

ZAPTHINK ZAPNOTE™

INFRAVIO X-REGISTRY *MANAGING SERVICE CONSUMERS WITH A COMPREHENSIVE REGISTRY SOLUTION*

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Abstract

A management infrastructure is a critical requirement for building and running Service-Oriented Architectures (SOAs). In particular, managing the relationship between Web Service providers (the systems that provide Services) and the Web Service consumers (the systems that utilize these Services) in order to insure loose coupling between consumers and providers is especially important to maintain two core benefits of SOA: asset reuse and business agility.

While there are many management products on the market that enable IT personnel to manage Service providers, Infracore's X-registry is one of the few products on the market today that also allows for the management of Service consumers. Through the use of Web Services Delivery Contracts that specify Service consumers' security, protocol, and service level requirements, X-registry fills the missing link in the SOA management chain: the management of Service consumers.

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Beyond UDDI and WSDL

The most important tenet or *idée forte* of Service-Oriented Architecture is the *loose coupling* between Service providers (the software that offers a Web Service) and Service consumers (the software that accesses the Service). When Service providers and consumers are loosely coupled, the team that controls one need not control the other. The Web Services Description Language (WSDL) Service contract ostensibly provides all the information that the Service consumer needs to bind to the Service. As long as the Service provider supports the contract, then consumers should have no problem accessing the Service, regardless of the inner workings of either piece of software.

In addition to WSDL, The Universal Description, Discovery, and Integration (UDDI) standard specifies some of the critical publication and discovery capabilities IT organizations need to provide location independence and thus a measure of loose coupling to SOAs. With Service discovery based on UDDI, a Service consumer need not be aware of the location of a Service; instead, it can look up that location (as well as additional binding information) dynamically at runtime. In this way, a Service provider can change its location and other binding parameters without breaking the consumers of the Service – an essential aspect of loose coupling.

Unfortunately, WSDL Service contracts and UDDI directories are actually insufficient to guarantee loose coupling between Service providers and consumers. The UDDI standard provides sufficient search capabilities for runtime discovery, as well as some of the capabilities developers need during design time when they are looking for the right Service – but UDDI alone does not specify all the metadata concerning Service providers, including security and reliability metadata. Furthermore, UDDI only describes Service providers; it says nothing about the Service consumers. If different consumers with different requirements or capabilities might access the same Web Service, UDDI alone cannot specify to the Service provider each consumer's different requirements. Therefore, it is up to products that implement UDDI to augment the functionality included in the standard with additional features that complete the necessary set of discovery capabilities, rounding out a registry's metadata about Service providers, and in particular, details about the Service consumers that are necessary to maintain loose coupling.

Augmenting Registry Functionality with Infravio X-registry

Infravio *X-registry* addresses these missing elements of UDDI by providing companies with a federated corporate Services directory combined with an online marketplace application where publishers of Web Services can promote their Web Services to IT professionals who can utilize or purchase them. Enterprises can use X-registry to promote, facilitate, and improve the use and reuse of their Web Services while ensuring proper control and support. The product provides companies with an online catalog, which acts as a single point of access for information about all Web Services in the enterprise. Companies can deploy X-registry as a single or federated corporate registry, making X-registry a fully scalable solution. It can also exist on its own or can be used to consolidate metadata from existing UDDI and ebXML registries. It stores both technical and business specifications, and contains information

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about both Service provider and Service consumer applications. Therefore, where UDDI registries can only store links to WSDL files, X-registry is a true repository, and can store objects such as WSDL files or other documents associated with WSDL.

Infravio X-registry acts as a central repository of available Services within an enterprise, including the configurations, implementation requirements, and physical locations of every Service. X-registry can also store *Web Services Delivery Contracts*, which are Service contracts that offer more capabilities than a standard WSDL contract by defining the agreed-upon terms of delivery of a Web Service to a specific consumer application. Such terms can include the security policy, data transformation requirements, service-level agreements, and routing rules that apply to particular consumers of a Service. In other words, Web Services Delivery Contracts complement the provider focus of WSDL Service contracts by describing the necessary metadata about Service consumers. The combination of X-registry with a UDDI registry, or X-registry alone, can therefore ensure loose coupling between providers and consumers where UDDI registries alone fall short.

In addition, X-registry provides a process and governance model, enforcing a process workflow for authorization, lifecycle management, and support so that individuals in different roles within the organization can administer and control their Web Services assets. These capabilities help round out the design time discovery capabilities of a registry solution. Where a simple UDDI registry will provide some metadata search capabilities for developers, X-registry offers much broader search, management, and security solutions for a range of users in the enterprise with different requirements and duties.

