Open source Software: The Sakai Project

Jim Farmer
Sakai Community Liaison
Instructional Technology Council eLearning 2005
Dallas, Texas April 5, 2005
The Sakai Project

Funded by the Andrew W. Mellon Foundation and the four universities
The SAKAI Project

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

The Sakai Project, A proposal to the Andrew W. Mellon Foundation, 2 December 2003
The broader goal

“Integrating these disparate efforts will also merge their associated communities of use and practice towards a critical mass to have a real economic and innovation effect for educational institutions.”
Sakai is

- A concept
- An architecture
- A four-university development effort
- An emerging community
The Sakai Vision

We will create an open-source Collaboration and Learning management system which is competitive with best offerings,

BUT at the same time create a framework, market, clearinghouse, cadre of skilled programmers, documentation and set of community practices necessary to enable many organizations to focus their energy in developing capabilities/tools which advance the pedagogy and effectiveness of technology-enhanced teaching, learning, research and collaboration

...rather than each just building another threaded discussion tool as an LMS.

Sakai Board, June 23, 2004
Sakai: So What's New?

- New approach to Portal Technology: Application Development Platform
- New Approach to web application development: Code to work on desktop (someday)
- New approach to Learning Management Systems: Not just for classes any more – research, collaboration

And, most importantly today:
- New form of development: “Community Source”
The Sakai architecture

- Sakai Services-based architecture
- WSRP remote portlet support
- Open Standards: XML, JSF, SOAP, SAML and others as the project progresses
Tool Portability Profile

Now based on the IMS “Specification Development”

“Tools Interoperability - The objective of this work is to demonstrate that a selected tool can be connected to various Learning Management Systems (LMS) for actual use by end users.”

“This effort is expected to be completed in early 2005.”

From www.imsglobal.org/workinprogress.html, 3 April 2005
Sakai Releases

• Sakai 1.0 - basic collaborative system - suitable for small pilots (June 2004)
• Sakai 1.5 - basic collaborative learning system - suitable for significant pilot’s (December 2004)
• Sakai 2.0 - collaborative learning system - suitable for significant production deployments (June 2005)
• Sakai 3.0 - hardening, portal integration, preparation for post-project (December 2005)
Sakai 1.0

- Plug-in for single sign on and authentication
- All tools from CHEF, ported to Sakai
- Java Server Faces 1.0 development environment with initial set of Sakai tags
- Clustered environment support
- Scalability limited in terms of number of sites and number of users (some complex structures maintained in memory)
Sakai 1.5

- 1.5 = halfway between 1.0 and 2.0
- A production ready collaborative learning environment
- Scaling significantly improved - memory structures moved into the database and tuned for performance.
- Revised JSF 1.1 development environment
- IFRAME Portal integration
- Additional plug-ins for sites (classes) and roles within sites
- Some aspects of Sakai framework and APIs will still be in flux through 2.0
Sakai 1.5 Tools

- Samigo - QTI compliant assessment engine (Stanford)
- Syllabus Tool (Indiana)
- Context Sensitive Help (Indiana)
- Presentation Tool (SEPP)
- Contributed Tools (not part of bundle)
  - Blackboard Import (Texas)
  - Xwiki (Cambridge)
- Portfolio Tool - OSPI (R-Smart) (separate release)
Sakai 2.0

- Sakai Style Guide compliance for the core tools
- Improved content management
- Hierarchical sites throughout
- Sakai APIs and framework complete
- TPP Published
- Significant polish beyond 1.5
Sakai 2.0 (New Tools)

- Melete - module editor
- Gradebook
- Contributed tools
  - TBD…
<table>
<thead>
<tr>
<th></th>
<th>Sun 1</th>
<th>Mon 2</th>
<th>Tue 3</th>
<th>Wed 4</th>
<th>Thu 5</th>
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View: Calendar by week
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Legend:
- Academic Calendar
- Activity
- Cancelled
- Class Section - Discussion
- Class Section - Lab
- Class Section - Lecture
- Class Session
- Computer Session
- Deadline
- Exam
- Meeting
- Multidisciplinary Conference
- Quiz
- Special Event
- Web Assignment
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<tr>
<th>Subject</th>
<th>From</th>
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<tr>
<td>TP1 Release</td>
<td>Mark Norton</td>
<td>Mar 11, 2004 10:57 am</td>
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<td>Title</td>
<td>Size</td>
<td>Created By</td>
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<td>Custom structure for a db</td>
<td>403 KB</td>
<td>Jim Laffey</td>
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Sakai Educational Partners : Discussion

