Chapter 32

# A Role of Enterprise Service Bus in Building Web Services

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## ABSTRACT

*Present is the era of fast processing industries or organization gives more emphasis for planning of business processes. This planning may differ from industry to industry. Service oriented architecture provides extensible and simple architecture for industry problem solutions. Web services are a standardized way for developing interoperable applications. Web services use open standards and protocols like http, xml and soap. This chapter provides a role of enterprise service bus in building web services.*

## INTRODUCTION

Present is the era of fast processing. Within industries or organizations, executives want more value for planning of business processes. This planning may vary from organization to organization, but CEOs would like that their IT group demonstrably get better availability of data for taking improved decisions, for example financial services firm seeking higher amount of quicker foreign exchange operation, a retailer series want to speed up the stream of store data. Information is protected by applications inside various organizations, and this protection is time-taken and expensive process to interfere data loose. In other word, the organization is far away to integration. The last few years' significant technology trends have been developed, such as Service Oriented Architecture (SOA) that provide an architecture for different services, Enterprise Application Integration (EAI) responsible for integration, Business-to-Business (B2B) deal with process with in businesses, and web services specify applications on web. These methods try to improve the results and escalating the value of integrated business processes. In this case Enterprise Service Bus (ESB) is the best option to draw better results (Deng, 2008). The ESB is a latest mechanism that provides integration this can be use in loosely coupled and highly distributed integration network. An ESB is a platform that provide integration, it involves some standards in their
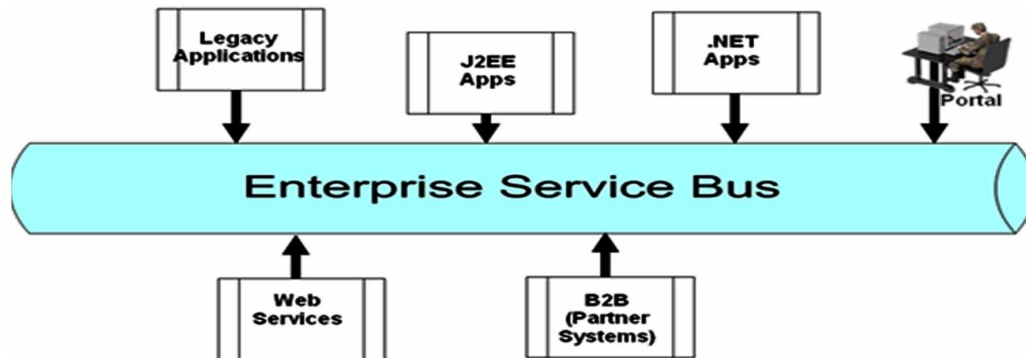
process it combines messages, data transformation, different web services and provide route to connect and manage the communication of large numbers of different applications that are available across the enterprises.

An Enterprise Service Bus is an structural design that involve set of rules and principles for integration of several applications simultaneously over a bus-like infrastructure. The basic idea of the ESB architecture is to provide integration among various applications by specifying a communication bus between them and then make possible that each application can talk. This system permitting to communicate without any dependency or knowledge of other systems on the bus. The basic concept of ESB is to increase organizational agility by decreasing time to market for new initiatives; this is one of the most common reasons that forces companies to implement an ESB in their IT infrastructure. An ESB architecture is a well defined, "pluggable" arrangement that specifying a mode to control present systems and depict existing system to new applications with the help of communication and transformation abilities.

In case of the enterprise those are event-driven, business events can occur at any time or in any order that affect the business process. Applications that transfer data for business processes require to communicate using an event-driven SOA to have the ability to respond to changing business necessities. An SOA gives a business analyst method or integration architecture for applications and integration mechanism to be deal with as high-level services. In an ESB, applications and event-driven services are joined together in an SOA in a loosely coupled manner, which permits them to operate alone from one another (Yan et al., 2007; Valipour et al., 2009).

## Evolution of SOA

Service Orientation (SO) is the effect of advancement of current development models. In 1980s models that were based on object-oriented concept came in existence, after this in 1990s component-based development models came, and presently we are dealing with service orientation. SO contain the advantage of component-based development. It also includes a shift model from distantly invoking techniques on objects. Service orientation offers an progressive method to design distributed software that facilitates loosely coupled integration and flexibility to change (O'Brien et al., 2008). The fundamental building block of service-oriented architecture is a service. A service is a program that can be interacted with through well-defined message exchanges. Services must be designed for both availability and stability.

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