

***MERLOT and the Digital Marketplace:
CSU Strategies for Providing Affordable
“Textbook Content” through
Technology Innovations***

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Senior Director, Academic Technology Services
Executive Director, MERLOT
California State University System
April 13, 2007

California State University System

- 23 campuses: Small to Large – Urban to Rural
 - 417,000 students
 - 46,000 faculty and staff
 - 84,000 degrees and 13,000 teacher credentials each year.
 - Total student fees average \$3,199 per year
 - Access to an excellent education is our mission
 - Accept top 1/3 of high school seniors

CSU Initiatives to Reduce Costs of Textbooks

- Textbook Affordability Taskforce
 - Improving current business practices
 - Implementing innovative business practices
- MERLOT – Multimedia Educational Resource for Learning and Online Teaching
- Digital Marketplace

<http://www.calstate.edu/ats>

MERLOT: Multimedia Educational Resource for Learning & Online Teaching

A free and open community for all who use, share, advise & evaluate online teaching and learning materials since 1997

- 44,000 members growing at 1,100+ per month

A free digital library of online teaching and learning materials that is open for all to use

- 16,000 materials across all disciplines contributed by members

A consortium of higher education institutions, K-12 schools, professional societies, digital libraries, corporations, and other organizations supporting educational improvement through technology

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

Example of a MERLOT material: Static image of a simulation; The real simulation allows users to change pressure, temperature, and volume and measure the speed of particles.

Graph of particle speeds. Lines are the average speeds.
Copyright 2000 by Michael Abraham, and John Gelder.
Authored by Kirk Haines, John Gelder, and Michael Abraha

If the applet did not appear, you may need to download the newest version of your browser and/or OS Java implementation.

access the instructions on how to use this software, and examples of guided inquiry and open-ended inquiry activities [click here](#).

Applet GLP started

Internet

7:52



Search Materials: **GO**

advanced search | search more digital libraries

- Home
- Communities
- Learning Materials
- Member Directory
- My Profile
- About Us

Take A Tour of the new MERLOT

Welcome to MERLOT

Putting Educational Innovations Into Practice
Find peer reviewed online teaching and learning materials. Share advice and expertise about education with expert colleagues. Be recognized for your contributions to quality education.

Visit a Discipline Community

Find discipline expertise and online curricula to help you advance your career.

- Biology
- Business
- Chemistry
- Engineering
- Health Sciences
- History
- Information Technology
- Mathematics
- Music
- Physics
- Psychology
- Statistics
- Teacher Education
- Teaching and Technology
- World Languages

Exploring MERLOT in Teaching and Technology

Learning Materials
Browse peer reviewed online learning materials in your discipline.

Colleagues
Find expert colleagues in your discipline.

Personal Collections
View personal collections from people in your discipline.

Assignments
Get assignments you can use with your students.

Guest Experts

Logged In [Logout]

- Welcome Gerry**
- Edit your profile
 - VSB** Edit your VSB Profile
 - Create a personal collection
 - WS** My Workspace

Participate

Contribute a Material

Title:

URL:

Next

Become a Campus, System, Corporate or Institutional Partner



- Browse the Collection**
- Arts
 - Business
 - Education
 - Humanities
 - Mathematics and Statistics
 - Science and Technology
 - Social Sciences
- [View category index](#)

What's New in MERLOT

News & Announcements

16472 materials,
196 recently added
44361 members,
1150 recently joined

[Show more](#)



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Learning Materials

Welcome Gerry Hanley ([Editor in Psychology](#)) | [Log Out](#)

Browse Path: [All](#) > [Science and Technology](#)

[Contribute A Material](#)

Science and Technology

- [Agriculture \(64\)](#)
- [Health Sciences \(541\)](#)
- [Information Technology \(814\)](#)
- [Nanotechnology \(173\)](#)
- [Physics \(1655\)](#)
- [Astronomy \(225\)](#)
- [Biology \(1306\)](#)
- [Chemistry \(486\)](#)
- [Computer Science \(530\)](#)
- [Engineering \(448\)](#)
- [Fire Safety \(173\)](#)
- [General Science \(134\)](#)
- [Geology \(224\)](#)

Contribute a Material

* Title:

* URL:

[Next](#)

New Search: Science and Technology Advanced Search

Items 1-10 shown of 6541 results Sort by: Overall Rating

DNA from the Beginning
 Author: Unknown
 DNA from the Beginning is an animated tutorial on DNA, genes and heredity. The science behind each...
 Type: Simulation
 Date Added: Apr 11, 2000



[Peer Review](#) ★★★★★
[Comments](#) (12) avg: ★★★★★

[Personal Collections](#) (148)
[Assignments](#) (4)
[Author Snapshot](#)

Virtual Chemistry Laboratory
 Author: The IrYdium Project, David Yaron
 Here's your chance to mix chemicals without wearing safety goggles. You won't spill any acid on the...
 Type: Simulation
 Date Added: Apr 12, 2001



[Peer Review](#) ★★★★★
[Comments](#) (3) avg: ★★★★★
[Personal Collections](#) (78)
[Assignments](#) (2)

Physlets
 Author: Wolfgang Christian
 Educational physics applets designed to be scripted in JavaScript for use in quizzes, homework problems,...
 Type: Collection
 Date Added: Mar 14, 1998



[Peer Review](#) ★★★★★
[Comments](#) (3) avg: ★★★★★
[Personal Collections](#) (25)
[Assignments](#) (3)



Search Materials: **GO**[advanced search](#) | [search more digital libraries](#)[Home](#)[Communities](#)[Learning Materials](#)[Member Directory](#)[My Profile](#)[About Us](#)

Material Detail

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Virtual Chemistry Laboratory

[Send To A Friend](#)[ChemCo lecture](#)**Material Type:** Simulation**Technical Format:** Java Applet**Cost involved:** no**Location:** [go to material](#)**Date Added:** April 12, 2001**Date Modified:** February 21, 2007**Author:** The IrYdium Project, David Yaron [Carnegie Mellon University](#)**Submitter:** [Donovan Lange](#)

Description:

Here's your chance to mix chemicals without wearing safety goggles. You won't spill any acid on the spectrometer in this lab. Choose solutions from the vast database and mix 'em together till the cloned cows come home. Marvel as the chemical solutions react in real time.

Browse in Categories:

- [Science and Technology/Chemistry/Chemical Education](#)
- [Science and Technology/Chemistry/Introductory and General](#)

More information about this material:

About this material:

[Peer Reviews](#) (1) avg: ★★★★★[Comments](#) (3) avg: ★★★★★[Assignments](#) (2)[Personal Collections](#) (78)

Add your own:

[Write a comment](#)[Create an assignment](#)

Add to a personal collection:

Add

Authorized users only:

[Edit material](#)[Delete material](#)[Manage awards](#)[Manage snapshots](#)[Material Workspace](#) **WS**

Assignment

Welcome Gerry Hanley ([Editor in Psychology](#)) | [Log Out](#)**Material:** [Virtual Chemistry Laboratory](#)**Submitted by:** [Moustapha Diack](#) on Mar 04, 2004**Title:** Chemistry of Acids and Bases

Description: In this Pre-lab you will design and conduct the following acid base titration:

- 1) Hydrochloric acid, HCl (strong acid), with sodium hydroxide, NaOH (strong base)
- 2) Hydrochloric acid, HCl (strong acid), with ammonia, NH₃ (weak base)
- 3) Acetic acid, HC₂H₃O₂ (weak acid), with sodium hydroxide, NaOH (strong base)
- 4) Acetic acid, HC₂H₃O₂ (weak acid), with ammonia, NH₃ (weak base)

Students design their own experiments to complete the titration experiments. They a formal laboratory report addressing the following questions.

In which trial(s) did Phenolphthalein change color at about the same time as the large increase in pH occurred at the equivalence point? In which trial(s) was there a significant difference in these two times? Suggest and test a more suitable indicator for the designed experiments. The stock room of the virtual lab features other indicators such as Bromocresol Green, Cresol Red, Methyl Orange and Methyl Red. By examining a titration curve, how can you decide which acid-base indicator to use to find the equivalence point?

