

A large, abstract graphic on the left side of the page, consisting of several overlapping, curved, semi-transparent shapes in shades of gray, creating a sense of depth and movement.

# **SUN AND EDUCATION COMMUNITIES**

June 2006

## Chapter 1

Welcome to the "Participation Age." Advances in technology have made it possible for more and more people to connect with each other to participate, to learn, to share work flows, to purchase goods and services, to create. Sun supports the Education and Research community by creating and participating in a number of education communities. Participate with us!

# Sun-Sponsored Education Communities

**Education Commons:** a virtual community of academic systems users, designers and systems implementers sharing knowledge, experiences and best practices. Education Commons builds on the concept of "community source" and extends the collaborative development model to all aspects of the use of technology to further the progress of transformational change in education. The goal of the community is to create an open and transparent system of communication between diverse groups committed to advancing the state of education worldwide.

<http://educationcommons.org/commons/>

**Global Education & Learning Community (GELC):** The goal of GELC is to become the premier community for sharing resources for education, in order to solve the problem of universal access to education, instructional materials, and qualified instructors. The Global Education & Learning Community was founded by Sun Microsystems in March 2004 as an interactive community of people interested in education: teachers, academics, researchers, programmers, authors, corporate trainers, administrators, public officials, students and others. This community collaborates to develop, aggregate, and share globally a repository of open source curriculum, open education resources, content development tools, research, and other learning materials. This curricula will range from K-12 to higher education and lifelong and life skill learning.

<http://www.gelc.org>

**Java™ Architectures - Special Interest Group (JA-SIG):** an independent organization designed to increase the flow of information between institutions and companies involved in administrative applications development using Java technology. The JA-SIG sponsors a twice-yearly conference, facilitates the sharing of Java components, and leads development of uPortal (a free open-source, open-standards portal for higher education).

<http://www.ja-sig.org/>

**Knowledge Enterprise Special Interest Group (KESIG):** The Knowledge Enterprise Special Interest Group aims to keep Higher Education and Primary and Secondary (K12) Sun customers up-to-date with relevant Sun technology and open standards initiatives, to provide support for the user community, and to provide a forum to discuss recent developments.

<http://www.sun.com/edu/commofinterest/elearning/sig/>

**Open Media Commons:** an open source community project launched by Sun Microsystems to develop royaltyfree codecs and digital rights management (DRM) solutions. There are three main goals of the Open Media Commons:

1. Develop an open-source, royalty-free solution for the distribution of digital content, focused on authenticating people and roles, not just devices.
2. Address the application of DRM technology to a wide range of content and situations, including personal rights management, the privacy of health records, and compliance management for businesses dealing with Sarbanes-Oxley.

3. Create an open environment where creators, content owners, consumers, network operators, technology providers and consumer electronics device manufacturers can work together to address the technical problems associated with DRM.

<http://www.openmediacommons.org/>

**Sun Developer Network (SDN):** The Sun Developer Network (SDN) Academic Developer Program is all about empowering Academic Developers through sharing, collaboration and open innovation. Not coincidentally, these are key elements of what Sun refers to as “the Participation Age”. So, whether you're a student and new to Java or Solaris, an educator looking to incorporate the latest innovations in your curricula, a researcher building high performance applications or a hard-core game developer, the SDN Academic Developer Program offers ready access to the tools, resources and communities in which to participate and share.

<http://www.developers.sun.com/learning/academic>

## Chapter 2

# Sun Support of Open Source/Community Source Projects

**Sakai Project:** a community source software development effort to design, build, and deploy a new Collaboration and Learning Environment (CLE) for higher education. The Sakai Project's primary goal is to deliver the Sakai application framework for course management and research collaboration. The tools are being built by designers, software architects and developers at different institutions, using an experimental variation of an open-source development model called the community source model. Sun Microsystems is supporting the promotion and implementation of the Sakai Collaborative and Learning Environment

<http://sakaiproject.org/>

**Fedora:** jointly developed by Cornell University and the University of Virginia Library, Fedora is open-source software that gives organizations flexible tools for managing and delivering digital content. Some examples of applications that are built upon Fedora include library collections management, multimedia authoring systems, archival repositories, institutional repositories, and digital libraries for education.

<http://www.fedora.info/>

**DSpace:** an open-source digital repository system that captures, stores, indexes, preserves, and redistributes an organization's research data. Jointly developed by MIT Libraries and Hewlett-Packard Labs, the DSpace software platform serves a variety of digital archiving needs.

<http://www.dspace.org/>

**Pachyderm:** a partnership led by The New Media Consortium (NMC) and the San Francisco Museum of Modern Art, and funded by the Institute for Museum and Library Services (IMLS). The project has brought software development teams and digital library experts from six NMC universities together with counterparts from six major museums to create a new, open-source authoring environment for creators of web-based and multimedia learning experiences.

<http://www.pachyderm.org/>

**Moodle:** a free, open-source course management system designed to help educators create effective online learning communities. It offers students easy access to course content and online resources such as the library, digital reading rooms, and forums for online discussions between instructors and students.

