TECHNICAL SPECIFICATION

SOA Blueprints Initiative Definition

Draft v0.5 (For Public Review)

Description of the complete initiative aimed at defining Blueprints and Best Practices for SOA

http://www.MiddlewareRESEARCH.com

The Middleware Company
Research Team

Steve Wilkes & John Harby
June 2004

research@middleware-company.com

Expert Review Group Members:

Will Pugh (BEA), Paul Patrick (BEA), Steve Jones (Cap Gemini),
Hugh Grant (Credit Suisse First Boston), Chris Peltz (Hewlett-Packard),
Scott Metzger (Truelink), Bola Rotibi (Ovum), Annrai O'Toole (CapeClear),
Frank Cohen (PushToTest), Alan Zenreich (Ness Technologies),
Michele Leroux Bustamante (IDesign), Vince Salvato (E2E Consulting), David Murrell (Xede),
Rob Castaneda (CustomWare), Doron Sherman (Individual), Chris Judson (E2E Consulting),
John Cheesman (7irene), Rainer Ammon (FH Wels), Mike Sawicki (Compuware),
Shigeru Urushibara (UL Systems), Akira Hirasawa (UL Systems Inc), Koichi Hayashi (UL Systems)

TABLE OF CONTENTS

DRAFT V0.5
FOR PUBLIC REVIEW

THE MIDDLEWARE COMPANY

TABLE OF FIGURES

THE
MIDDLEWARE
COMPANY™

DRAFT V0.5
FOR PUBLIC REVIEW

1   SUMMARY AND OVERVIEW

The software industry has recently focused on Service Oriented Architecture (SOA) as a way of developing and interconnecting enterprise applications and services. Although there have been many articles and discussions about the benefits of SOA there has been relatively little effort spent on explaining where and how SOA should be used.

The Service Oriented Architecture (SOA) Blueprints initiative is a comprehensive attempt to define and implement a fully functional application suite demonstrating SOA best practices.

The initiative as a whole has several major goals and related deliverables:

- To encourage industry standardization around SOA concepts and terminology encompassed in the SOA Blueprints Concepts document
- To define the requirements for a reference example that highlights SOA best practices in the SOA Blueprints Requirements Specification document
- To encourage and assist vendors in creating implementations of the reference example that showcase best practices within the vendors particular environment
- To architect and develop a freely available open source implementation of the reference example demonstrating best practices within an open source environment

This specification is the starting point and more completely defines the entire initiative, its scope, phases, the deliverables and goals. Through SOA Blueprints, The Middleware Company aims to highlight the best practices for service-oriented application development by way of example, and solidify some of the more commonly mentioned concepts and terminology.

The requirements specification utilizes multiple use-cases, described in detail at both a functional and behavioral level, that show how SOA can be applied to real world problems.

GeneriCo represents a fictitious diverse enterprise that has decided to standardize on SOA as its main application architecture.

Rather than creating a set of disconnected examples, as is the case in many discussions of service-orientation, the requirements specification defines a complete environment consisting of a set of intercommunicating applications that make up an enterprise. In addition, a number of existing resources (such as a Payroll system) are utilized to demonstrate how such applications may be integrated using SOA based solutions. The industry domain of this enterprise has deliberately been left vague in order that this specification may be applicable to as many organizations as possible.

While the focus is promoting and supporting SOA, the specification should be understandable by both architects and enterprise developers and implementable using existing enterprise technologies in a reasonable space of time. There are no restrictions for the technology used to implement the specification. The only requirements are: that business processes can be created that consume services and other resources; that these processes can be exposed as services through HTTP and message broker technologies; and that applications can be built from services in a Web portal-like environment.

2   SCOPE

The initiative will result in two major deliverables that will lead the way to successful vendor and open source implementations. The scope of each of these is described below.

