

## EDUCAUSE Panel Predicts Service Oriented Architecture Two to Five Years Ahead

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Panelists facilitated by the IMS Global expect service oriented architecture to be mainstream in 2 to 5 years. The technology will improve services to students, improve productivity of administrative staff, and reduce costs.

Richard Lander, General Manager of Integration Strategy for SunGard Higher Education said SOA would appear in the Banner product within 18 months. APIs (Application Programming Interfaces) already exist; Standards compliant Web Services interfaces—XML, SOAP and WS-\* specifications—will be introduced. He expects most campuses to implement an enterprise service bus. John Fontaine, Blackboard Senior Director, Technology Evangelist, expects users implementing SOA applications that build on the SOA Web Services interfaces provided in Blackboard and other learning management systems. This may take 2 to 5 years for broad implementation. Linda Feng, Director Oracle Corporation, agreed with this assessment. Though she did not mention Oracle Corporation product, Oracle is marketing Fusion middleware that enables enterprise SOA and supports collaboration applications and workflow.

The discussion began when moderator Rob Abel, CEO for IMS Global Learning Consortium post the first of four topics: "What is the single most daunting challenge today for your organization in terms of enterprise integration of learning and/or administrative applications." Charlie Leonhardt, Principal Technologist for Georgetown University said complexity was "the critical issue." He commented the increase integration of applications using campus-built software or processes was becoming more than the IT could reliably maintain. There were complex processes that could not be made available because of lack of standard interfaces. "It is time to get SOA infrastructure—including identity management—implemented."

Fontaine said students have expectations. When they enroll in courses they expect the learning management system to be immediately available with the student's profile at the "snap of fingers." Campus data should be shared more broadly among the "siloes" applications. Information from the learning systems should be immediately available back into the Student Information System. One of the current issues is fidelity of data which resides in more than one system. What is right? "This is an instant world."

Lander said the growing complexity is sharply increasing the cost of ownership of applications.

Abel said application upgrades "break" custom integrations. He said the outcomes of a student's learning on the learning management system needs to be immediately available to SIS users. "New learning scenarios will emerge from availability of real-time data."

Leonhardt said the needed infrastructure has been under development and early implementation for “fifteen years,” but is now ready for implementation. The completing use will be better teaching tools—tools that will have immediate access to a students progress and profile data.

Lander said SOA will be implemented in 2009-2010; applications will have multiple services that can be orchestrated to meet the more demanding needs. Leonhardt said it will take 2 to 3 years to resolve the governance policies, to implement security, and to achieve federation. Compliance with laws and regulations will take 5 years. Fontaine, commenting on the Moodle learning system agreed with 3 to 5 years and questioned whether Moodle will be proprietary or open. [At Educause Blackboard announced integration of Moodle and Sakai with the Blackboard learning system using open standards]. Fontaine “strongly believes in LIS (learning information services) specification that is being developed by IMS. He anticipates applications will be compliant with the WSRP specification supported by Microsoft Corporation as well as the Java community. Feng said the Learning Information Services specification will be the key to integrating learning and administrative systems.

Responding to the second question “What are the most exciting opportunities for improving the learning experience,” Leonardt said he expects a “cornucopia” of integrated services, rich media, and collaboration software as a service. Lander said

The third question: Web 2.0? “Campus will use services such as Google apps, Microsoft on-line applications, and blogs, wikis and mobile applications.” Leonhardt said campuses are ill-prepared to take on Web 2.0 applications; this multiples the number of accounts that students and faculty will have to have unless these services can be integrated with campus identity management and authentication and authorization services. [Leonhardt is Chair of PESC’s Electronic Authentication and Authorization Task Force. The Task Force includes members from other organizations and other industries].

The question