Threaded Discussion

View: 2 Row Layout

- **TP1 Release** (3 responses) Mark Norton Mar 11, 2004 10:58 am
- **Technology Portability Profile** (4 responses) Mark Norton Mar 11, 2004 11:00 am
- **Documentation on Sakai APIs** (1 response) Anthony Potts Jul 16, 2004 1:48 pm
- **Sakai tools example using JSF** (1 response) Anthony Potts Jul 19, 2004 3:16 pm
- **Error handling using Sakai APIs** (1 response) Anthony Potts Jul 19, 2004 5:37 pm

Special Interests

- **Cross Language Support** (1 response) Mark Norton Mar 16, 2004 7:28 am
- **Sakai Hardware Platform** (2 responses) Anthony Lombardo Apr 14, 2004 9:49 am
- **Preferred version of Linux?** (1 response) Margo Reveil Apr 28, 2004 6:46 pm

TP2 Installation

Sakai Framework > TP1 Release > TP1 Release

**From:** Mark Norton (Mar 11, 2004 10:58 am)

**Message:** Welcome to the discussion of the Sakai software framework. This is a good place to post questions, comments and feedback about the TP1 software release.
A realm is a set of Sakai security definitions; defined roles and grants of roles and specific abilities to users. Grants in a realm do not apply to any particular resources. Instead, a realm is programmatically associated with one or more resources. The grants of abilities to users in a realm apply to all of the resources associated with the realm.

Realms are used in many ways in the Sakai services. Each site has an associated realm. The grants to users in the site's realm apply to all the resources associated with the site. Content hosting collections (folders) optionally have realms. The grants of abilities in collection realms apply to the files and folders within that collection. Since a realm can be defined for any collection, a particular file resource may have many realms defined along its folder path.

When multiple realms apply to a resource, they are cumulative. The user is permitted the function on the resource if that user has a grant of the ability or a role that includes that ability in any applicable realm. There is no "deny" grant, which would undo the effect of a grant in another realm.

By convention, the realm uses for its id the reference to the resource it's applied to. For example, the realm id for site "MyCourse" is "/site/MyCourse". A realm reference adds the "/realm/" prefix, so the realm reference for the "MyCourse" site is "/realm/site/MyCourse". Note the double "/". This is correct.
Main Chat Room

Please note: All chat messages are archived and can be read by any site participant.

Chuck Powell (Aug 4, 2004 2:19 pm): Joseph it appears you book may be:

Chuck Powell (Aug 4, 2004 2:19 pm): Joseph it appears you book may be:


Duffy Gillman (Aug 4, 2004 2:21 pm): videolink still failing at UA as well

Joseph Hordin (Aug 4, 2004 2:22 pm): That's the book, Chuck. Very well done analysis of open source efforts, and the structures that have grown out of these.

Kirk Alexander (Aug 4, 2004 2:27 pm): Just for the record, UC Davis is present here and on the phone.


Joseph Hardin (Aug 4, 2004 2:37 pm): bye, all
You are authorized to send email from: jkf@umich.edu

Email sent to the following addresses will be archived and sent to participants:

  sepp@chefproject.org
  sakai-educ@chefproject.org

Total number of messages: 92.

To view a message click the subject.

<table>
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<tbody>
<tr>
<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Update Wed., August 4, 2004</td>
<td>Aug 4, 2004 5:52 pm</td>
</tr>
<tr>
<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Conference Call Agenda today 2:00-4:00 p.m.</td>
<td>Aug 4, 2004 1:18 pm</td>
</tr>
<tr>
<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>RSVP - August 4th SEPP Conference Call</td>
<td>Aug 3, 2004 9:40 am</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Update July 28, 2004</td>
<td>Jul 28, 2004 2:00 pm</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Update for July 21, 2004</td>
<td>Jul 21, 2004 12:10 pm</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Update for July 14, 2004</td>
<td>Jul 14, 2004 7:12 pm</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Conference Call July 7, 2004</td>
<td>Jul 9, 2004 3:05 pm</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
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<td>Jul 7, 2004 9:41 am</td>
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<td>Jan Koich <a href="mailto:jkoich@umich.edu">jkoich@umich.edu</a></td>
<td>SEPP Update June 30, 2004</td>
<td>Jul 2, 2004 3:48 pm</td>
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</table>
You are authorized to send email from: arwhyte@umich.edu

Email sent to the following addresses will be archived and sent to participants:

- sakai-dev@collab.sakaiproject.org
- 1097928811887-22636@collab.sakaiproject.org

Total number of messages: 459.

To view a message click the subject.