2.1 SOA Blueprints Requirements Specification

The requirements specification is limited to a subset of potential enterprise applications in order to provide a workable definition of SOA best practices that could be implemented in a reasonable timescale. A typical enterprise may have any number of enterprise applications typically constructed as silos and stovepipes. Each may have its own data store, business logic and user interaction mechanism. Figure 1 shows a sample of applications found in a typical organization, highlighting (in blue or darker color) those that will be utilized within this specification.
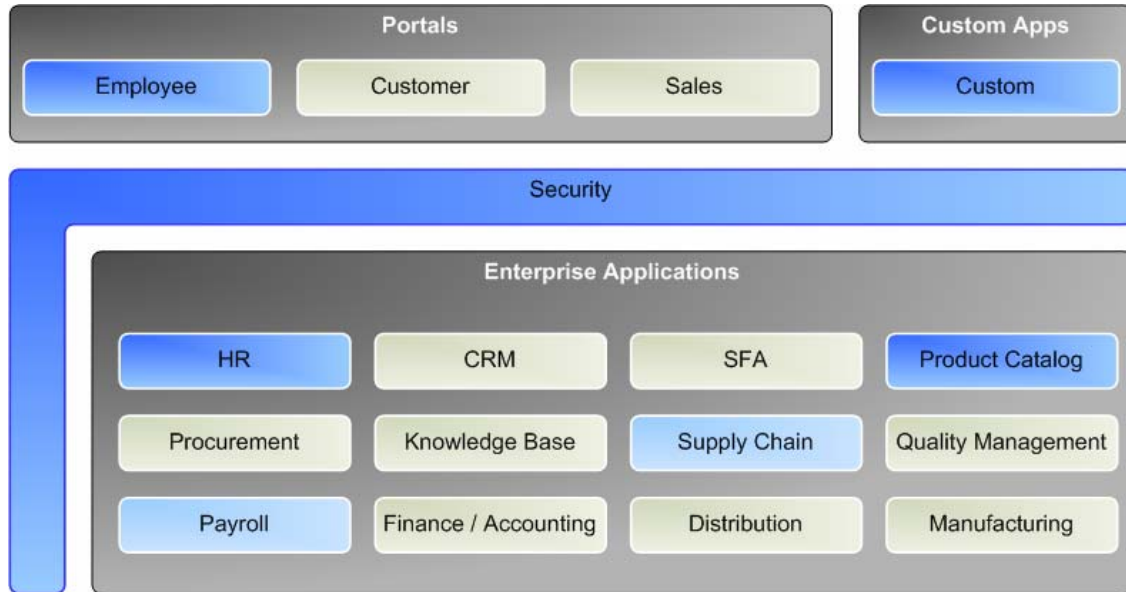

Figure 1 - Typical Enterprise Applications

The scope of the requirements specification is limited to defining:

- A distributed enterprise wide security mechanism
- An employee self service portal
- A distributed product search data service
- A basic HR application for management of employees and departmental structure
- Some payroll functions as required by the specification

This specification will grow over time to contain more examples and best practices. In doing so, it will incorporate more of the applications mentioned above.

2.2 SOA Blueprints Concepts

The concepts document aims to describe, and reach industry consensus on, concepts and terminology often encountered in the SOA world. Some of the concepts covered include:

- synchronous and asynchronous services
- component services
- data services
- composite (business) services
- conversational (workflow) services

DRAFT V0.5
FOR PUBLIC REVIEW

THE MIDDLEWARE COMPANY

- publish-subscribe services
- service brokers
- exception handling and compensating services
- service security
- interception and extensibility
- interoperability

The following diagram highlights (in blue or darker color) some of the items covered by the concepts document. A glossary of terms will also be completed later in the initiative:
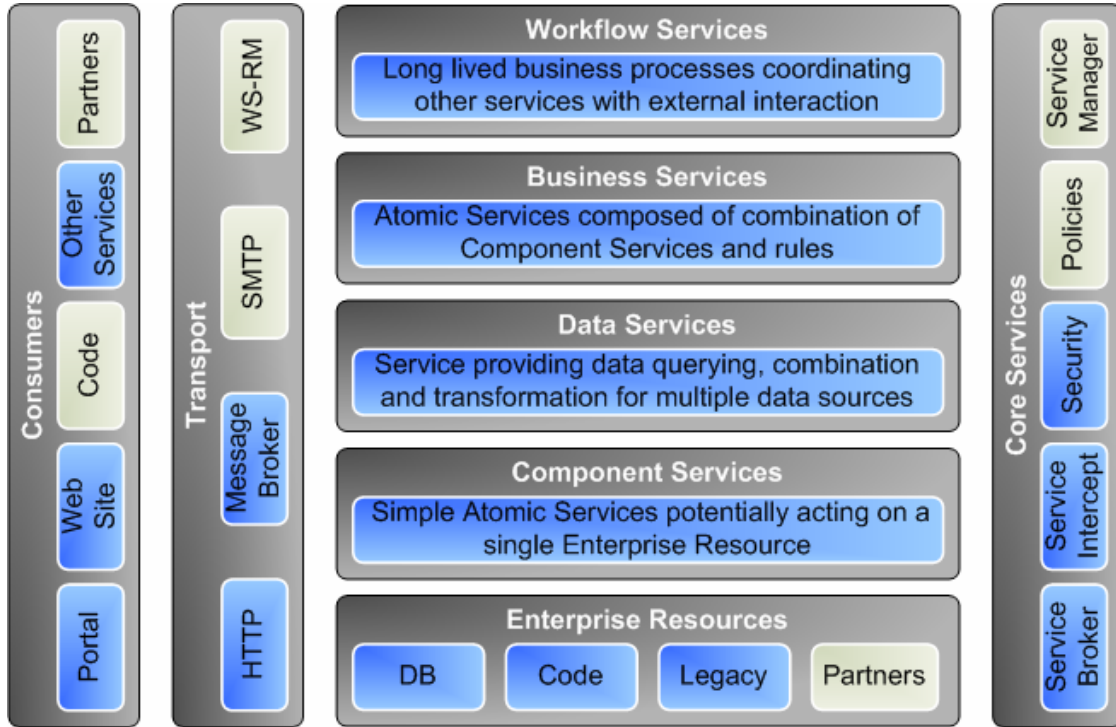

