



Grey Wolf's
vision is
“Completing SX”

APIs vs. SOA

Integrations with SX without the ION Investment

There has been a lot of hype over Service Oriented Architecture (SOA), Enterprise Service Architecture (ESB) and Intelligent Open Network (ION) recently.

This White Paper addresses how Application Programming Interfaces (APIs) become a simple, cost-effective and robust solution to application integration versus the expense and complexity of SOA/ESB/ION implementations.

Infor's ION is based on a similar architecture as Microsoft BizTalk, IBM WebSphere and Oracle SOA Suite which is primarily a message-based middleware technology. Basically, it is flat files (XML) being passed back and forth.

Grey Wolf's APIs are based upon direct integration with SX instead of a disconnected, near-real time integration. Direct integration allows for better performance, lower cost, quicker implementation and more functionality. APIs make direct calls in the native language of the applications. The APIs for SX are actually Progress calls and simulate the functionality of an SX user.

Citing experts and resources, this White Paper substantiates why APIs are a better solution than SOA/ESB.

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SOA/ESB/ION Overview

There are a lot of definitions for Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB). And actually the definitions are irrelevant. What makes a difference is what is trying to be achieved and the architecture that achieves that objective.

Arguably the first company to define ESB was the Sonic team at Progress Software (yes, the same company that SX is based upon). That team defined ESB as “an infrastructure platform...that enables interoperability across dissimilar standards which often exist in modern computing environments.”

Clear as mud...right?

Maybe an easier way to look at ESB is with a diagram. The following is Microsoft’s BizTalk diagram.



Each of the “knobs” is an application and the ESB is the “bus” that allows the applications to communicate with each other.

In Charles Philips’ (CEO of Infor) presentation at Inforum 2013, he used the analogy of all applications speaking French for integration as the architecture of ION. On Infor’s web site, “Infor ION, all applications publish in XML, the language of the internet; and every business event or transaction produces an XML document that’s published and subscribed to by every application that uses that document.” XML becomes the French language in Philips’ analogy.

So effectively, Infor ION is an ESB technology based upon SOA. It actually has several competitors that have been in existence for quite some time:

- Microsoft BizTalk Server
- IBM WebSphere
- Oracle SOA Suite
- Sonic ESB
- Windows Azure Service Bus
- JBoss ESB
- Red Hat Fuse ESB

While Progress was the originator of the ESB technology, they have since sold off that portion of the company to Aurea Software.

According to Forrester Research, ESBs provide functionality that is bundled into five functional areas as follows:

- **Architecture.** The main issues covered in this area are support for fault tolerance, scalability and throughput, the ability to federate with other ESBs, the supported topologies, and features supporting extensibility.
- **Connection.** The key features in this group include support for a wide range of messaging standards, communications protocols, and connectivity alternatives.
- **Mediation.** This group deals with key requirements related to dynamic provisioning of resources, transformation and mapping support, transaction management, policy metamodel features, registry support, and service-level agreement coordination.
- **Orchestration.** This layer provides lightweight orchestration of services and more-robust business process execution language (BPEL) and/or business process modeling notation (BPMN) support.
- **Change and control.** The main components in this group are design tooling, life-cycle management, technical monitoring, and security.

The function areas exist due to the “decoupling” of the integration from the applications. To ensure that the integration is reliable, the functionality must exist to confirm each file transfer is completed.

Pricing for ESB technology is typically only affordable by the larger companies. Since ESB technology is generic in format, it requires customization and configuration to meet specific integration requirements. Just the software alone for Microsoft BizTalk Server can range from \$2,500 to \$11,000 per core processor. In a virtualized environment, multiple cores are standard. So pricing can become very cost prohibitive for “one-off” implementations. Typically Microsoft’s pricing model is to be the least expensive provider for enterprise software. Oracle, IBM and Infor are typically more expensive due to their pricing models.

