

## KEYNOTE

# USING SEMANTICS TO ENHANCE B2B INTEGRATION

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### Abstract

B2B integration, also known as external IS integration and e-business integration, has promised to automate and integrate business processes and interactions between companies by considerably renovating the way business is conducted with partners, suppliers, and customers. B2B integration is fundamentally about data and information exchange among businesses and their information systems.

One simple solution that organizations have adopted to reach a higher level of integration relied on the use of XML as the language to represent data. Today it is estimated that most organizations use XML to store and transfer data. Unfortunately, XML only provides syntax to structure the data exchanged in a B2B setting, since tags have no predefined meaning. This is only one level of interoperability that must be met in B2B transactions. Developers are still faced with the problem of semantic interoperability, i.e., the difficulty to integrate resources that were developed using different vocabularies and different perspectives on the data.

In order to overcome the limitation of using a syntactic B2B integration, the Semantic Web and its associated technologies promise to offer a valuable solution to semantic B2B integration. This keynote discusses architectural solutions that allows organizations to participate in B2B transaction using syntactic protocols (i.e. XML) while representing their internal vocabularies and documents semantically (using OWL). Partners and suppliers can freely exchange syntactic documents. Once an organization receives a syntactic document it is allowed to create a mapping between the elements from the document and concepts of an ontology that describes the domain of discourse of the organization (i.e., internal vocabulary). The organization that receives the documents can create any number of mappings. The mappings are stored in a local repository and can be reused when new, unseen, syntactic documents arrive. When a new syntactic document is received by an organization, the repository is queried to determine if some of the syntactic elements have already been mapped to ontological concepts in the past.

### Short biography



Jorge Cardoso (<http://www.dme.uma.pt/jcardoso>) joined the University of Madeira (Portugal) in March 2003. He previously gave lectures at University of Georgia (USA) and at the Instituto Politécnico de Leiria (Portugal). Dr. Cardoso received his Ph.D. in Computer Science from the University of Georgia in 2002 (with Amit Sheth). While at the University of Georgia, he was part of the LSDIS Lab. where he did extensive research on workflow management systems. In 1999, he worked at the Boeing Company on enterprise application integration with Christoph Bussler. Dr. Cardoso was the co-organizer and co-chair of the

First, Second, and Third International Workshop on Semantic and Dynamic Web Processes. He has published over 60 refereed papers in the areas of workflow management systems, semantic Web, and related fields. He has also edited 3 books on semantic Web and Web services. He is on the Editorial Board of the Enterprise Information Systems Journal, the International Journal on Semantic Web and Information systems, and the International Journal of Information Technology. He is also member of the Editorial Advisory Review Board of Idea Group Inc. Prior to joining the University of Georgia, he worked for two years at CCG, Zentrum für Graphische Datenverarbeitung, where he did research on Computer Supported Cooperative Work.