

Governance in the Internet of Services: Governing Service Delivery of Service Brokers

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Current Challenges

The tertiary sector is the biggest employer in most developed countries. Its growth is above par. Not only individuals provide services, but also service networks of independent companies. Services are the key part of future business value networks. They are estimated to have the biggest share of the added value in the future. In order to leverage this potential, services have to become tradable goods – similar to manufactured goods.

In support of this development, infrastructures are emerging which can provide services over the internet. The composition or aggregation of different services is a cornerstone functionality to enable the development of new, innovative services on the basis of existing services. Services can be offered and integrated by different parties in an Internet of Services. Service-oriented Architectures (SOA) which allow integrating external services provide a promising way for companies to face constantly changing market conditions, new competitive threats and new legal regulations [Erl05].

The service broker supports agencies that specialize in taking services out of markets and driving up their consumption through competitive pricing models. These agencies provide a further intermediation, managing the front-desk delivery of services to customers, without encroaching on back-office responsibility. The main role of a service broker is to provide service location and description information contained in a service registry and/or repository and to mediate the service provisioning in terms of service levels as well as billing. So far the broker role is mainly associated with registries; however, intermediaries can play additional roles, e.g., mutually providing themselves brokering services or providing load balancing functionalities [JRS08].

Diligent Service Governance has been recognized in recent years as a major requirement for successful adaptation and operation of an SOA, especially for large systems. Governance in general, be it political governance, Corporate or IT Governance, deals with the successful governing of organizations or projects. Service governance elaborates guidelines and rules that need to be adopted and realized by the affected management processes [OECD04].

This opportunity implies general behaviour guidelines. Legal, technical, organizational and responsibility as well as financial issues have to be addressed and governed by the issuing company and by all participating companies in consensus. Regulative mechanisms, policies, design guidelines and contract frameworks are crucial to a successful coordination of service deployment in inter-organizational space.

A governance approach must focus on the adoption and operation of SOA as enterprise architecture in a company. It must provide guidelines and mechanisms to ensure the integrity of an SOA and its adaptability to business and general administration processes.

Towards Governance in the Internet of Services

Current open frameworks mostly focus on Corporate Governance or IT Governance. The approaches to the Governance of SOA are heavily influenced by the respective supporting IT vendors. For Governance within the Internet of Services, an approach is needed that lies between the requirements of an SOA and the more general governance of IT. As a balanced starting point, the IT Governance frameworks of COBIT and ITIL could be utilized. This is not only because they provide insights from unbiased organizations rather than individual enterprises, but because they are at both ends of the governance spectrum: strategic governance and IT management. This is especially important as COBIT focuses on strategically important tasks (main processes) and ITIL focuses on management tasks (support processes), which are often subject to outsourcing and, thus, the ideal blueprint for managed third-party processes [ITGO07; OfGC07].

All relevant governance processes from these frameworks can be grouped in five phases: design, deployment, delivery, monitoring, and change. In each of these phases, several processes constitute the Service Governance Framework. The design phase contains all sorts of strategic aspects of the use or

operating of such a platform and traded services. Identifying requirements, development of services, as well as the selection of third-party services are components of the deploy phase. The deliver phase contains all aspects of service and infrastructure operations. It is closely coupled with the monitor phase as they are executed concurrently. The monitor phase contains all aspects of service and infrastructure monitoring. It is closely coupled with the deliver phase as they are executed concurrently. The change phase contains all processes and tasks needed to adjust and change the infrastructure and services traded.

This framework has been compiled on the basis of existing frameworks. Figure 1 depicts existing processes which have been taken over as-is or in an abridged form to focus on the specific needs of a Service Governance Framework. Most of the time however, the governance processes had to be extended to cater for the specific needs of an Internet of Services.

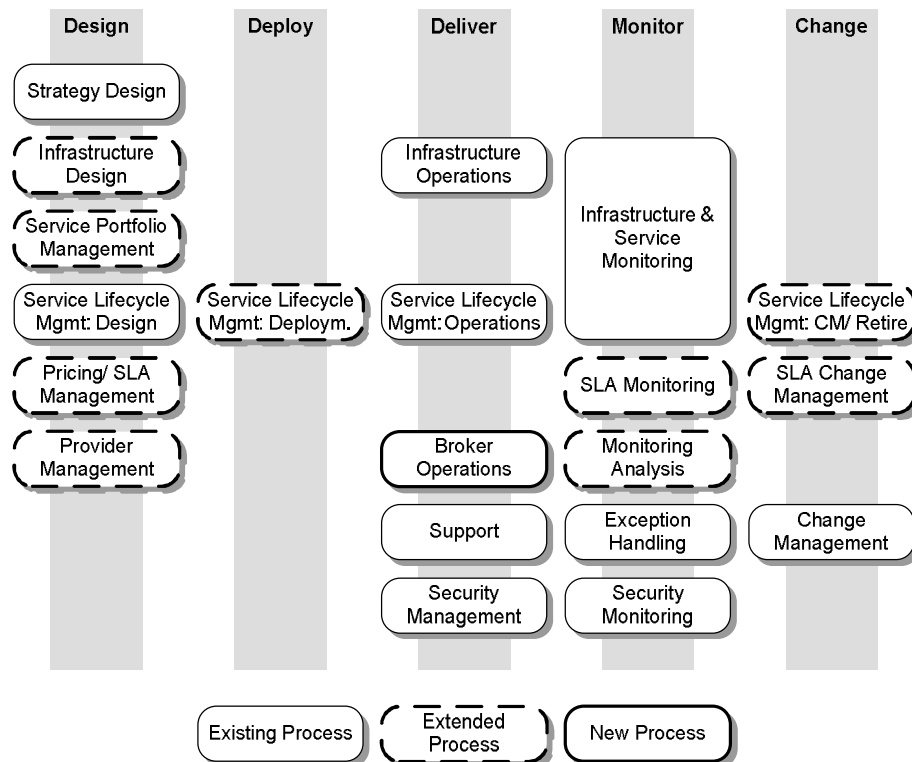


Figure 1: Service Governance Framework for the Internet of Services

Functionality within the Internet of Services is centered on the central service broker component. It cannot be found in current general IT Governance frameworks or in SOA Governance frameworks. Thus, this process is new. There is a need for future refinements of the framework as this first version is intended to show the scope of the Service Governance. While this scope will also be refined, the main focus for detailed development will focus on the process of service brokerage.

References

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