

A large, abstract graphic on the left side of the page, consisting of several overlapping, curved, semi-transparent shapes in shades of gray, creating a sense of depth and movement.

# **HOW TO PLAN FOR TRADING-PARTNER INTEGRATION USING IDENTITY- ENABLED BUSINESS TO BUSINESS**

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## Chapter 1

# Executive Summary

Deploying new projects to improve business processes and performance is a hallmark of IT today. Successfully delivering on these initiatives frequently involves not only the enterprise, but also its trading partners. This necessitates connecting enterprise and trading-partner systems so that the parties involved can easily and efficiently exchange products, services, and information. However, as the number of trading partners grows, this becomes increasingly challenging. Attempting to establish a one-off connection for each partner and project quickly becomes financially and practically untenable. To scale to accommodate hundreds of thousands of projects and partners, the enterprise needs to:

- Replace one-off connections with a single shared interface for multiple partners
- Incorporate connectivity-related capabilities, particularly identity management
- Establish repeatable processes that can be applied to an infinite number of projects

Today's enterprise can be expected to have a growing number of projects that demand real-time connectivity with trading partners in order to exchange business-level document messages over the Internet. Many of these messages will require authorized interaction with legacy system code interfaces within enterprise firewalls. An identity-enabled business-to-business (B2B) integration solution promotes:

- Security, by providing a centralized means of authenticating, authorizing, and auditing business document messages
- Ease of use, by minimizing the number of solutions required to achieve secure connectivity with trading partners
- Scalability, by streamlining the processes associated with establishing and maintaining partner connectivity

Building a single shared interface with trading partners makes it easier and more cost-efficient for everyone involved to construct, test, and begin production-managing against your enterprise processes. As transactions flow, you can report to partners on performance and work with them to develop ways to improve effectiveness, which in turn can lower the cost of doing business with each other.

This paper provides practical information and instruction on using identity-enabled B2B to build a trading-partner integration infrastructure, including guidance on planning projects and best practices for on-ramping trading partners on a large scale. It explains why identity-enabled B2B in general, and Sun identity-enabled B2B in particular, is the best foundation for building the partner integration infrastructure.

## Chapter 2

# Planning the B2B Integration Infrastructure

Business processes have always existed as shared choreographies of messages that pass between organizations. Prior to electronic data interchange (EDI) and the Internet, they were passed by phone, fax, or traditional mail. Today, the Internet automates these message exchanges, and the message themselves are being integrated into legacy systems via integration engines. To manage the myriad integrations that emerge as more processes and partners come online, an identity-enabled, consolidated, B2B integration infrastructure provides an efficient, easy-to-deploy, scalable alternative to multiple one-off, point-to-point integrations. The following information is intended to assist you in navigating the steps involved in planning such an infrastructure.

## Selecting the first project

Your first trading-partner integration project should be selected based on factors that will affect how easy it is to implement and troubleshoot.

- **Select trading partners** that have competent IT departments with a solid understanding of B2B projects in their given industry and that already have an established message gateway for accepting and emitting standards-based message.
- **Choose standards** based on the industry in which you are operating. Choose delivery and security protocols to provide the means to securely deliver messages between organizations. Standards and protocols are discussed in greater detail in the next section of this chapter.
- **Define a simple “request out/response in” message flow** that conforms to the requirements of the industry in which you are operating. In healthcare, for example, “270/271” is shorthand for a healthcare organization sending an eligibility request out to an insurer (Health Insurance Portability and Accountability Act (HIPAA) transaction 270) and receiving back a response (HIPAA transaction 271).

## Creating a standards-based framework

Any integration infrastructure requires a message set in which data elements are grouped into a reasonable set of information for your objectives. To ensure this, the standards that you select need to have the message types that cover your communication needs. Some standards are industry-specific. Others are truly cross-industry and provide a generic set of message types that cover business transactions. Examples of cross-industry standards include:

- Accredited Standards Committee (ASC) X12 EDI
- Open Applications Group Integration Specification (OAGIS)
- Organization for the Advancement of Structured Information Standards (OASIS) universal business language (UBL)
- eXtensible Markup Language (XML) Common Business Library (CBL)

All of these standards are available free of charge to all users. The EDI standards are the oldest and most widely used. The other standards listed are based on the XML format, which is generally considered to represent the future of e-business communications. Most formats that are based on EDI are now moving towards XML versions.

