An Insider’s Perspective on the Sakai Project – Reality and Promise for Sustainable Economics and Innovation

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Sakai
Kuali
OSP
An Insider’s Perspective on the Sakai Project – Reality and Promise for Sustainable Economics and Innovation

In just two short years, the Sakai Project has imperfectly (1) demonstrated the immense potential of the community source model for higher education. We have (2) learned how to pool our resources, run an (3) effective governance, deliver on (4) date-driven development, (5) grow an international community of both not-for-profits and commercial interests, develop a (6) sustainability plan with US$1M cash flow, and most importantly, (7) implement the resulting software at enterprise scale in full production environments.

Sakai is providing a unifying community for rapid innovation to support e-learning, e-research, digital libraries, and collaboration, but much, much work remains to be done. This session will explain the Sakai Project’s recent history, its future in the hands of the Sakai Foundation, applicability of community source to administrative systems, and assess Sakai’s local impact through implementation at Indiana University.
Sustainable Economics

Innovate
AN e-RESEARCH STRATEGIC FRAMEWORK:
INTERIM REPORT
of the
e-RESEARCH COORDINATING COMMITTEE
30 September 2005
The Sakai Project

University of Michigan
Indiana University
MIT
Stanford University

JA-SIG (uPortal Consortium)
Open Knowledge Initiative

The Sakai Educational Partners
The Sakai Project

“The University of Michigan, Indiana University, MIT, Stanford, the uPortal Consortium, and the Open Knowledge Initiative (OKI) are joining forces to integrate and synchronize their considerable educational software into a pre-integrated collection of open source tools.”

“Sakai Project Receives US$2.4 Million Grant” – December 2003
Sakai Project Timeline

Original Nov 2003 Plan

Michigan
• CHEF Framework
• CourseTools
• WorkTools

Indiana
• Navigo Assessment
• Eden Workflow
• OneStart
• Oncourse

MIT
• Stellar

Stanford
• CourseWork
• Assessment

OKI
• OSIDs

uPortal

Sakai

Primary Sakai Activity
Architecting for JSR-168 Portlets,
Refactoring “best of” features for tools
Conforming tools to Technology Portability Profile

Sakai 1.0 Release
• Tool Portability Profile
• Framework
• Services-based Portal
• Refined OSIDs & implementations

Sakai Tools
• Complete CMS
• Assessment

Primary Sakai Activity
Refining Sakai Framework,
Tuning and conforming additional tools
Intensive community building/training

Activity: Ongoing implementation work at local institution...

Activity: Maintenance & Transition from a project to a community

Sakai 2.0 Release
• TPP
• Framework
• Services-based Portal

Sakai Tools
• Complete CMS
• Assessment
• Workflow
• Research Tools
• Authoring Tools

Conference 172 Attend
• Michigan
• Aug 1.0
• Dec 1.5

Release Pilot

Conference 440 Attend
• Indiana
• May 05
• Dec 05

Conference 560 Attend
• MIT
• Stanford
• May 05

Dec 2.0
Released

Dec 2.1
Released

Jan 04

July 04
Sakai Is…

• An iron chef — the famous Hiroyuki Sakai

• A project — a higher education initiative supported by a two-year (’04-05) Mellon grant.

• A community — an alliance of institutions of higher education, commercial affiliates and committed individuals committed to a community source model of software development.

• A product — an extensible Java-based enterprise framework for building collaborative teaching and research tools and services.

• A foundation — a non-profit, member-supported organization created to serve the Sakai community.
The Real Chef Sakai!

Sakai Project
Chair – Joseph Hardin
Placing the Sakai Product

Teaching and Learning

Collaboration and eResearch

Sakai

WebCT

Blackboard

moodle

Sakai

Sakai

Lotus software

Microsoft SharePoint Services
Sakai in Production
“Collaboration & Learning”

Sakai is Oncourse CL at IU

Faculty/Staff/Students….one place for research, teaching, service

Course Tabs
University Committee Tab
Tools Selected for each Worksit
Sakai 2.1 Toolset

- Announcements
- Assignments
- Chat Room
- Threaded Discussion
- Drop Box
- Email Archive
- Gradebook
- Melete - Content Editor
- Message Of The Day
- News/RSS
- Preferences

- Presentation
- Profile/Roster
- Quiz & Tests
- Resources
- RWiki
- Schedule
- Section Mgmt
- SUTool
- Syllabus
- TwinPeaks
- Web Content
- Worksite Setup
- WebDAV
Requirements Overlap

- Physics Research Collaboration
- Earthquake Research Collaboration
- Teaching and Learning

Sakai

- Quizzes
- Grading Tools
- Syllabus
- SCORM
- Grid Computing Visualization
- Data Repository
- Large Data Libraries
- Chat Discussion Resources
- Teaching and Learning
- Physics Research Collaboration
- Earthquake Research Collaboration
- Sakai
Scope of Collaborative e-Research

“..composing and orchestrating many technologies...”

“..interoperability is key...”

