

Enterprise Application Integration Introduction to the Minitrack

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The business landscape has been radically changed since the advent of the Internet. The Internet has opened new opportunities for companies to revamp existing Electronic Data Interchange (EDI) systems and introduce new business models. In particular, the integration of business processes across increasingly fluid boundaries of companies into virtual enterprises, can be potentially greatly eased by relying on the Internet as the business backbone.

Virtual enterprises constitute temporary, location-independent consortia aimed towards a shared goal. These networked organizations do not only integrate their value chain to increase the customer-perceived added-value, but also typically share their resources in a more efficient way than before. This new paradigm of doing business demands integration of existing legacy systems, packaged software (ERP systems) and newly developed component based enterprise systems. Integration of these various technologies is far from trivial. Organizations attempting to integrate their systems across the value chain are facing complex issues such as integrating enterprise models, semantic interoperability, definition of interfaces and interchange standards, wrapping legacy system components, and, implementing secure and reliable distributed transactions in such highly distributed and hybrid component-based environments.

Recently, various methodologies, architectures and technologies that have emerged to address these requirements. These include: OMG's Model Driven Architecture (MDA), middleware standards (SOAP, CORBA), message broker architectures, cross-organizational workflow management systems, business object frameworks, wrapper technologies, interface standards such as WSDL, SAP BAPI's, Microsoft Biztalk, UDDI, ebXML, standard modeling languages (UML), and lastly, model interchange formats (XMI).

This minitrack presents seven excellent papers that address and challenge the wide range of research topics and

solutions within the field of enterprise application integration such as presented in the above.

The first paper by David Flater is entitled "Impact of Model-Driven Architectures (MDA)". This paper discusses the gradual migration of many standardization organizations, such as the Object Management Group (OMG) into the area of modeling, transcending rather low-level interface standards such as IDL. In particular, this paper focuses at the OMG's MDA and explains how it can be used to implement various levels of interoperability.

The second paper, by Ernst Kessler presents practical experiences with integrating existing real-time simulators for training, mission planning and networked organizations, consolidated in the SmartFED tool.

The paper of Marinos Themistocleous and Zahir Tari outlines a case study of a multinational petroleum company that adopted an enterprise application integration strategy to integrate its ERP systems. This case study resulted in some interesting observations, e.g., 60% of the time to integrate systems is consumed for reengineering the business processes.

The next paper, written by Jeff Sutherland and Willem-Jan van den Heuvel, combines theories from the area of Complex Adaptive Systems (CASs) to explain the adaptive behavior of biological systems, with research from the arena of enterprise application integration that is based on applying integration that is based on a variety of business object technologies (middleware, frameworks and components).

Lastly, Jilles van Gorp, Rein Smedinga and Jan Bosch introduce an architectural design notation, that allows composition of architectural components and superimposition of the components on each other. In this way, the authors argue, the resulting information systems are capable of dealing with change in a graceful manner.