There are hundreds of XML dialects that are specific to certain industries and the processes in which those industries participate. These include:

- Automotive Industry Action Group (AIAG) — automotive
- Chemical Industry Data Exchange (CIDX) — chemical
- Financial Information Exchange Markup Language (FIXML), Interactive Financial Exchange (IFX), and Society for Worldwide Interbank Financial Telecommunication (SWIFT) — financial
- HIPAA — healthcare
- Petroleum Industry Data Exchange (PIDX) — petroleum/energy
- RosettaNet — electronics

There is at least one XML- or EDI-based e-business protocol for every industry. Selecting the appropriate e-business document standard set will be crucial to the success of your project. For this reason, the B2B integration software that you choose should support the broadest range of protocols.

If you find that there is no industry-specific standard that supports your particular data communications needs, consider becoming involved in the standards process. Standards bodies wouldn't survive without participants from companies that have driving needs for B2B projects. Although participation in a standards body may seem to represent a drain on IT resources, the opportunities to network with other enterprises on this level and to affect the direction of the standard to support your specific needs is a tremendous reward.

## Exposing internal assets to external information

Integrating with outside partners means that there are internal computing services that you need to feed with data or from which you need to feed trading partners. Exposing internal services to trading partners brings a number of risks that must be managed.

- **Identity management** is of the utmost importance when allowing data in and out of your production systems. Identifying the sender or the requester and then analyzing the sender's/requester's access rights to the requested resource must be a primary processing activity for any B2B integration infrastructure. Managing access to your services and auditing the interaction with those services should be based on who your trading partner is — in other words, their identity.

Each of your trading partners should obtain and protect digital certificates such as Secure Sockets Layer (SSL) or Digital Signature certificates that will be used 1) to encrypt the message channel as messages travel over the Internet and 2) to sign and encrypt the messages themselves. This is critical to ensuring the integrity of your messages and your trading system overall.

- **Security** requirements of the B2B integration infrastructure can be met by constructing an enterprise-class set of security components in conjunction with the B2B interface. The B2B gateway can interact with identity management capabilities and with enterprise firewalls to identify the sender of incoming messages, evaluate message security, and inspect messages for safety.

## Building a library of reusable services

Identity-enabled B2B integration allows the enterprise to create reusable infrastructure assets that can be used to manage every aspect of trading-partner integration, including message flow management, security, and business activity monitoring.

- **Trading-partner message validation/certification services** provide for consistent monitoring of message formation across multiple partners and projects, detect message errors, and alert IT staff.
- **Security mechanisms** based on LDAP servers enable secure storage of trading-partner identity information assets in a directory server.
- **Authorization and authentication** provide the ability to tightly manage access by appropriately granting or denying access to requested resources.
- **XML firewalls** permit inspection of the content of messages for viruses, Trojans, or other attacks at the outside perimeter DMZ.
- **Message processing and error handling components** that are compliant with industry standards provide highly reusable code components that can make it possible to perform millions of transactions per week.
- **Message tracking and auditing services** provide a common user interface to deliver information about messages for tracking and auditing purposes, which is crucial for locating breakdowns in the process and providing proof of message delivery.
- **Business activity monitoring/business intelligence** provides the ability to detect trends and analyze them, reduce costs, increase effectiveness, and improve business agility.

As you build the library of services that represent multiple trading partners and your interactions with them, you will probably want to implement a service registry where all the artifacts for each service — including description, rules, and schema — can be found and reviewed by potential or existing partners.

You will also find that trading message activity patterns can offer a wealth of information about peak utilizations, on-demand forecasting, and other characteristics of your business that might be good candidates for business activity monitoring and business intelligence data mining.

## Chapter 3

# Best Practices: On-Ramping Trading Partners on a Large Scale

One of the most challenging tasks of B2B integration is the rapid on-ramping of multiple trading partners. Each has its own unique IT procedures and way of dealing with a request to integrate with a trading-partner network. As a result, it's not uncommon for enterprise IT shops to report that they are only able to connect three, four, or possibly a dozen trading partners over a several-month period. At that rate, it could take years to implement B2B integration on a large scale. Sun makes the following recommendations to speed the process and eliminate the roadblocks.