Progress addressed the question of when does ESB become important. They developed three rules of thumb:

- **Rule 1:** “When the number of interdependencies between Services, Processes and Schemas, becomes more than twice the aggregate number of those elements.”
Translation: when you have more than twice the number of connections than there are applications to integrate.
- **Rule 2:** “When the process objectives of the SOA begin to span multiple geographically distributed locations and/or federated organizational boundaries.”
Translation: when your applications run on several servers in different physical locations.
- **Rule 3:** “When you need to integrate services using disparate interaction models.”
Translation: when your applications don’t play well with other applications.

Typically, only very large organizations meet all three rules. Smaller and medium sized organizations will not typically meet all three rules.

The bottom line is that Infor ION is really a messaging bus system (ESB) that passes XML files back and forth. It is only near-real time technology and is based upon files being sent and received between applications.

APIs Overview

APIs stand for Application Programming Interface. In simple terms (and according to Wikipedia.com), APIs are specifications of how some software components should interact with each other.

In the past and currently, APIs are typically written for a specific application. So each application will have their own set of APIs. So to use Infor CEO Charles Philip's analogy, each application would speak in their own language – be it French, German, English, etc. These languages in technology terms would be .NET, Java, XML, etc. And then the APIs would translate from one language to another for each application.

There are some software companies (i.e. 3scale, IBM, Mashery) that are creating generic APIs, but that is more “bleeding edge” than most companies are ready for.

APIs are distinct from SOA technologies, but they utilize some of the same capabilities like monitoring and shaping open API traffic. This is why some SOA vendors have been moving into API management technology.

Some of the major content providers are starting to expose their APIs to developers such that the developers create integration with them. Some of the players include:

- Amazon
- Google
- Facebook
- Twitter

APIs are not a flat-file approach. They are an interface directly into the application. This creates a true real-time integration.

APIs in themselves actually do nothing. It requires an adapter to create the business logic implementing the API calls. Since APIs are not generic, it requires a programmer to create the application/adaptor to exploit the integration created by each API.

There are two types of APIs: data level and application level. Data level APIs read/write directly to the database. These are very simple APIs and intuitive in their use.

On the other hand, application level APIs are complex and difficult to create. They focus on exposing the business logic in the application. In SX, examples of application level APIs are customer pricing, order creation/modification and AP invoice creation. Since none of the business logic for those APIs are in the data directly, the APIs need to call the application logic similar to a “headless user.”

In the SX arena, there currently are only two companies that have APIs for the SX application. They are Infor and Grey Wolf Systems. Both companies have had APIs for several years.

Both Infor and Grey Wolf APIs utilize the OpenEdge App Server technology. This allows for

- multiple versions of APIs to co-exist on the server,
- real-time read and write to the OpenEdge database and SX application, and
- support for .NET, Java and web services in adapter calls.

Grey Wolf has created a very basic adapter named “Tester.” The Tester is a .NET application that prevents finger pointing on API issues. The Tester allows isolation of issues to the adapter/application calling the APIs or to the APIs themselves.

In addition, the source code to the Tester has been made available to allow SX user organizations to create their own adapters for specific use.

The bottom line is that Infor and Grey Wolf have APIs available for SX users. These APIs provide real-time integration with SX and allow for unlimited application integration.

SOA/ESB/ION vs. APIs for SX Integration

Now comes the \$64,000 question...which is better for SX users? Should SX users commit to the ION approach or to the API approach?

Below are the strengths (and thus weaknesses of the other) of each technology. Using this and applying it to your business needs, you and your organization should be able to determine the appropriate technology for your requirements.

Infor ION	Infor/Grey Wolf APIs
Support multiple applications utilizing XML standards	Real-time integration
Able to create workflows and alerts	Support for multiple versions at the same time
“Uncoupled” for multiple application support	Less expensive for integration software
Infor endorsed	Less complex to create integration (thus less expensive)
	Support for both data and application integration
	Faster performance from less overhead

References

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About Grey Wolf Systems

Headquartered in Colorado Springs, Grey Wolf Systems focuses on information technology services for wholesale distributors. Focusing on SX users, Grey Wolf is able to provide professional services and software as a service (SaaS) solutions that are specific to SX.

Founded in 1993, Grey Wolf just celebrated over 20 years of service to its customers. While the technology provided over the years has changed, currently Grey Wolf offers EDI, data management, data warehousing, colocation/hosted facilities and online backup solutions.

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