<http://moodle.org/>

**Digital Publishing System (DpubS):** open-source software being developed at Cornell University that meets the full range of electronic publishing needs. The origins of DPubS are from the Dienst system, developed by Cornell's Computer Science department in the mid 1990s and used for several years as the engine behind NCSTRL, a distributed network of Computer Science technical reports. This code base has been completely modified, enhanced and extended by Cornell University Library.

<http://dpubs.org/>

**Open Source Portfolio (OSP):** a collaborative, open-source software development project based on the University of Minnesota Enterprise System's electronic portfolio software. The University of Minnesota, University of Delaware, and the r-smart group founded this collaborative to open the evolution of the University's ePortfolio to diverse input, rapid development, and widespread use. The OSP ePortfolio harnesses the creative work of “folio thinking” thought leaders into a set of powerful tools that interoperate in the Sakai framework.

<http://www.osportfolio.org/>

**Centre/Open Student Information System::** Centre is a web-based, open source, student management product with features that include student demographic info, scheduling, grade book, attendance, report cards, eligibility, and transcripts.

**Storage Resource Broker (SRB):** a data grid middleware software system developed by the San Diego Supercomputer Center (SDSC) and commercialized by Nirvana that is operating in many national and international computational science research projects. SRB supports shared collections that can be distributed across multiple organizations and heterogeneous storage systems. SRB provides a uniform interface to heterogeneous data storage resources over a network.

[http://www.sdsc.edu/srb/index.php/Main\\_Page](http://www.sdsc.edu/srb/index.php/Main_Page)

## Chapter 3

# Sun Participation in Open Standards Communities

**IMS Global Consortium:** IMS develops and promotes the adoption of open technical specifications for interoperable learning technology. Several IMS specifications have become worldwide de facto standards for delivering learning products and services. More than 50 contributing members and affiliates come from every sector of the global eLearning community. They include hardware and software vendors, educational institutions, publishers, government agencies, systems integrators, multimedia content providers, and other consortia. The Consortium provides a neutral forum in which members with competing business interests and different decision-making criteria collaborate to satisfy requirements for interoperability and re-use.

<http://www.imsglobal.org/>

**Digital Library Federation (DLF):** an international association of libraries and allied institutions. Its mission is to enable new research and scholarship of its members, students, scholars, lifelong learners, and the general public by developing an international network of digital libraries. DLF relies on collaboration, the expertise of its members, and a nimble, flexible, organizational structure to fulfill its mission. DLF documents and promotes strategies for developing sustainable, scaleable, digital collections, and encourages the development of new collections and collection services.

<http://www.diglib.org/>

**American Library Association (ALA):** the oldest and largest library association in the world, with more than 64,000 members. Its mission is to promote the highest quality library and information services and public access to information. Its mission is “to provide leadership for the development, promotion, and improvement of library and information services and the profession of librarianship in order to enhance learning and ensure access to information for all.”

<http://www.ala.org/>

**International Federation of Library Associations (IFLA):** the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession. IFLA has Formal Associate Relations with UNESCO, observer status with the United Nations, associate status with the International Council of Scientific Unions (ICSU), observer status with the World Intellectual Property Organization (WIPO), observer status with the International Organization for Standardization (ISO), and observer status with the World Trade Organization (WTO).

<http://www.ifla.org/>

**Coalition for Networked Information (CNI):** an organization dedicated to supporting the transformative promise of networked information technology for the advancement of scholarly communication and the enrichment of intellectual productivity. Some 200 institutions representing higher education, publishing, network and telecommunications, information technology, and libraries and library organizations make up CNI's members. Semi-annual Task Force Meetings bring together representatives of these constituencies to discuss ongoing and new projects and plan for future initiatives. CNI also hosts a variety of networked information projects.

<http://www.cni.org/>

**METS – US Library of Congress:** The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library, expressed using the XML schema language of the World Wide Web Consortium. The standard is maintained in the Network Development and MARC Standards Office of the Library of Congress, and is being developed as an initiative of the Digital Library Federation.

<http://www.loc.gov/standards/mets/>

**Joint Conference on Digital Libraries (JCDL):** The Joint Conference on Digital Libraries is a major international forum focusing on digital libraries and associated technical, practical, and social issues. JCDL enhances the tradition of conference excellence already established by the ACM and IEEE-CS by combining the annual events that these professional societies have sponsored on an annual basis, the ACM Digital Libraries Conferences and the IEEE-CS Advances in Digital Libraries Conferences. Participation is sought from all parts of the world and from the full range of disciplines and professions involved in digital library research and practice, including computer science, information science, librarianship, archival science and practice, museum studies and practice, technology, medicine, social sciences, and humanities.