1. Establish a Center of Excellence that includes:
  - Introductory information explaining the nature of trading-partner B2B transactions with your company
  - Information specific to each project, including the business processes, integration specifications, trading-partner agreements, and so forth
  - Web forms for trading-partner self-registration to complete the trading-partner agreement
  - Information about testing and certification services that your company utilizes to validate that trading partners are ready to connect to your production network
  - Downloadable, small-footprint integration software, configured for specific projects, that trading partners can download and use to integrate with their back-end systems
2. Implement a third-party testing and certification service or invest in software to use in-house. This software will feed back to the new trading partners exactly where they are successfully delivering data, and where their processes, formats, or security mechanisms are broken.
3. Assign a team of experienced IT engineers and project managers who are properly trained in Sun identity-enabled B2B integration to be responsible for the Center of Excellence.

Taking these steps as you integrate growing numbers of partners into your B2B infrastructure will enable you to establish patterns that can increasingly improve efficiency and quality control over the full lifecycle of a large-scale trading-partner network.

## Chapter 4

# Sun's Identity-Enabled Business-to-Business (B2B) Solution

Sun's Identity-Enabled B2B solution provides the tools that organizations need to design and deliver large-scale partner ecosystems. Sun's solution provides the following components to ensure that your B2B integration infrastructure can be deployed successfully and managed effectively.

- **Trading-partner management**

Identity-enabled B2B integration from Sun provides a single streamlined view into trading relationships through a central repository for trading-partner information. This dramatically lowers the operational requirements for managing large numbers of B2B trading partners.

- **Message tracking and auditing**

Some of the major functionality of Sun's identity-enabled B2B integration solution is to ensure that sender and recipient identities are authenticated, that documents are not tampered with in transit, and that all communications with trading partners are logged in an auditable store.

- **Third-party message validation services integration**

Many enterprises elect to outsource message validation services to a third party. Sun's identity-enabled B2B solution facilitates a seamless integration of these third-party services with the internally developed B2B integration infrastructure.

- **Standards-based document and delivery protocols**

Standards-based protocols provide the enterprise with widely accepted formats for exchanging business documents with trading partners and ensure guaranteed, auditable delivery.

- **Standards-based security services**

Sun's identity-enabled approach to B2B integration provides strong support for message encryption, identity synchronization, and digital certificates, helping to lower the inherent risks of enabling access to enterprise assets from outside the enterprise.

- **LDAP-based directory server**

Sun Java System Directory Server Enterprise Edition, a component of Sun's identity management solution, provides more than just a repository for identity data, it also offers a means of providing easy yet secure access to information in multiple repositories.

- **Add-on components for business activity monitoring/business intelligence**  
Sun SeeBeyond eBAM™ Studio, a component of the Sun Java Composite Applications Platform Suite (Java CAPS), provides real-time monitoring and auditing of messaging and data-level process streams. It also provides Business Process Execution Language (BPEL) capabilities, which can provide high-level direction and execution of complex business processes between partners and entire partner ecosystems.
- **Complete services to support B2B integration**  
Sun and its partners offer a comprehensive set of consulting services and training to support B2B integration infrastructure development at every stage, from planning to deployment. Using best practices and proven methodologies, Sun provides businesses with the information and tools to successfully jump-start B2B projects.

## Chapter 5

# Conclusion

As corporate business process owners reach out to extend and improve interactions with their companies and the entities with whom they trade information, there will be a growing need to effectively plan, develop, and deploy sophisticated B2B integration infrastructures. Sun's identity-enabled approach to B2B integration smoothes the way by delivering:

- Security, through market-leading identity management that provides access control and a central repository of partner data
- Ease of use, by consolidating B2B integration and identity management to streamline deployment
- Scalability, with the proven ability to conduct millions of partner transactions a day

Sun's Identity-Enabled B2B integration is the only solution for establishing and managing trading-partner ecosystems that delivers this powerful combination of capabilities.

To learn more about Sun's identity-enabled approach to B2B integration, visit [sun.com/b2b](http://sun.com/b2b).