<table>
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<tr>
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<tr>
<td>Ian Boston <a href="mailto:ian@caret.cam.ac.uk">ian@caret.cam.ac.uk</a></td>
<td>Re: How to get sakai-tcdeploy.jar?</td>
<td>Mar 29, 2005 5:23 am</td>
</tr>
<tr>
<td>Ian Boston <a href="mailto:ian@caret.cam.ac.uk">ian@caret.cam.ac.uk</a></td>
<td>Re: How to get sakai-tcdeploy.jar?</td>
<td>Mar 29, 2005 5:23 am</td>
</tr>
<tr>
<td>Ian Boston <a href="mailto:ian@caret.cam.ac.uk">ian@caret.cam.ac.uk</a></td>
<td>Re: cvs server?</td>
<td>Mar 29, 2005 5:15 am</td>
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<tr>
<td>Jon Hui <a href="mailto:cjjonhui@ust.hk">cjjonhui@ust.hk</a></td>
<td>Re: Help on maintaining UsageSession</td>
<td>Mar 29, 2005 2:41 am</td>
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<td><a href="mailto:kuniv.sea@gmail.com">kuniv.sea@gmail.com</a></td>
<td>How to get sakai-tcdeploy.jar?</td>
<td>Mar 28, 2005 8:56 pm</td>
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<td>How to get sakai-tcdeploy.jar?</td>
<td>Mar 28, 2005 8:55 pm</td>
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<td>Steven Githens <a href="mailto:sgithens@northwestern.edu">sgithens@northwestern.edu</a></td>
<td>cvs server?</td>
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<td>Charles Severance <a href="mailto:cseve@umich.edu">cseve@umich.edu</a></td>
<td>Re: More Help on Help required</td>
<td>Mar 27, 2005 9:15 am</td>
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<td>James M Pease <a href="mailto:jmease@mailbox.syr.edu">jmease@mailbox.syr.edu</a></td>
<td>Webapp load order</td>
<td>Mar 25, 2005 10:01 am</td>
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<td>Ian Boston <a href="mailto:ian@caret.cam.ac.uk">ian@caret.cam.ac.uk</a></td>
<td>Re: More Help on Help required</td>
<td>Mar 25, 2005 3:57 am</td>
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<td>&quot;Cotton, Dan&quot; <a href="mailto:dcotton@ucdavis.edu">dcotton@ucdavis.edu</a></td>
<td>List of current &quot;Tool&quot; Projects</td>
<td>Mar 24, 2005 4:43 pm</td>
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<td>Zhen Qian <a href="mailto:zqian@umich.edu">zqian@umich.edu</a></td>
<td>Re: concurrent modification exception: possible bug?</td>
<td>Mar 24, 2005 4:39 pm</td>
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<tr>
<td>Andrew Petro <a href="mailto:andrew.petro@yaio.edu">andrew.petro@yaio.edu</a></td>
<td>Re: concurrent modification exception: possible bug?</td>
<td>Mar 24, 2005 4:35 pm</td>
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<td>Anthony Whyte <a href="mailto:arwhyte@umich.edu">arwhyte@umich.edu</a></td>
<td>Re: Sakai Webservices and Sakai Launch Control</td>
<td>Mar 24, 2005 4:27 pm</td>
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<td>&quot;McCue, Patrick&quot; <a href="mailto:pmccue@uis.edu">pmccue@uis.edu</a></td>
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<td>&quot;Speelman, Lance&quot; <a href="mailto:lance@indiana.edu">lance@indiana.edu</a></td>
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<td>Mar 24, 2005 4:10 pm</td>
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<td>Patricia Goldwec <a href="mailto:pgoldwec@northwestern.edu">pgoldwec@northwestern.edu</a></td>
<td>concurrent modification exception: possible bug?</td>
<td>Mar 24, 2005 4:00 pm</td>
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<tr>
<td>Thomas D'Silva <a href="mailto:tdsilva@mail.utexas.edu">tdsilva@mail.utexas.edu</a></td>
<td>Sakai Webservices and Sakai Launch Control</td>
<td>Mar 24, 2005 3:27 pm</td>
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<td>Ari Consul <a href="mailto:consul@jamboa.com">consul@jamboa.com</a></td>
<td>RE: Multiple sessions with a single browser?</td>
<td>Mar 24, 2005 2:55 pm</td>
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</table>
Revising site tools for Sakai User...

Check boxes to add or remove tools from your site.

- **Home**
  Description of the project, recent announcements, discussion, and chat items.

- **Schedule**
  For posting and viewing deadlines, events, etc.

- **Announcements**
  For posting current, time-critical information.

- **Resources**
  For posting documents, URLs to other websites, etc.

- **Discussion**
  For conversations in written form.

- **Assignments**
  For posting, submitting and grading online.

- **Drop Box**
  For private file sharing between instructor and student.

- **Chat Room**
  For real-time conversations in written form.

- **Email Archive**
  For viewing email sent to the site.

- **News**
  For viewing content from online sources.

