

Oracle Academic Enterprise Solutions White Paper

A recent Oracle White Paper points to the role of Service Oriented Architecture in supporting learning and teaching. Ian Dolphin, International Director, e-Framework for Education and Research reviews the [Oracle Academic Enterprise Solutions White Paper](#).

Oracle Academic Enterprise Solutions White Paper - Reviewed by Ian Dolphin,
International Director, e-Framework for Education and Research

All too often the benefits of a service oriented approach to systems analysis, design and implementation are articulated in the context of administrative systems alone. It is refreshing, therefore, to see a white paper from Oracle Academic Enterprise Solutions which articulates the benefits of a service oriented approach focussed squarely on academic requirements, particularly those which relate closely to teaching and learning.

It is also perhaps interesting to observe in passing the contrast between the underlying explicit assumption of the Oracle paper - that SOA based approaches represent accepted "common sense" - and the rather provocative recent "SOA is Dead" announcements by some industry analysts (<http://apsblog.burtongroup.com/2009/01/soa-is-dead-long-live-services.html>). Whilst recognising the power of SOA conceptually, and practically for those organisations with the resource and governance structures to enable its implementation, the e-Framework, of course, continues to advocate a service oriented *approach* for systems supporting education and research. "Long live services", indeed.

Oracle analyse the integration problem space which has grown up around the complexity of systems operating in an academic environment. The introduction of the Learning Management System/Virtual Learning Environment broke student information out of its former Student Information System silo to an extent (although, I suspect rather more typically in *provisioning* the LMS/VLE with student, staff and course information than any bidirectional sense), although integration tended to rely on a brittle point-connection. The landscape of the academic environment today is far richer, and places far more complex demands on institutional service providers and integrators. In the last ten years the LMS/VLE has tended to proliferate within a single Higher Education Institution, as practitioners reach beyond vanilla collaboration tools towards solutions which meet the specific needs of discipline, teaching style, or the needs of learners. The departmental (or even individual) instance of an LMS/VLE is now relatively commonplace. Local tools such as blogs and wikis now blend with tools from the cloud such as Facebook and Twitter in widespread use to support teaching and learning. The development of Library Systems and a variety of repositories all point towards increased integration driven by learner and educator demand. The old-style point integration of an LMS/VLE simply does not scale to encompass the richness of this landscape.

The Oracle paper highlights the critical characteristics of an architecture which can support a highly flexible and configurable online learning environment; managing identity, adherence to standards, adoption of SOA, and consolidation of core capabilities within the academic enterprise. These characteristics lead, quite distinctively to "Support for Composite

Application and Mash-up Development Styles", which "frees" developers to "focus on building out academic-specific functionality".

Such academic functionality is largely posed in terms of teaching and learning. Whilst this focus is understandable, the inclusion of a research perspective might add considerable strength to the case. There are several aspects to consider here. In the first instance there is, of course, for many educators both within and outside R1/Russell Group/Group of Eight institutions, an intimate and desirable connection between research practice and teaching (or facilitating learning, in a somewhat broader sense). For those educators who operate in both teaching and research modes, a flexible environment which supports both teaching and research, particularly research collaboration, would appear to be highly desirable. There would seem to be little benefit, and much, in fact, to lose, from the existence of two distinct "environments" or "systems". The issue of whether this is a "research", "teaching" or "learning" environment would essentially resolve around the context of use, rather than the label attached.

This is not purely a semantic distinction. In surveying collaborative environments supporting research as part of the JISC Virtual Research Environment Programme, there appears to be considerable emphasis amongst practitioners on *flexibility* in terms of tool integration. In e-Research space there are currently a considerable range of what might be considered "niche" tools to support highly discipline-specific research areas. Whilst the orchestration and common presentation of those tools is regarded as desirable by many practitioners, the current crop of VLE/LMS products are widely regarded as too monolithic (and often proprietary) to support widespread or worthwhile integration of a richer toolset. Should the more flexible environment the Oracle paper describes be created, it could potentially closely meet the needs such research practitioners have begun to articulate.

As e-Learning matures and a broader layer of practitioners gain familiarity and use tools and environments naturally, there may well be a similar growth of discipline-specific and specialist tools. In any event, it seems highly likely that the integration of "research" and "teaching and learning" perspectives such an environment could support will act to broaden the toolset and resources available to teachers and learners considerably, and also act to reduce complexity as a barrier to use.

The focus on core technologies which enable the development of, for example, specific discipline or sub-discipline features or tools, is emerging as a distinctive feature of dialogue around the future online learning environment. This environment, which Oracle term the Learning Management Operating System (a term which first came into use at SUNY), is envisaged as a centrally managed, enterprise core which enables the easy creation of "multiple personalised environments". Such a system, Oracle argues, could act to reduce support costs, facilitate sharing data, and meet privacy and security concerns, whilst maintaining the flexibility of more distributed systems.

It is interesting to see a major vendor outside VLE/LMS space engage so strongly with the future vision of the online learning environment. It is equally interesting to see them place an open-source Collaboration and Learning Environment - Sakai, specifically the future Sakai 3 or 3akai release - at the heart of its development trajectory. The paper provides a useful

summary of the salient features of Sakai 3, specifically support for JCR, integration with calendaring systems through Caldav, use of Shindig to support OpenSocial services, together with the more general promise of an "extensible architecture" "supporting the addition of new services".

There are points here to which the e-Framework Partnership should pay specific attention. As traditional vendors such as Oracle move to integrate open and community source software with their own offerings, and open source communities diversify and mature, growing the scope and breadth of their implementations, there may well be a need to for common language with which to describe the services and functionality offered. How will Oracle describe their efforts with Sakai to Kuali Student? Or Sakai and Kuali Student factor out the overlap between Virtual Learning Environment and Student Information System? If the Open Library Project moves from investigation to build, how will the integration of library services play with either Virtual Learning Environment or Student Information System? How would research requirements generated by the Bamboo project be communicated outwards to the communities producing software to support research activities? The list of possible permutations seems likely only to grow, and bring massively increased complexity in their wake - both for multiple communities, and those taxed with implementation at an institutional level.

The approaches developed by the e-Framework Partnership to documenting service oriented analysis, design, and deployment were created to provide a common approach and a common language to facilitate communication between communities. They are being tested in a variety of contexts internationally. Our challenge is, of course, to draw on a linguistic metaphor, to ensure that the approaches the e-Framework suggests become a lingua franca, rather than esperanto.