



## EXPERT OPINION:

# Balancing customers and consolidation with SOA-based Business Services



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Service providers face increasingly complex integration challenges as they attempt to reconcile the conflicting demands of customers and consolidation. The TM Forum's Solution Frameworks (NGOSS) have always supported integration by supporting interoperability. Now the Forum takes interoperability to another level with the development of SOA-based Business Services and Platforms that help growing enterprises evolve from silos to service-oriented enterprises. And data interoperability remains the key to effective integration.

**1. Customers and consolidation increase the pressure on integration**

Service providers are finding it more difficult to attract and retain well-informed customers who demand better deals on new services and have lower tolerance for delays. Prospects can make detailed comparisons of products, prices and providers before engaging.

New customers are attracted by products which provide services, prices or terms of use that differentiate a provider from the competition. Agile product and portfolio management requires tight integration between the systems that support marketing, product design, service development, resource management, and supplier interaction.

The widespread adoption of service delivery platforms (SDPs) to support new and converged services creates a new set of integration requirements that link SDPs with OSS and networks in the context of a service delivery framework.

To round out their offerings to customers, service providers increasingly rely on a distributed value chain in which each participating enterprise may play multiple roles – customer, supplier, and partner. As the value chain becomes a conduit for assembling services, reselling products, and executing complex financial settlements, the scope of integration is dramatically extended.

In an effort to reduce operational costs and improve efficiency, enterprises are increasingly turning to system consolidation. Significant savings in licensing and customisation can often be achieved by identifying redundant applications and migrating to a single vendor and version. But these changes must be supported by new or modified integration into the selected applications.

Consolidation at the corporate level is also becoming more frequent, as mergers and acquisitions demand integration. But these activities also make integration more challenging

by forcing the combination of systems and processes that would not have co-existed otherwise. The need for more interconnection between more systems, often with widely disparate interfaces, increases the cost and complexity of integration.

**2. Solution Frameworks support integration through interoperability**

The needs of agile product development, service delivery frameworks, distributed value chains, system consolidation, and M&A activities all combine to put intense pressure on integration activities.

An important metric of successful integration is interoperability within and between enterprises. The TM Forum Solution Frameworks (NGOSS) have supported interoperability since their inception by linking a Shared Information Framework (SID) and a comprehensive Process Framework (eTOM).

An initial and continuing focus of interoperability is based on the mapping of selected processes and data elements from the Frameworks against system boundaries defined by an Application Framework (TAM), in the context of a distributed Integration Framework architecture that spans business, system, implementation, and deployment views. The resulting interface specifications have influenced in-house and commercial applications, integration projects, and RFI/RFP activities. Development of these specifications continues under the TM Forum Interface Program.

In the past, interoperability was primarily targeted within the enterprise, because interaction between enterprises was relatively infrequent compared to internal processing. But the advent of service delivery frameworks and the widespread adoption of distributed value chain concepts emphasise much more frequent interaction – and therefore the importance of integration – between enterprises, giving interoperability an added dimension. ▶

**VanillaPlus Jargon Buster**

**RFI/RFP** = Request for Information/Proposal

**SOA** = Service Oriented Architecture



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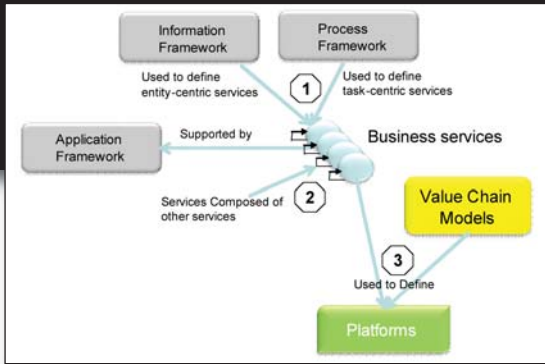


Figure 1: Frameworks, Business Services, and Platforms

### 3. Getting from SOA to SOE with Business Services and Platforms

More recently, the Solution Frameworks have provided a solid basis for interoperability in the context of a service-oriented architecture (SOA). In addition to the process and data mappings used by the earlier interface-oriented approach, the Frameworks are leveraged to identify and 'right-size' SOA services, and then compose them into Business Services that provide context, including limits and conditions on system interaction, patterns of message exchange, and expected levels of service.