- **Sakai Project**
  [http://www.sakaiproject.org](http://www.sakaiproject.org)

- **Installation FAQ**
  [http://bugs.sakaiproject.org/confluence/display/FAQ/Home](http://bugs.sakaiproject.org/confluence/display/FAQ/Home)

- **SakaiPedia**
  [http://bugs.sakaiproject.org/confluence/display/ENC/Home](http://bugs.sakaiproject.org/confluence/display/ENC/Home)

- **Web Content**
  For accessing an external website within the site.

- **Site Info**
  For showing worksite information and site participants

[Continue] [Cancel]
Tool Development

Last changed on 28-Mar-2005 by Mark J. Norton

For step-by-step guide to tool creation, have a look at Creating a Sakai Tool. This article focuses on the packing aspects of tools and components and how they are registered in the Sakai system.

⚠️ Coming Changes in Sakai 2.0

There are some significant changes being made to the Sakai kernel for the 2.0 release. Tool registration is likely to be very different.
The following is an overview of the Worksite Information feature.

**What it does**

On the homepage of each course website, you will see boxes that can contain general information, recent announcements, recent discussion items, and recent chat messages.

**Key concepts**

You can display a webpage or text in your Worksite’s Information box. To display a webpage, follow these steps:

1. In your Worksite’s Information box, click the circle next to “Display this URL”.
2. Enter the URL of the page you wish to display into the Source field.
3. To save your changes, click **Save**.

If you wish to display the text description you entered when you created your Worksite, follow these steps:

1. In your Worksite’s Information box, click the circle next to “Display Worksite Description”.
2. To save your changes, click **Save**.

**Things to consider**

- To open your Worksite’s homepage if it is not already open, click the **Home** button in the menubar.
Welcome to the Sakai 1.5 Installation FAQ. The FAQ provides information on how to upgrade, install, configure, modify and, when necessary, troubleshoot both the Sakai 1.5 QuickStart and Developer Editions.

Table of Contents

1. Getting Started
   a. How do I access Sakai’s CVS repository?
   b. How do I check my machine for Java and install it if I lack it?
   c. How do I join Sakai’s developer and user communities?
   d. How do I upgrade from Sakai 1.0 to Sakai 1.5?

2. Installing the Sakai QuickStart or Developer Edition
   a. Sakai 1.5 Developer Edition
      i. Installing the Sakai 1.5 Developer Edition
      ii. Configuring the Sakai 1.5 Developer Edition Database
   b. Sakai 1.5 QuickStart Edition
      i. Installing the Sakai 1.5 QuickStart Edition in a UNIX Environment
Complete the form, then choose the appropriate button at the bottom. A * means required information.

**Announcement**

- **Subject:**
- **Announcement:**

**Public View:**
- Yes
- No

**Email Notification:**
- None - No notification

[Post] [Preview] [Save Draft] [Cancel]
I would always use SAMigo for my surveys.

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

Question level feedback:

Insert New Question
Sakai 2.0 (July 2005)

- Significant replacement of legacy tools
  - TPP Compliant, using OKI and Sakai APIs
  - Tools will be richer and deeper
  - Each core institution will focus on a set of tools to develop

- SEPP partners will be involved in new tool development based on ability and commitment.

- Sakai organizational structures evolve to expand participation while maintaining core development focus
Etudes NG (Next Generation)
Foothill College
Foothill College – Work with Sakai

Effort led by Vivian Sinou, Dean of Distance & Mediated Learning

• Tools Development
• Skins Design
• Adoption & Implementation
• Pilots & Migration
• Training Workshops
• Performance Testing

With support from The William & Flora Hewlett Foundation
From CLE to CMS

Collaborative Learning Environment

+ 

Melete/Etudes NG

= 

Course Management System
College Brand Skins at Portal Level
Skins at Course Site Level
Composing content online using a WYSIWYG Editor

Linking to websites to supplement or support the content of a lesson

Uploading all types of documents for lesson components/content
Accessibility metadata

Ability to check for lack of compliance with Section 508 accessibility guidelines
Student View – Navigation & Licensing

Navigation is created automatically

Authors can license their content
Sakai to use JA-SIG’s uPortal

The Sakai tools will be built to the WSRP specification to run in any WSRP compliant portal with installed services.

uPortal also developed “aggregated layout” specifically designed to “push” course Web pages to students.
What is uPortal?

- Enterprise portal
- Framework for presenting aggregated content (channels)
- Personalization
- Role-based access control and layouts
- Open source, collaborative effort
- Java web application
Denison University
The end

jim farmer
jxf@immagic.com; jxf@UMich.edu
+1-202-296-2807
Publisher’s Note

- uPortal is a project of the JA-SIG Collaborative led by Carl Jacobson at the University of Delaware and funded, in part, from the Sakai Project.
- im+m has contributed to uPortal, and the Meteor and California Electronic Transcript Project prototypes referenced in these presentations.
- The author is Chairman of the Board of im+m and Sigma Systems Inc., contracted by the University of Michigan for the Sakai Educational Partners Program, and volunteers as uPortal Project Administrator.
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Sakai Overview

Charles Severance
Chief Architect, Sakai Project
www.sakaiproject.org
csev@umich.edu  www.dr-chuck.com

KYOU / sakai
Boundary, Situation
Publisher’s Note

Sakai Project Chief Architect Chuck Severance made this presentation February 25, 2005 at Michigan State University. It provides details of the development effort and his perspective on Sakai.

