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Message Driven SOA -- Enterprise Service Oriented Architecture

The SOA Competitive Landscape Redefined

Cutting costs and improving productivity with Message-Driven SOA

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THE SOA COMPETITIVE LANDSCAPE REDEFINED

Cutting costs and improving productivity with a Message-Driven Approach

Executive Summary

These are very challenging times for Chief Information Officers (CIOs). Coming on the heels of the “build to expand at all costs” era, CIOs are now tasked with “doing more with less”. This dramatic reversal of objectives, a fluctuating economy and rapidly shifting business dynamics are forcing businesses to scrutinize each aspect of their IT infrastructure.

Enterprise IT infrastructures consist of an applications layer deployed on top of networking and compute layers. While the underlying standardized layers have matured to high levels of operational and cost efficiencies, the process of integrating applications has been riddled with several issues currently being worked on by System Integrators (SI) and Service Oriented Architecture (SOA) platform vendors. However, extending current process-driven solutions built on a centralized hub-and-spoke architecture is proving to be a very expensive proposition that falls short of enterprise performance, reliability, scalability and affordability goals.

Fiorano believes that CIOs should not be held hostage by spiraling integration and SOA implementation complexities.

At a business level, enterprise-wide co-ordination of projects, proper organization and aggressive negotiation with software vendors can yield some savings. The highest gains can be achieved, however, by addressing the architecture-level problems at both an application and infrastructure level that undermine the efficiencies and scalability of current SOA solutions.

Fiorano’s Message-Driven SOA platform is a new paradigm in distributed application integration, with a Service-Oriented Application Architecture (SOA) deployed over a standards-based, peer-to-peer Enterprise Service Bus built with years of customer feedback.

Lightweight Fiorano peer daemons can be installed on each node of an enterprise network – thus enabling linear scalability and a true end-to-end enterprise solution. In an era of *doing more with less*, Fiorano enables the next wave of service-oriented, comprehensive and affordable solutions that unify converging Web Services, Integration and process management within an enterprise.

With current solutions, CIOs are limited to two alternatives while solving their applications integration requirements:

- Extend the traditional back-end integration architecture (low risk/low return), or,
- Deploy the next generation of Service-Oriented integration architectures (high risk/high return)

Fiorano offers a new alternative that protects current investments and offers a migratory path to the next wave of enterprise integration and process-management solutions (**low risk/high return**) as discussed in this document.

Enterprise SOA requirements

Despite a fluctuating economy, leading analysts report that integration and SOA continue to be a critical issue. Most global 3500 companies are planning on spending an annual *average of \$6.4 million* on SOA and application integration. The high costs are largely driven by the sheer complexity and hence customization costs while extending current SOA solutions.

Enterprise executives are primarily focused on managing the integration costs and strategic implications of their solutions. Besides the complexity, other key cost-drivers include: dynamically changing market conditions, the need for a core-to-the-edge extensibility of the enterprise, and a lack of ability to clearly

estimate project costs and time to completion. At an organizational and business level, enterprises can initiate measures to reduce costs as indicated in Table 1.

Table 1: Total SOA/Integration savings using Forrester's guidelines

Item	Traditional Cost	Using Analyst Guidelines	Explanation
Software Maintenance	\$610,471	\$469,948	20.33% yearly maintenance fees instead of two-year license renewals
Internal Maintenance Staff	\$734,645	\$1,281,746	Added experienced integration manager at \$137,025 yearly salary
Basic Software Cost	\$322,121	\$322,121	No change
Adapter Cost	\$316,833	\$256,833	Purchased enterprise-wide licenses for Siebel and SAP adapters
Services Cost	\$2,939,191	\$1,968,445	Experienced integration manager reduces services consumption
Internal project staff	\$3,896,137	\$2,609,335	Reflects increased efficiency of experienced manager and staff
Total	\$8,819,398	\$6,908,428	Total Savings: \$1,910,970

Note: Five year cost in USD of integrating one custom, two SAP, and two Oracle systems.