As shown in Figure 1, task-centric Business Services are derived from fine-grained processes in the Process Framework, while larger entity-centric Business Services are mapped to Aggregate Business Entities (ABEs) in the Information Framework. Both types of Business Services are mapped to Application Framework "capabilities" that represent specific application functions. The largest Business Services are grouped into Platforms that support both internal and external enterprise requirements.

Platforms are the building blocks of enterprise architecture. Platforms reflect the focus of an enterprise, set out its top-level approach to service delivery, and clarify the constraints imposed by the value chains in which the enterprise operates.

Organisations are increasingly interested not only in creating an SOA, but in becoming service-oriented enterprises (SOEs). According to the TM Forum definition, an SOE is a modular organisation that groups process, information, systems, and people to provide reusable business services with which the enterprise operates. The SOA-based Business Services and Platforms developed by the TM Forum can help service providers evolve from groups of silos into service-oriented enterprises that are highly integrated both internally and externally.

### 4. Data interoperability remains the key to effective integration

Considering the pressure from the aforementioned sources, integration should be as effective as possible, so it is important to understand different types of interoperability. Interface interoperability can be achieved using enterprise application integration platforms, enterprise service buses (ESBs), and other components, alone or in combination. In contrast, data interoperability requires and implements an understanding of the semantics of the data passed through system interfaces, as well as their data syntax.

Although interface interoperability and data interoperability can coexist, data interoperability is often neglected, leading to intractable errors caused by semantic mismatches between data elements in linked systems. A common data model architecture can provide an ideal solution because it allows mapping, translation and aggregation to be defined between each data source or destination and a shared data model, eliminating tedious, error-prone, and ill-controlled pair-wise definition.

A production-proven product like Progress® DataXtend® Semantic Integrator offers the best approach to data interoperability because it supports semantic as well as syntactical mapping and translation, using a common data model as the focal point for all mapping and transformation. Integration that uses such an architecture can minimise development and maintenance costs, support enterprise-level governance and deep impact analysis, run in a distributed environment, and deploy compatibly with major integration technologies.

A simple analogy, shown in Figure 2, illustrates the difference between interface interoperability and data interoperability. Initially, systems are integrated pair-wise with poor interoperability ("spaghetti"). Next, an ESB is installed and all systems are interfaced to the ESB instead of each other. This achieves interface interoperability, but does not address data interoperability, creating a superficial appearance of full interoperability ("spaghetti in a box"). Finally, data integration is addressed using a common model-based platform compatible with the ESB, aligning data as well as interfaces, and achieving full interoperability.

"It is important to distinguish interface interoperability from data interoperability."

John Wilmes is co-author of "Application Integration using the SID" (2008) and "Business Transformation with TM Forum Solution Frameworks and SOA" (2009).

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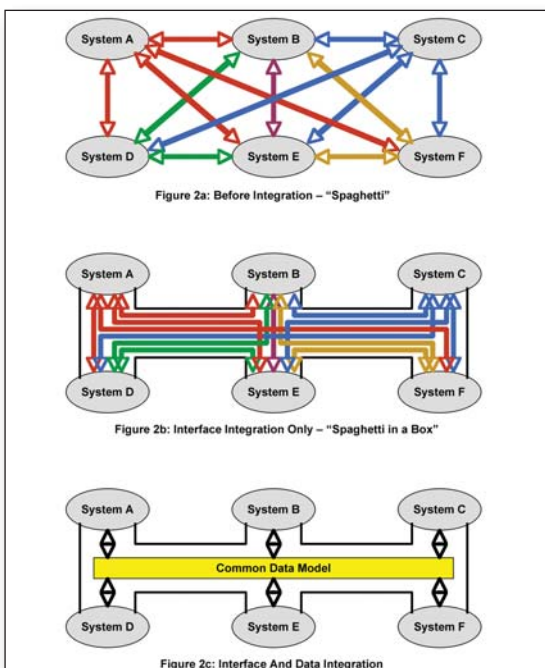


Figure 2: Levels of integration (Logical views)