It is reproduced here for those who would like additional information. These materials were not used at the conference.
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 $2.4 million grant from Mellon
4 Colleges Collaborate on Open-Source Courseware

By ANDREA L. FOSTER

In what may be a big threat to commercial providers of course-management systems, four universities have announced a $6.8-million collaborative venture to create open-source courseware tools and related software for higher-education institutions.

The universities developing the system, called the Sakai Project, are the Indiana University system, the Massachusetts Institute of Technology, Stanford University, and the University of Michigan at Ann Arbor, which will lead the effort.

HEADLINES

- **Bush proposes** $250-million job-training program in visits to community colleges
- **U. of Pennsylvania** to name Amy Gutmann of Princeton as its new president
- **Record companies** sue 532 computer users, accusing them of illegally sharing songs
- **4 colleges** collaborate on open-source courseware
Sakai Funding

• Each of the 4 Core Universities Commits
  – 5+ developers/architects, etc. under Sakai Board project direction for 2 years
  – Public commitment to implement Sakai
  – Open/Open licensing – “Community Source”

• So, overall project levels
  – $4.4M in institutional staff (27 FTE)
  – $2.4M Mellon, $300K Hewlett
  – Additional investment through partners
What is Sakai?

- Sakai is a project - a grant for two years.
- Sakai is an extensible framework - provides basic capabilities to support a wide range of tools and services.
- Sakai is a set of tools - written and supported by various groups.
- Sakai is a product - a released bundle of the framework and a set of tools which have been tested and released as a unit.
The Sakai Project
Goals of the Sakai Project

• Develop an open-source collaborative learning environment
  – Suitable for use as a learning management system
  – Suitable for use as a small group collaboration system
  – Suitable for building research collaboratories
  – Improve teaching and learning by providing a rich and extensible environment
  – Bring research and teaching together
  – Move towards a personal learning and lifelong learning environment
Sakai Organization

Joseph Hardin
Sakai PI
Board Chair

Sakai Board
UM, IU, Stanford, MIT,
UCB, Foothill, OKI,
uPortal, Hull (UK)

Architecture Team

Product Requirements Team

Sakai Educational Partners

Project Management
Sakai Educational Partners - Feb 1, 2004

- Arizona State University
- Boston University School of Management
- Brown University
- Carleton College
- Carnegie Foundation for Advancement of Teaching
- Carnegie Mellon University
- Coastline Community College
- Columbia University
- Community College of Southern Nevada
- Cornell University
- Dartmouth College
- Florida Community College/Jacksonville
- Foothill-De Anza Community College
- Franklin University
- Georgetown University
- Harvard University
- Johns Hopkins University
- Lubeck University of Applied Sciences
- Maricopa County Community College
- Monash University
- Nagoya University
- New York University
- Northeastern University
- North-West University (SA)
- Northwestern University
- Ohio State University
- Portland State University
- Princeton University
- Roskilde University (Denmark)
- Rutgers University
- Simon Fraser University
- State University of New York

- Stockholm University
- SURF/University of Amsterdam
- Tufts University
- Universidad Politecnica de Valencia (Spain)
- Universitat de Lleida (Spain)
- University of Arizona
- University of California Berkeley
- University of California, Davis
- University of California, Los Angeles
- University of California, Merced
- University of California, Santa Barbara
- University of Cambridge, CARET
- University of Cape Town, SA
- University of Colorado at Boulder
- University of Delaware
- University of Hawaii
- University of Hull
- University of Illinois at Urbana-Champaign
- University of Minnesota
- University of Missouri
- University of Nebraska
- University of Oklahoma
- University of Texas at Austin
- University of Virginia
- University of Washington
- University of Wisconsin, Madison
- Virginia Polytechnic Institute/University
- Whitman College
- Yale University

In Process
- University of Melbourne, Australia
- University of Toronto, Knowledge Media Design Institute
Sakai SEPP Meetings

• Provide a forum for the core and the SEPP to interact and for the SEPP members to interact with one another
  – June 2004 - Denver Colorado (180)
  – December 2004 - New Orleans (200+)
  – June 8-14 - Baltimore
    • Community Source Week
    • uPortal, Sakai, OSPI
  – December TBD - Austin, TX

