solutions that enable access to new technology.

Their IT departments can be characterized as follows:

- They typically consist of a combination of some internal people supplemented with consultants from their solution providers. This constitutes “their staff”.
- Their staff are business experts in the applications that they work with, and are quite knowledgeable in the systems that these applications are built on.
- While aware of new technology, they typically do not have “expertise” in newer technology, such as Java, .NET, XML and Web Services.
- Their duties often span development, administration, and operations.
- They have little spare time to learn a new technology, let alone learn a whole array of related new technologies.

- They have limited budgets. While they can more easily buy software to solve problems, increasing permanent staff is typically MUCH harder and is generally not an option.
- The decision makers and executives in their organizations typically don't care about technology. Rather, they care about results. If the IT department needs some technology to achieve a result, and it fits in the budget for getting a desired result, then they will get approval. In short, there is NO BUDGET for "playing" with technology.

3 What Value Does an ESB Bring to the Mid-Market?

The Internet has changed dramatically how businesses interact with customers, suppliers, partners and the world in general. Most businesses, large or small, can no longer ignore the new connected model of business. Businesses that cannot adapt to the new ways of interacting will find themselves unable to compete, while those that excel at quickly leveraging effective and secure connections will win business away from laggards.

In addition to this change, the Internet and Web technology has made this type of connectivity much easier. This easier approach is due to the combination of HTTP, XML and Web Services. However, these technologies alone do not reach deep enough into business processes and applications to make these connections happen.

There are two key concepts that, in conjunction with the Internet technologies mentioned above, make it easier than ever to rapidly build and deploy these connections. These concepts are Service Oriented Architecture (SOA) and ESB.

The concept of an SOA is actually not a new one, but with the advent of Web Services, and the many Web Services related standards currently evolving, the groundwork is being laid for users to rapidly and cost-effectively build connections between customers and partners. SOA also has the benefit of protecting partners and customers from changes in business procedures and underlying systems, providing both greater flexibility and greater stability.

An Enterprise Services Bus (ESB) is a technology that enables you to build a SOA interface in an Enterprise. In particular, ESB technology makes it easier to build flexible services and to build security and policies into a SOA infrastructure. There are many definitions of ESB, most of which are published by ESB vendors. The intention here is to present a description of ESB that coincides with the requirements of most Mid-Market Enterprises.

Utilizing an ESB to build services in a layered manner brings immediate benefits to the development process. In particular, you can build a service layer that provides internal services, such as price-check, inventory update, posting to an accounting system, and others. Anytime that you have a sub process that you know will be useful to other people, it becomes a candidate for building out as a service.

If you think about a Purchase Order request service, there are a number of "services" that could be exposed by the underlying systems that would be useful to anyone within the

Enterprise. These may not be something that you want to expose to the outside world without some security around them, but having them as services makes development of higher-level services much easier. It also makes your SOA less brittle, because these underlying services abstract out the various legacy systems whose functionality they expose.

Thinking about and building applications this way results in immediate savings as commonly needed components become immediately reusable. Then, as other applications are developed the savings multiply. One can think of these internal services as “de-militarized zone” services (DMZ services.)

Different divisions are able to expose their functionality without having too much concern for security, since they are building DMZ services. The services that you expose to your customers and partners, and which build on these DMZ services, then take on the burden of security.

Instead of specialized legacy programmers trying to build an SOA, the business units can focus on exposing the functionality of their systems. The more “externally” facing applications then focus on orchestrating the integrated bits beneath them, along with the external services such as those from a third-party logistics vendor. In the case of a smaller Enterprise, this may be the same group of people, but they get to build things out in simple, bite-sized chunks, that are much easier to manage.

Here are some of the benefits that you should realize with an ESB:

- It enables you to quickly build out services for your internal departments, customers and partners without significantly increasing your ongoing costs.
- It allows you to leverage existing staff and augment as you choose vs. being compelled to hire an army of consultants.
- Where outside consultants are needed to speed up deployment, you are able to hire developers who don't require highly specialized skills (Moderate experience with XML and Web Services is fairly common these days.) The results of what they can be maintained by your current staff.
- You can expect to see significant savings on all subsequent projects that you do, as you find that you can reuse DMZ services and transformations.
- You can take a build-as-you-need approach to deploying the services that are most critical knowing that these services are additive or can be easily be repurposed for other applications.

4 What Does a “Service” Mean to a Mid-Market Enterprise?

A service is simply an abstraction of a high-level process.

Consider the example of a business process that you consider a good candidate for conversion to a service; the standard PO Request/Invoice Response process.

A quick definition of this process at a high level is: A customer sends you a purchase order and you either send them a notice that you can't fulfill their request or you ship the product, send an Invoice and update your systems.

Before your SOA implementation of this service, a PO would come in either through mail, fax, phone call or email. Someone would print this off and send it to an operator. The operator would open a data entry screen and look up the customer, checking that they are a valid customer in good standing. Then they would open another screen and ensure that the order could be fulfilled. They'd post the order to multiple systems (accounting, production, inventory, and shipping), and print out an invoice or get an electronic copy and send it out in a method according to the customer's preferences. If the customer phoned, this might all happen while they're on the phone. As part of this process, the operator might get a total for the order, but before they post it, they would consult the accounting system and check the customer's outstanding payables and their credit limit to see if they are allowed to process the order directly, or if they must first obtain an account manager's approval.