Collaborative Tools

Shared Compute

Data Repository

Portal Technology

Data Sources

Knowledge Tools

Identity ACL

Sakai

Technology

NVO

Sakai

Kepler
User Interface for Collaborative e-Research

Portals are an excellent technology for building a federated user interface across these disparate components.
Sakai Implementers (partial list)

In Production, 2004-2005
- Indiana University
- Mac Learning Environments
- University of California, Merced
- Universitat de Lleida
- University of Michigan
- University of Strathclyde, AERS
- Walsh University
- Yale University

Pilots, 2005-2006
- Columbia University
- Hong Kong University of Science and Technology
- Johns Hopkins University
- MIT
- Northwestern University
- PayPal, a Yahoo Company
- Portland State University
- Rice University
- Roskilde Universitetscenter
- Stanford University
- Texas State University
- SURF, Universiteit van Amsterdam
- University of British Columbia, Land and Food Systems
- University of California, Davis
- Universidade Fernando Pessoa
- University of Missouri
- University of North Texas
- University of Strathclyde, AERS
- University of Virginia
- Virginia Tech
- Walsh University
- Whitman College

total = 22
Sakai Partners

Membership Fee: US$10K per year, 3 years
- Access to SEPP staff
  - Community development manager
  - SEPP developers, doc writers
- Knowledgebase
- Developer training
- Exchange for partner-developed tools
- Strategy and implementation workshops

currently 88 Partners from 6 Continents
<table>
<thead>
<tr>
<th>Sakai Educational Community</th>
</tr>
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<tbody>
<tr>
<td>Albany Medical College</td>
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<tr>
<td>Arizona State University</td>
</tr>
<tr>
<td>Australian National University</td>
</tr>
<tr>
<td>Boston University School of Management</td>
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<tr>
<td>Brown University</td>
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<tr>
<td>Carleton College</td>
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<tr>
<td>Carnegie Foundation for Advancement of Teaching</td>
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<tr>
<td>Carnegie Mellon University</td>
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<tr>
<td>Ceritos Community College</td>
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<tr>
<td>Coast Community College District</td>
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<td>Columbia University</td>
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<td>Cornell University</td>
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<tr>
<td>Dartmouth College</td>
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<td>Florida Community College at Jacksonville</td>
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<tr>
<td>Foothill-De Anza Community College</td>
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<td>Georgetown University</td>
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<td>Harvard University</td>
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<td>Hosei University IT Research Center</td>
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<tr>
<td>Indiana University</td>
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<tr>
<td>Johns Hopkins University</td>
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<tr>
<td>Lancaster University</td>
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<td>Loyola University, Chicago</td>
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<tr>
<td>Lubeck University of Applied Sciences</td>
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<tr>
<td>Maricopa County Community College</td>
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<tr>
<td>Marist College</td>
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<tr>
<td>MIT</td>
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</table>
Sakai Project
$10m

Sakai Foundation
$1m
100 x $10k

Community
19 Days
70%
Sakai Foundation

• Sakai Foundation (Oct 2005)
  – 501c3 not-for-profit foundation to own copyright and coordinate the Sakai Project

• Board Elections (Nov 05)
  • Christopher Coppola, rSmart Group
  • John Norman, U. of Cambridge
  • Charles Severance, Sakai Chief Architect
  • + 7 continuing board members

• Austin Conference (December 2005)
  – 98 Sessions on development, tools, UI, training, rollout, support, migration, Pedagogy, library, repositories, e-research, ePortfolio
Vancouver
May June
Sakai Conference Attendance

Sakai
What does this mean
Consolidation

- Home Grown
- Commercial

Industry Shakeout

Black Board
Black Board + WebCT
WebCT

Sakai Project
Foundation...


Full Control Destiny
Sourcing Evolution

1970-80s
Build

1990
Build or Buy

2000
Buy

2010
Build, Buy, or “Borrow”

Risks?
✓ Support?
✓ Quality?
✓ Sustainability?
✓ Security?

Benefits?
✓ Control of destiny
✓ Leverage of $$
✓ Learning
✓ Ecology of innovation
Community Source

+ Pool #
+ Synchronize
+ Execute

Open Source

Open Source is Moving up the Stack

TCP/IP, SendMail, HTTP

Linux

Apache, JBoss, Eclipse

Applications?
$\Sigma [(\text{Investment})_n - \text{Cost}] + \text{Knowledge} + \text{Learning} + \text{Shared maint.}$
Collection of Open Source Software For Higher Education
Lessons?
Lesson #1

Developing Enterprise-scale systems is Really Difficult....

Developing them With Others is Really, Really, Really Difficult...

Well Worth It
Lesson #2

The Secret Sauce Recipe...

1. Begin with an Existing System
2. Use Date-Driven Development
3. Board Members Must Face Delivery ‘Back Home’
4. Create a Strong Board and governance
5. Engage in Post-Project Community Development up Front
Lesson #3

Vett Project Talent Carefully and Make Necessary Decisions
Effective Collaboration is a valuable Organizational Capability...

Staff Development Work to Learn How to Partner
The e-portfolio matrix populated with digital “Evidence”
A $2.5-Million Grant and 4 New Members Bolster Financial-Software Project for Colleges
Sakai Technologies

A Java enterprise environment

Technical Goals

• Component-based expandability
• Appearance of a single well-integrated application
• Flexible Presentation (HTML, Portals)
• Support for web services
• Cross-language support
• Production-ready

Java 1.4.2
Apache - SSL, mod_jk, WEBISO, virtual hosting
Tomcat 5.5
JBoss
Sakai
Spring
Hibernate
Java Server Faces
Velocity (legacy)

MySql 4.1
Oracle 9i / 10g
Sakai: More Information

• Sites

• Main site: http://www.sakaiproject.org
• Austin: http://bugs.sakaiproject.org/confluence/display/winterconf2005/Home
• Sakai-wide collaboration area: http://collab.sakaiproject.org
• Sakai Issues Tracking: http://bugs.sakaiproject.org
• Sakai SVN: http://source.sakaiproject.org/svn
• Sakai 2.1 release: http://www.sakaiproject.org/release

Sakai Contacts

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