ABSTRACT

Service Oriented Architecture (SOA) is gaining acceptance, offering advantages including closer alignment of IT systems with business. Ideally, within large enterprises, capabilities would be used by solutions from a number of business units while matching the detailed requirements of each; this level of interoperability is difficult to achieve. While much of the current activity focuses on technical interoperability we propose that the focus shift to business interoperability as the key consideration to bring clarity to the engineering aspects of technical interoperability. A model-driven architectural approach is presented that views an organisation’s business processes as structured assets requiring formalisation. A new concept is presented, the conceptual business service (CBS), which provides abstraction through modeling, and promotes building a portfolio of navigable business services at the appropriate level of abstraction and granularity. A method for specifying a CBS is outlined using reference domain meta-data allowing easier service solution recognition among other benefits. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Conceptual Model; Design Methodologies; Model Driven Architecture; Modeling Languages; Service Oriented Architecture; Strategic Alignment

CONTEXT AND INTRODUCTION

Service Oriented Architecture (SOA) intends to provide agility and flexibility within the organisation (Alonso, G., Casati, F., Kuno, H., & Machiraju, V., 2004; Erl, T., 2008). A set of principles are at the heart of SOA to provide guidance and structure to the
way systems are designed and built to satisfy business need. These principles include loose coupling, abstraction and virtualisation in particular (Sprott, D., 2006), and adherence to them can result in an apparent mis-alignment of business concerns from technology. There is a need for the business rather than the technologists, to take greater control and have better understanding of the business processes, services and SOA. However, this also makes it likely that if the business takes on the complete management of the services within a large, multiple business unit organisation, that they will then approach the development and management of services from the point of view of the specialised businesses that they represent. This leads to a technological solution that is directed towards the specific business unit and the work element specified in the service. This is especially problematic where there are many business units engaged, as in, for example, a large financial institution.

In order to address the problem of giving businesses control over the services portfolio while avoiding solutions that are directed towards specific business units a modeling approach is required that considers function and the corresponding services that fulfil the function at a high enough level of abstraction to span business unit boundaries and be useful to the business as a whole where possible. The abstract services defined under the proposed approach should allow the specification of technical services at the required level of polymorphism and re-use.

The approach proposed introduces a new construct known as a Conceptual Business Service (CBS). UML is used to define a meta-model for a CBS. This is used as the basis of a specification for a CBS and allows the CBS to act as the central point of management for a service portfolio plan. It relies on the use of a Canonical Information Model to describe the information aspects which in turn live within a Business Reference Model. The approach allows for an abstract more general definition of process and service at one layer then for a corresponding creation of a process and services at a layer below with traceability between the layers.

Section 2 reviews some current approaches to service portfolio development, reuse and composition. Section 3 will describe and explain the distinction between business interoperability and technical interoperability and put the case that business interoperability must take precedence, while section 4 will explain the key role a reference framework plays in achieving a portfolio of services capable of business interoperability. Section 4 additionally introduces the Conceptual Business Service as the construct to allow function to be defined at a suitable level of abstraction in a general enough way to achieve the required business interoperability. Section 5 will describe with a supporting example how to define a CBS and how they may be used for establishing a portfolio of services that supports strategic
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