Note that in this example, the service, which originally is run by a human, not an ESB, involves multiple systems and human decisions. It also involves multiple sources and destinations. Undoubtedly, when POs come in they don't all follow the same format, so the human operators are doing some ad-hoc “transformations” of the incoming format to their “canonical” understanding of what they need to enter into the corporate systems.

What changes when a business process is performed within a SOA implementation is that all of the human components and decisions are replaced with automated components and business rules. The points in the process where a human is accessed are replaced with an integrated access to the related application systems. You may still have places where you want to involve a human agent, but ultimately the more you automate, the greater the value that you get from the SOA.

Some of the things that a human operator used to do that are now automated include:

- Identification: Something came in on the fax. Is it a PO?
- Transformation: On this customer's PO, where do they put our account number for them?
- Integration: I need to access multiple systems.
- Workflow/Routing: As I access these systems, I need to make some decisions. I need some “service-level” logic. I also need to follow predefined procedures.
- Communication: I need to be able to take inputs from numerous sources, and send responses to numerous targets.

- Security: I need to be able to ensure that customer XYZ can't access customer ABC's pricing and discount information, or check each other's order status.

In short, for most Enterprises, your ESB must enable you to do all of these things. Your Enterprise may have unique, additional needs, and your ESB should have an extensibility mechanism to allow you to add functionality, but these are the most common requirements. Preferably, you want to get this functionality from a single, easy to administer source.

5 What is the Mid-Market looking for in an ESB?

Here we will look at the features and characteristics that an ESB would ideally have if designed for a typical Mid-Market company and not a giant enterprise, such as Boeing or the US Department Of Defence.

5.1 What will it do for me?

An ESB will allow you to build new functionality quickly in the immediate term, and to be able to take advantage of what you build for new applications as they become necessary. You should be able to do this with the skills that you presently have in-house with minimal training required.

An ESB should save you money and increase your agility immediately, over the option of coding the solution by hand, in the first project that you choose to work on. Over time the money that it saves you and agility that it gives you should increase as you build out a true SOA.

An ESB should also enable you to expose and automate systems designed to include numerous decision-making points by human operators. In short, your ESB should allow you to build links to your customers and partners in a cost effective fashion, without having to build out a whole new infrastructure or replace existing mission-critical systems.

5.2 What are the risks?

One of the biggest concerns that customers have about SOA is the security risk associated with anything that involves Internet technology. An ESB allows for a deployment to be fully secure, without requiring undue skills. Once having determined how to ensure a secure environment, ongoing maintenance of this security should be possible using your current staff.

You really need to consider whether you are storing credit card or other private information for your customers and partners, and if so, ensure that this data is adequately protected. Remember that most exploits are not from outside the Enterprise but are done by insiders, so if you are storing these, you should really have already thought about a lot of this! The only thing that changes here is that you will be adding HTTP and Web Services to the mix.

The ESB that you choose should provide you with tools to enable you to mitigate common security risks. Again, for the most part, security is a mindset and it is a mistake to think that just focusing on one system because it is on the Internet will make your Enterprise secure.

That said, your ESB must enable you to build strong security into your Web-facing applications.

Generally any exercise of looking at security that is not too short-sighted will result in increased security overall, so this exercise can benefit the entire IT infrastructure of your Enterprise.

Another concern is whether the ESB chosen has the ability to scale for your projected growth. Most customers' requirements can be easily handled by any existing, commercial ESB system. The tricky part is finding an ESB that doesn't require a significant hardware or software upgrade (or new systems) in order to run, even before you put load on it. In fact, there may come a time if you continue to grow, where adding hardware or upgrading hardware increases performance and makes sense. In our experience, most customers getting started with an ESB find that functionality and performance are bigger immediate concerns than scalability. That said, you need to have the confidence that your ESB solution has the ability to scale for your future growth.

6 FusionWare Integration Server – ESB for the Mid-Market

FusionWare Integration Server has been built from its inception to meet the unique needs of the Mid-Market Enterprise.

6.1 Benefits for the Mid-Market Enterprise

FusionWare Integration Server allows you to build out solutions in a layered manner. It allows you to integrate multiple mission critical or legacy systems, automate decisions around the data accessed from these systems, transform and route documents, and add workflow. All of this can be done securely, within your existing IT infrastructure, leveraging your current staff or your solution provider.

6.2 Benefits for the Solution Provider

As a solution provider, the relationship you have with your clients allows you to quickly recognize where a low cost, low risk integration solution would benefit them. In fact, they have probably approached you asking you if you know of an affordable way to extend their systems to their partners and customers.

In some cases you may have multiple customers with similar systems. With FusionWare, a solution that you build for one client can be easily resold to others. FusionWare delivers great value for your clients and repeatable, profitable offerings for your firm.

FusionWare is designed to showcase your core competencies and strengths without requiring a steep or lengthy ramp-up process to learn the technology. Your staff can get up to speed within hours, and be ready to create and deploy tested services for your clients.

Finally, the FusionWare Integration Server reduces the financial and overall business risk associated with “not to exceed” or “fixed bid” constraints in today’s competitive market. FusionWare allows you to profitably deliver integration projects on time and on budget.

The FusionWare Integration Server enables users to future-proof their existing mission critical and/or legacy applications without requiring inordinate additional investment of time and resources to experience the benefits of a Services Oriented Architecture and its inherent ESB. FusionWare delivers the fastest path to on-time, on-budget/low-risk, high-return Web services-enabled applications.

Contact info@fusionware.net to learn how the FusionWare Integration Server can help you reach your business performance goals faster.