<http://www.jcdl.org/>

**eLearning Industry Group (e-Lig):** The eLearning Industry Group, eLIG, is an open consortium of leading ICT (information and communications technology) companies and eLearning content providers who seek to promote eLearning throughout Europe in schools, universities, the workplace and homes. The eLearning Industry Group advises the European Commission and national governments in areas such as essential information technology and telecommunications infrastructure, open standards to facilitate the exchange of eLearning content, the development of a sustainable market for eLearning content, and the development of relevant professional and personal skills.

<http://www.elig.org/>

**Institute for Museum and Library Services (IMLS):** The Institute of Museum and Library Services is the primary source of federal support for the nation's 122,000 libraries and 17,500 museums. Its mission is to grow and sustain a "Nation of Learners" because life-long learning is essential to a democratic society and individual success. Through its grant making, convenings, research and publications, the Institute empowers museums and libraries nationwide to provide leadership and services to enhance learning in families and communities, sustain cultural heritage, build twenty-first-century skills, and increase civic participation.

<http://www.ims.gov/>

**The Worldwide Web Consortium (W3C):** an international consortium where Member organizations, a full-time staff, and the public work together to develop Web standards. W3C's mission is to lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web. W3C primarily pursues its mission through the creation of Web standards and guidelines. Since 1994, W3C has published more than ninety such standards, called W3C Recommendations. W3C also engages in education and outreach, develops software, and serves as an open forum for discussion about the Web.

<http://www.w3.org/>

**Joint Information Systems Committee (JISC):** a publicly-funded UK-wide body supporting the use of ICT and related technology for learning, teaching, research and administration in further and higher education. Alongside support and advisory functions, and the allocation of some targeted funding, JISC supports the JANET broadband internet backbone and associated local network structures via UKERNA (the United Kingdom Education and Research Networking Association).

<http://www.jisc.ac.uk/>

**Advanced Distributed Learning (ADL):** formed as a developer and implementer of learning technologies across the Department of Defense (DoD). ADL employs a structured, adaptive, collaborative effort between the public and private sectors to develop the standards, tools and learning content for the learning environment of the future. The vision of the ADL Initiative is to provide access to the highest-quality learning and performance aiding that can be tailored to individual needs and delivered cost-effectively, anytime and anywhere. ADL's SCORM is a collection of specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content.

<http://www.adlnet.org/>

**Institute of Electrical and Electronics Engineers (IEEE):** an international professional association for the advancement of technology. It sponsors more than 300 conferences and has published about 900 active standards. More than 400 additional standards are under development. With nearly 100,000 members, the IEEE Computer Society is the world's leading organization of computer professionals. Founded in 1946, it is the largest of the 39 societies of the IEEE. The IEEE Computer Society is dedicated to advancing the theory, practice, and application of computer and information processing technol-

ogy. Through its conferences, applications-related and research-oriented journals, local and student chapters, distance learning campus, technical committees, and standards working groups, the Society promotes an active exchange of information, ideas, and technological innovation among its members.

<http://www.ieee.org/>

**Association for Computing Machinery (ACM):** the first scientific and educational computing society. ACM provides the computing field's premier digital library and serves its members and the computing profession with leading-edge publications, conferences, and career resources. ACM is organized into over 170 local chapters and 34 special interest groups (SIGs), through which it conducts most of its activities. Many of the SIGs, like SIGGRAPH, SIGPLAN and SIGCOMM, sponsor regular conferences which have become famous as the dominant venue for presenting new innovations in certain fields. The SIGs also publish a large number of specialized journals, magazines, and newsletters.<sup>4</sup> Sun Participation in Open Content Communities

<http://www.acm.org/>

## Chapter 4

# Sun Participation in Open Content Communities

**Open Content Alliance:** the collaborative efforts of a group of cultural, technology, nonprofit, and governmental organizations from around the world that will build a permanent archive of multilingual digitized text and multimedia content. OCA plans to build a free, permanent online repository for a wide range of print and multimedia content, including both copyrighted works and those that have passed into the public domain. The OCA will encourage the greatest possible degree of access to and reuse of collections in the archive, while respecting the content owners and contributors.

<http://www.opencontentalliance.org/>

**Hewlett Foundation:** The William and Flora Hewlett Foundation has partnered with the Andrew W. Mellon Foundation to support a number of open content-related projects, including MIT's OCW, JSTOR, a scholarly journal archive, and Ithaka, an umbrella organization under development to promote collections of scholarly work.

<http://www.hewlett.org/>

**Andrew W. Mellon Foundation:** studies the uses of digital technologies that can be applied to research and online/distance learning and teaching. The Foundation also supports investigations of new technical approaches to the archiving of textual and multimedia materials that require improved search and storage techniques and improvements in user-interfaces. The impact of information technology (and especially digitization) on scholarship, scholarly communication, and libraries is indisputable. The Foundation has played a major role in developing programs that use the Web to make large volumes of materials available to scholars, students, teachers, and institutions. Mellon's widely admired JSTOR (making available digital copies of scholarly journals in the arts, sciences, and humanities) was the first such major initiative.

<http://www.mellon.org/>

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