• Sakai meetings are invitation-only for SEPP members
Sakai Commercial Affiliates

• Companies who will use/sell/support Sakai
  – The rSmart group
  – Unicon
  – Embanet
  – Sungard SCT

• Provides companies access to Sakai core developers and SEPP staff

• Access to members-only Sakai meetings (i.e. like the SEPP)
IMS Tool Portability Group

- To work on ‘interoperability’ between and among CMS’s/CLE’s
- Focus is on making tools portable between systems (Sakai, WebCT, and Blackboard)
- Established to further the discussion with commercial and other CMS/CLE providers
- Will use web services and IFRAMES
- Will show working demonstration at the July 2005 Alt-I-lab with Samigo in Sakai, WebCT, and Blackboard
The Sakai Product (and Tools)
Placing the Sakai “Product”

- Learning Management Systems
  - BlackBoard
  - Angel
  - WebCT
- Collaborative Environments
  - Lotus Notes
  - Microsoft SharePoint
- Collaborative Frameworks
  - Moodle
Regarding student submissions to assignments
When creating a submission to an assignment in the Assignment tool, there is a difference between attaching a file to the submission and sending the submission to your instructor.

When you have browsed and selected one or more files to attach, you click the Save button in the attachment process to add those attachments (files) to your submission, but that does not send the submission to the instructor. The submission is still in progress at that point and the instructor cannot see it. You must click the Submit button at the bottom of the submission entry page to actually send in your work.

(CTools Support - Oct 15, 2004 1:13 pm)

Ctools – Production Sakai at University of Michigan

Welcome to CTools
CTools (formerly known as CTNG) is the newest of UM's online systems for research, project and course management.

What is CTools?
CTools is an enhanced version of the original UM.CourseTools, combined with UM.WorkTools, UM's research and project management system. Improvements in CTools include individual personal portals (called My Workspace), an interface that can be customized to a user's preferences, and much more. These changes are the result of feedback we have received from individual faculty members, students, focus groups and surveys.
Ctools – List of Worksites – Classes, Projects

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<th>Type</th>
<th>Owner</th>
<th>Status</th>
<th>Creation Date</th>
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<td>My Workspace</td>
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<td>hardin</td>
<td>Published</td>
<td>Dec 25, 2003 9:05 am</td>
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<td>Published</td>
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<td>Project</td>
<td>hardin</td>
<td>Published</td>
<td>Oct 1, 2003 7:07 pm</td>
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Introduction to the Semantic Web - Winter 2004

This is an introduction to the ideas, technologies and communities underlying the proposals and projects grouped under the rubric of the "Semantic Web." The course will take as a starting point the W3C vision, where "The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation." (Tim B-L), and will investigate the series of technologies in use and under development to achieve this vision, as well as sample applications of these technologies.

The course will be organized with an introductory overview of the semantic web, then briefly dive down into the first round of detail in XML/XML Schema, rising again to the overview.
Email Archive

You are authorized to send email from: hardin@umich.edu

Email sent to the following addresses will be archived and sent to participants:

si514@ctools.umich.edu
1072361202551-655206@ctools.umich.edu

Total number of messages: 29.
To view a message click the subject.

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<th>Sent</th>
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<td>[Fwd: homework for your class]</td>
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<td>Coorey, Daniel</td>
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Sakai Releases

• Sakai 1.0 - basic collaborative system - suitable for small pilots
• Sakai 1.5 - basic collaborative learning system - suitable for significant pilot’s
• Sakai 2.0 - collaborative learning system - suitable for significant production deployments
• Sakai 3.0 - hardening, portal integration, preparation for post-project
Sakai 1.0

- Great for small group collaboration
- Plug-in for single sign on and authentication
- All tools from CHEF, ported to Sakai
- Java Server Faces 1.0 development environment with initial set of Sakai tags
- Clustered environment support
- Scalability limited in terms of number of sites and number of users (some complex structures maintained in memory)
Sakai 1.0 Tools

Admin: Alias Editor (chef.aliases)
Admin: Archive Tool (chef.archive)
Admin: Memory / Cache Tool (chef.memory)
Admin: On-Line (chef.presence)
Admin: Realms Editor (chef.realms)
Admin: Sites Editor (chef.sites)
Admin: User Editor (chef.users)
Announcements (chef.announcements)
Assignments (chef.assignment)
C. R. U. D. (sakai.crud)
Chat Room (chef.chat)
Discussion (chef.discussion)
Discussion (chef/threadeddiscussion)
Dissertation Checklist (chef.dissertation)
Dissertation Upload (chef.dissertation.upload)
Drop Box (chef.dropbox)
Email Archive (chef.mailbox)