After realizing these first-pass savings, Message-Driven SOA enables you to *achieve significantly greater savings*. Beyond managing costs, enterprise SOA requirements consist of –

Business-User requirements: Integrated enterprise applications are tools as used by business-users to create, deploy and monitor their workflows and business processes. A decision-maker at a major manufacturing supplier, for instance, needs to set up a detailed workflow that connects customers, suppliers, sales force, inventory control systems and other services. Business-users need the *drag-and-drop simplicity* of composing solutions by connecting pre-built Services within a service-oriented framework that can provide real-time information reliably.

Developer requirements: Whether SOA orchestration is outsourced to system-integrators or delivered by in-house resources, developers need standards-based solutions that can be easily deployed – with an increasing preference for remote administration. Governance and Security, both inside and outside corporate firewalls, continue to remain a key concern. Ideally, developers need to be able to modify or add new services to dynamically extend solutions for their business-users without any application downtime. Addition of new users or partners with appropriate access controls needs to be trivially simple. Message-driven SOA addresses these multiple-level concerns as summarized in Table 2.

Table 2: Best-of-Incumbent SOA solutions versus Message-Driven SOA

Enterprise Requirements	Best-Of-Incumbents	Message-Driven SOA Advantage
Unified SOA Platform	Fragmented products glued together with inherent inefficiencies	Standards-based, unified platform for services
Performance	All data and control communication forced through the 'hub' - limits performance	Fully distributed peer-to-peer data transfers, high performance and scalable platform
Scalability	Limited and Expensive (costs grow linearly with each incremental service added in the workflow); Process-driven application model limits performance with a single thread executing each process-context	Peer-to-peer distributed architecture enhances multi-threading, pipelining and distributed Service execution
Dynamic Workflow	Not possible. Each change requires an	Message-driven model allows real-time

Modifications	application downtime.	changes with no downtime penalties
Deploy, Monitor, and Debug support	Limited and Inflexible; Debug can take up to 60% of developers' time	Debugging of "in-flight data" & service-level administration possible
Development Complexity	High. Routing between services needs to be coded into the services themselves reducing any re-usability for the service components	Automatic configuration of data-flows reduces coding requirements dramatically and increases reliability
Usage Model	Service components often require customized code	Service components easily reused
Ease of Development & Usability by business-user	Low on both counts due to custom-code for each new application. Process languages (BPEL) not easily understood by business users	Data-flow semantics simplify flow composition and modification. Easy on-the-fly changes to running processes

Unlike traditional process-driven SOA systems, Message-Driven SOA platforms, with their data-flow application model and peer-to-peer distributed infrastructure architecture are designed to address the fundamental problems of performance, scalability, reliability and affordability.

For a detailed analysis of process vs. message-driven SOA, send us an email at: info@fiorano.com

Summary

Traditionally, enterprise CIOs have been limited to two alternatives while evaluating their next SOA solution: Extend the traditional process-driven SOA architecture (low risk/return), or, deploy the next generation of service-oriented, peer-to-peer SOA architectures (higher risk/return). As discussed in this document, Message-Driven SOA now offers a proven third alternative that protects current investments *and* offers a migratory path to the next generation of solutions (low risk/high returns). The unique and sustainable advantages offered by Message-Driven SOA include:

- Benefits of a true peer-to-peer infrastructure architecture for distributed data and applications, combined with a simple, message-driven application model to drive reuse and ease extensibility
- Proven affordability driven by faster implementation cycles and integrated toolsets
- The drag-and-drop simplicity of using reusable services to deploy and monitor workflows
- A broad spectrum of developer-friendly benefits such as - remote administration, simplified design, deployment, monitoring and debugging of tasks and access to vast libraries of third-party services and tools developers
- Industry standards-based with hundreds of available adapters and based on messaging standards such as JMS

For a more detailed competitive analysis or to get an estimate of savings possible with Message-Driven SOA for your unique requirements, send email to: info@fiorano.com

About Fiorano Software

Fiorano Software (www.fiorano.com) is a leading provider of enterprise class business process integration and messaging infrastructure technology. Fiorano's network-centric solutions set a new paradigm in ROI, performance, interoperability and scalability. Global leaders including Fortune 500 companies such as Boeing, British Telecom, Credit Agricole Titres, Lockheed Martin, NASA, POSCO, Qwest Communications, Schlumberger and Vodafone among others have used Fiorano technology to deploy their enterprise nervous systems.