X-registry also offers the following functionality:

- Service provider and Service consumer governance – X-registry provides control over Web Service providers, consumers, and their interactions.
- Provisioning process enforcement – X-registry enforces a process model for the registration, authorization and tracking of Services across every step of the Services' lifecycle. IT staff can use X-registry to try a Service, download the WSDL and XML schema associated with that Service, request access to the Service and receive authorization for its use.
- Roles-based views and functionality – X-registry uses a roles-based authorization system to manage permissions and functions, which companies can customize for each member of their IT staff involved in the production, use, and administration of the Services.
- Notification of Services – Publishers of Web Services can use X-registry to notify the users of those Services about support issues, including planned or unplanned outages; lifecycle management issues such as new versions of Services or the deprecation of a Service; and business-related issues such as quality of service or service-level agreement conditions
- Business and technical information – In addition to WSDL and XML schemas, X-registry provides a repository of client stubs for various programming environments. Users can also view business information about the Service including pricing and other business terms and conditions.
- Custom taxonomies and metadata – X-registry is extensible, allowing companies to store additional forms of metadata. These metadata can include different categorizations or taxonomies of Services.
- WS-I compliance checking – X-registry includes a utility for checking the WS-I conformance of an enterprise's registered Web Services.

X-registry is a part of Infravio's *Ensemble* suite. In addition to X-registry, which provides a solution for managing Web Services as strategic assets, Ensemble includes *X-broker*, a

distributed run-time broker that enforces the Web Services Delivery Contract ensuring secure and reliable Web Services, and *X-console*, which is a Web Services performance monitoring solution.

Infravio Products

Infravio X-registry: a part of Infravio Ensemble

Overview:

Infravio Ensemble is a Web Services management product suite that combines Infravio X-registry, Infravio X-broker and Infravio X-console to offer Web Services asset management, delivery management and operations management. Each product of the Suite can be used independently or in any combination.

Description:

Infravio X-registry provides a federated corporate Services directory combined with an online marketplace application. X-registry provides the following features:

- A Web interface for users and publishers of Services, as well as administrators and operations managers
- A federated registry which centralizes and maintains the various repositories of an enterprise's published Web Services
- Extended metadata about the registered Service provider and consumer applications
- Role-based management
- Authorization and workflow processes to govern publishing and accessing Web Services
- Support processes for alerts, notifications and version changes
- Accessibility through UDDI APIs

Value Proposition:

X-registry provides critical functionality for enabling SOAs, including automated Web Services governance processes, authorization, tracking, and control of Service consumer and provider applications, management of Web Services Delivery Contracts, and ensuring conformance to corporate standards that apply to Services and their consumers. X-registry facilitates the re-use of Services and provides lifecycle management and provisioning capabilities for Web Services.

The ZapThink Take

Infravio pioneered the concept of a Web Service Delivery Contract, thus helping to point out the limitations of simple UDDI registries for describing and managing Service consumers as well as Service providers. X-registry fills such an important niche within the SOA infrastructure that customers have flocked to the solution, as they begin to work through the details of SOA



adoption. At customer behest, Infravio added marketplace capabilities to X-registry, providing a user interface that people in various roles within the enterprise can use to find information about available Services and manage those Services. As part of the Ensemble suite, Infravio is offering a differentiated approach to Web Services management that fills needs critical to the construction and administration of SOAs.

Profile: Infravio	August 2004
Funding:	Walden International, Crystal Ventures, and NetIQ
Chairman/CEO:	Jeff Tonkel
Employees:	60
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Related Research

Web Services Management: The Maturation of a Transitional Market Insight Report (ZTR-WS112)



About ZapThink, LLC

ZapThink is an IT market intelligence firm that provides trusted advice and critical insight into XML, Web Services, and Service Orientation. We provide our target audience of IT vendors, service providers and end-users a clear roadmap for standards-based, loosely coupled distributed computing – a vision of IT meeting the needs of the agile business.

ZapThink's role is to help companies understand these IT products and services in the context of SOAs and the vision of Service Orientation. ZapThink provides *market intelligence* to IT vendors who offer XML and Web Services-based products to help them understand their competitive landscape and how to communicate their value proposition to their customers within the context of Service Orientation, and lay out their product roadmaps for the coming wave of Service Orientation. ZapThink also provides *implementation intelligence* to IT users who are seeking guidance and clarity into how to assemble the available products and services into a coherent roadmap to Service Orientation. Finally, ZapThink provides *demand intelligence* to IT vendors and service providers who must understand the needs of IT users as they follow the roadmap to Service Orientation.

ZapThink's senior analysts are widely regarded as the "go to analysts" for XML, Web Services, and SOAs by vendors, end-users, and the press. They are in great demand as speakers, and have presented at conferences and industry events around the world. They are among the most quoted industry analysts in the IT industry.

ZapThink was founded in October 2000 and is headquartered in Waltham, Massachusetts. Its customers include Global 1000 firms, public sector organizations around the world, and many emerging businesses. ZapThink Analysts have years of experience in IT as well as research and analysis. Its analysts have previously been with such firms as IDC and ChannelWave, and have sat on the working group committees for standards bodies such as RosettaNet, UDDI, CPExchange, ebXML, EIDX, and CompTIA.

Call, email, or visit the ZapThink Web site to learn more about how ZapThink can help you to better understand how XML and Web Services impact your business or organization.

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