Figure 2 - SOA Patterns

2.3 Specification Level

This requirements specification is implementation independent. All of the artifacts are described only at the functional and behavioral level. Data and message definitions, processes and UI requirements are defined where necessary.

2.4 Outside of Scope

While the requirements specification will not specifically cover performance, scalability, management or maintainability of the resulting applications, future extension of the specification or additional specifications that address these particular issues should not be ruled out. The performance and reliability requirements of each part of the entire system are therefore anecdotally noted in the specification.

3 PHASES

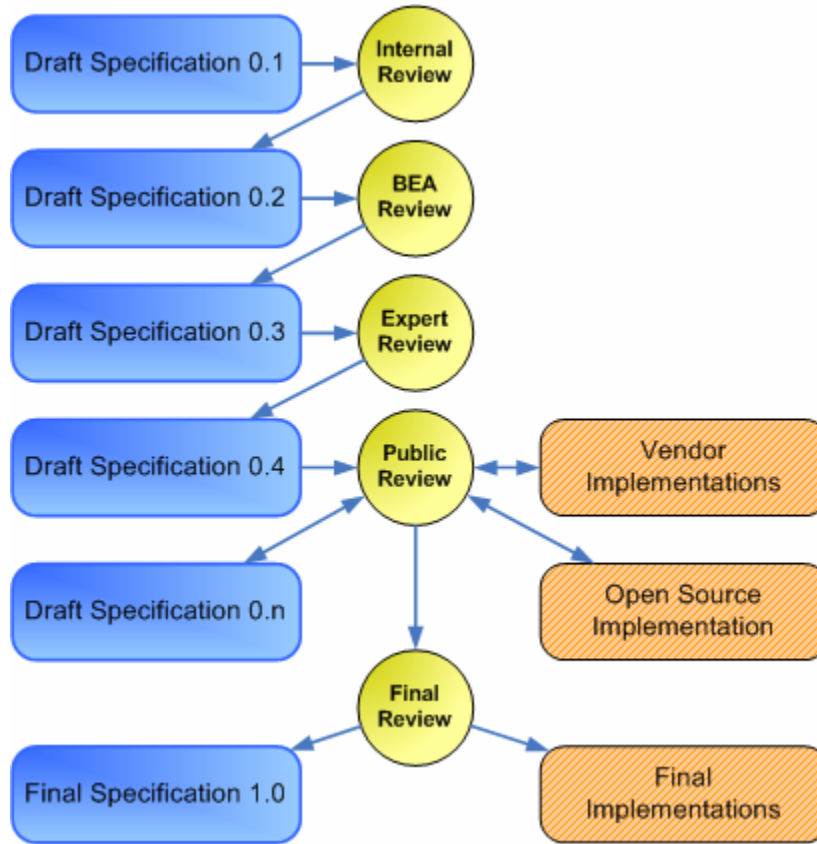This initiative consists of a number of phases that have increasingly more contribution from the community over time.

Figure 3 - Phases of the Initiative

We are currently in the public review phase. At this point a number of vendors have committed to producing implementations of the reference example. At the same time an open source initiative has been kicked off to create an open source implementation of the reference example.

As with any project, the requirements specification will change in the course of implementation, so careful management is required to ensure all implementers are up to date. At the end of the public review phase, consensus will have been reached on the requirements, and all vendor and open source implementations should meet these requirements.

During this phase it is also aimed to reach agreement on the concepts and terminology encapsulated in the SOA Blueprints Concepts document, which will follow the same phased release cycle.