Help (chef.contactSupport)
Membership (chef.membership)
Message Of The Day (chef.motd)
My Profile Editor (chef.singleuser)
News (chef.news)
Preferences (chef.noti.prefs)
Recent Announcements (chef.synoptic.announcement)
Recent Chat Messages (chef.synoptic.chat)
Recent Discussion Items (chef.synoptic.discussion)
Resources (chef.resources)
Sample (sakai.module)
Schedule (chef.schedule)
Site Browser (chef.sitebrowser)
Site Info (chef.siteinfo)
Web Content (chef.iframe)
Worksite Setup (chef.sitesetup)
WebDAV
Sakai 1.5

- 1.5 = halfway between 1.0 and 2.0
- A production ready collaborative learning environment
- Scaling significantly improved - memory structures moved into the data base and tuned for performance.
- Revised JSF 1.1 development environment
- IFRAME Portal integration
- Additional plug ins for sites (classes) and roles within sites
- Some aspects of Sakai framework and APIs will still be in flux through 2.0
Sakai 1.5 Tools

• Samigo - QTI compliant assessment engine (Stanford)
• Syllabus Tool (Indiana)
• Context Sensitive Help (Indiana)
• Presentation Tool (SEPP)
• Contributed Tools (not part of bundle)
  – Blackboard Import (Texas)
  – Xwiki (Cambridge)
• Portfolio Tool - OSPI (R-Smart) (separate release)
Sakai 2.0

- Sakai Style Guide compliance for the core tools
- Improved content management
- Hierarchical sites throughout
- Sakai APIs and framework complete
- TPP Published
- Significant polish beyond 1.5
Sakai 2.0 (New Tools)

- Melete - module editor
- Gradebook
- Contributed tools
  - TBD…
Sakai 3.0

• Internationalization
• Portal Integration
  – WSRP
  – JSR-168
• Web Services
• Hardening, design documentation
• Possible:
  – JSP and/or JYTHON
Sakai in Early Production

• University of Michigan
  – September 2004 - Sakai 1.0 production
  – January 2005 - Sakai 1.5 production
  – CourseTools scheduled for shutdown 4/05

• Indiana University
  – September 2004 - Sakai 1.0 small pilot
  – January 2005 - Sakai 1.5 large pilot
  – September 2005 - Sakai 2.0 full production
Published Friday, February 25, 2005

Sakai offers new classes server option

BY JEFF MUSKUS

Staff Reporter

Like many Yalies, Tyler Guth '08 and his peers in "Introductory Statistics" do their homework together. But unlike the small groups that frequently gather at Au Bon Pain or Koffee Too?, Guth said virtually his entire class chats about their assignments without ever leaving their rooms.

Guth is one of nearly 100 Yale students currently registered on Sakai, an open-source computer program designed to offer a more streamlined and user-friendly version of the University's classes server, Academic Media and Technology Director Charles Powell said Thursday. The software's pilot program at Yale, which began in January, includes 11 faculty members and seven courses in departments from Statistics to Chinese. Originally coded by developers from Stanford University, the Massachusetts Institute of Technology, the University of Michigan and Indiana University, Sakai is now in place at 66 institutions.

While the program is still relatively new at Yale, Powell said the response from students and faculty has been encouraging.
In production use
With >25,000 users at U Michigan

On to Stanford, UC-Berkeley, Foothill, MIT in 2005
CVS – Core Effort - ~35/day
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<td><a href="mailto:ggolden@umich.edu">ggolden@umich.edu</a></td>
<td>[sakai] cvs commit: sakai/legacy-component/src/java/org/sakaiutil</td>
<td>12/1/04 10:41 AM</td>
</tr>
<tr>
<td><a href="mailto:ggolden@umich.edu">ggolden@umich.edu</a></td>
<td>[sakai] cvs commit: sakai/legacy-component/src/java/org/sakaiutil</td>
<td>12/1/04 10:41 AM</td>
</tr>
</tbody>
</table>
The Sakai Framework
Sakai Technical Goals

• Provide environment to write tools and services which seamlessly move from one Sakai deployment to another
• Provide environment where the addition of a new tool does not de-stabilize the existing tools
• Provide environment to allow tools to exist both within Sakai and standalone (i.e. easy porting of external tools into Sakai without requiring rewrite)
• Provide capabilities so that Sakai services and tools can be accessed using web services.
Sakai Foundational Documents

• **Sakai Style Guide** - Describes in detail how Sakai tools are to look and operate regardless of implementation technology

• **Sakai Java Framework** - Describes the Sakai Application Framework (SAF) as implemented in Java

• **Sakai Tool Portability Profile** - Describes how to write tools and services to be portable across Sakai systems (in progress)
Service Oriented Architecture

• Decompose tool code into presentation elements and service elements
• Provide an abstraction (API) which shields the tool code from the implementation details of the service code.
• Allows separate development of the tools and services.
• Allows effective unit testing of services
• Allows an implementation to be replaced transparently with another implementation as long as the API contract is fully met
Service Oriented Architecture

Browser

My Monolithic Code

Persistence

Browser

Presentation Code

Service Code

Persistence

Service Interface (i.e. API)
Sakai Application Framework

- SAF - Kernel - An augmented web application which enables the Sakai APIs to be called from the web application - this is a rich but not constraining environment
- SAF - Common Services - A set of common services available to all tools (authentication, authorization, hierarchy, repository, others)
- SAF - Presentation Services - A set of Sakai specific JSF tags to handle presentation details and provide widgets such as a date-picker or WSYWIG editor.
Sakai Integration/Development

• Develop a TPP Compliant Tool
  – Assured to be portable across Sakai environments

• Integrate a web application
  – Responsible for own presentation and compliance to style guide (may use Sakai JSF tags if JSF is used)
  – Can operate both stand-alone and within Sakai

• Integrate via web-services
  – Capability
Sakai Tool Layout in JSF

<sakai:view_container title="#{msgs.sample_title}" />
<sakai:tool_bar>
    <sakai:tool_bar_item/>
</sakai:tool_bar>
<sakai:instruction_message value="#{msgs.sample_one_instructions}" />
<sakai:group_box title="#{msgs.sample_one_groupbox}" >
    <h:inputText value="#{MyTool.userName}" />
    <sakai:date_input value="#{MyTool.date}" />
</sakai:group_box>
<sakai:button_bar>
    <sakai:button_bar_item action="#{MyTool.processActionDoIt}"
        value="#{msgs.sample_one_cmd_go}" />
</sakai:button_bar>
Sakai Service Providers

- Common Services are localized using plug-ins
  - UserDirectoryProvider
  - RealmProvider
  - CourseManagementProvider
- These will be expanded
  - RepositoryProvider
  - OKI OSID Based Providers
- Plug-ins do not replace the persistence, they are consulted in order to populate Sakai structures
Sakai and Portals

• Sakai was initially intended to be a “portal plus a bunch of tools” - shake well and viola! You have a learning management system.

• Initially this seemed simple enough
  – Buttons and rectangles
  – Collection of tools deployed in various configurations with various administration options

• Portals and Learning Management systems turn out to be very different problems to solve

• Sakai needs to work both in a portal and LMS environment (a bit stressful)
Portals vs. LMS

- Organized by enterprise and are often driven by the office of communications (Library, HR, Athletics, President)
- Often geared to individual customization
- Many small rectangles to provide a great deal of information on a single screen
- Portals think of rectangles operating independently - like windows
- Think “Dashboard”

- Organized by academic aspects and are driven by the registrar (Colleges, Departments)
- LMS’s are customizable by faculty or departments but not typically by students
- LMS’s like one tool on the screen at a time.
- LMS’s think of navigation as picking a tool or switching from one class to another
- Think “Application”
Sakai Portal Integration

• Sakai TPP Tools will run in JSR-168 portals - “Write once run anywhere”.
• An entire Sakai site can be included at some point in an enterprise portal
  – iFrames - separate sign on (or WebISO)
  – WSRP - shared sign on via trust between portal and Sakai
• Portions many Sakai sites, tools, or pages can be aggregated to produce a personal federated view for an individual - moves toward a personal learning and research environment.
Installing and Deploying Sakai

• Download Quick Start and follow instructions - 5-10 minutes - this is a developer edition with an in-memory database (HSQLDB)

• Install a real database (MySql, Oracle) and reconfigure Sakai to run in production
The Sakai Community

- Main site: www.sakaiproject.org
- Bugs: bugs.sakaiproject.org
- Sakai-wide collaboration area
  - collab.sakaiproject.org
  - sakai-dev@sakaiproject.org
  - sakai-user@sakaiproject.org
- Sakai Educational Partners (SEPP)
  - Separate mailing lists
  - Dedicated staff
  - Two meetings per year
Sakai’s Future

• Initial grant ends December 2005
• Long term steady state
  – The SEPP is renamed “Sakai” (800K/year)
  – Governance is merit-based (like Apache)
  – Core elements of Sakai are pretty stable (see 3.0)
  – Small SEPP funded team (5+) and contributed in-kind resources to keep the core maintained and slowly evolving
• Short Term
  – May be an extension from Mellon
  – May have increased commercial support
Summary

• Sakai certainly get the award for “most hype” in 2004
• The project continues to deliver releases on schedule
• The 1.5 release is the first “production ready” release for the learning management application space
• The 2.0 release will really “tell the tale” of the impact of Sakai in the long term
• Many are “early adopters” and willing to commit very deeply to be part of the creation of Sakai while others are waiting as customers and will take it when it “comes out”. Both of these are good approaches.