Of the four titration curves, which combination of strong or weak acids and bases had the longest vertical region of the equivalence point? The shortest? The acid-base reaction between HCl and NaOH produces a solution with a pH of 7 at the equivalence point (NaCl + H₂O). Why does an acid-base indicator that changes color at pH 5 or 9 work just as well for this reaction as one that changes color at pH 7? In general, how does the shape of a curve with a weak specie (NH₃ or HC₂H₃O₂) differ from the shape of a curve with a strong specie (NaOH or HCl)? Write each of the equations for the acid/base titrations. Use a data acquisition program to record Vol NaOH vs. pH and plot the titration curves.

Type of Task: Student-centered**Time Required:** 3 hours**Topics:** Chemistry Pre-Laboratory Assignment

Authorized users only:

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Member Profile

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MERLOT Account Details



Moustapha Diack

Professor Science/Math Education & Chemistry
Southern University, Baton Rouge, LA 70813

Email: mdiack@aol.com

Primary Discipline: Instructional Technology

Member Type: Faculty

Last Login: Mar 14, 2007

Member Since: Oct 02, 2000

View MERLOT Contributions:

- [Submitted Materials \(31\)](#)
- [Assignments \(3\)](#)
- [Personal Collections \(6\)](#)
- [Virtual Speakers Bureau Profile](#)

Authorized users only :

- [Make a Peer Reviewer](#)
- [Login As User](#)
- [Inactivate User](#) [Delete User](#)

Contact Information

Phone: (225) 771 2028, (225) 774 2379

Fax: (225) 771 3992

Professional URL: <http://www.subr.edu>

Skills and Interests

Education/TeacherEd/Instructional Technology (Advanced)
Science and Technology/Chemistry/Introductory and General (Advanced)

MERLOT's Higher Ed System Partners

- California Community Colleges
- California State University System
- Colorado Community Colleges
- CLOE/ Ontario Canada Higher Ed Cooperative
- Louisiana Board of Regents
- Minnesota State U and Colleges
- Oklahoma State Regents for Higher Education
- State Univ of New York System
- Tennessee Board of Regents
- University of Georgia System
- University of North Carolina System
- University of Michigan
- University of Wisconsin
- Virginia Community College System

MERLOT's Higher Ed Campus Partners

- Cornell University
- Indiana State University
- Troy University
- St. Petersburg College, FL
- Queens College, CUNY
- Seton Hall
- National University of Rwanda
- University of Dakar
- Arkansas State University
- Utah State University
- Wesleyan University
- Brigham Young University
- Ohio State University
- Addis Ababa University



Our Other Partners

- **Increasing access to collections with other Digital Libraries**
 - Edna (Australia)
 - CAUSE (statistics)
 - NIME (Japan)
 - O'Reilly Media (IT)
 - NSDL (Sciences)
 - ARIADNE (EU)
 - COMPadre (physics)
 - Journal of Chemical Education
 - UNC Professional Development
 - IEEE Computer Society
- **Partnering with Higher Education Organizations**
 - EDUCAUSE Learning Initiative
 - New Media Consortium
 - Carnegie Foundation
 - TLT Group
 - NASA-JPL
 - Nanotechnology Hub
- **Partnering with Learning Management Systems**
 - Blackboard
 - WebCT
 - Angel Learning
 - Desire2Learn
 - Epsilen
 - Moodle
 - Saki*
- **Technology Corporations supporting us**
 - O'Reilly Media
 - Adobe
 - Sun Microsystems
 - MIC Sponsors

MERLOT is a sustained consortium of higher education institutions collaboratively managed by its members

Type of Participation
State System Level (\$25K+ in-kind)
Campus Level (\$6.5K+ in-kind)
18 Editorial Boards
250+ Editorial Board Members (Volunteer)
9 Administrative Team Members (CSU)

- Funding support from Corporations and Federal Grants
- In-kind support in the form of faculty support, training, marketing, technology development
- California State University provides sustained “foundational support” for MERLOT

Summary Part 1: Sustainable MERLOT Services for Everyone

- Easy and free access to content for faculty and student use
- Enable custom reuse of free content into faculty designed curriculum
- Create personal collections for local priorities
- Find what “people like you” recommend and use
- Get connected with others
- Contribute and share your expertise
- Get recognition for your contributions

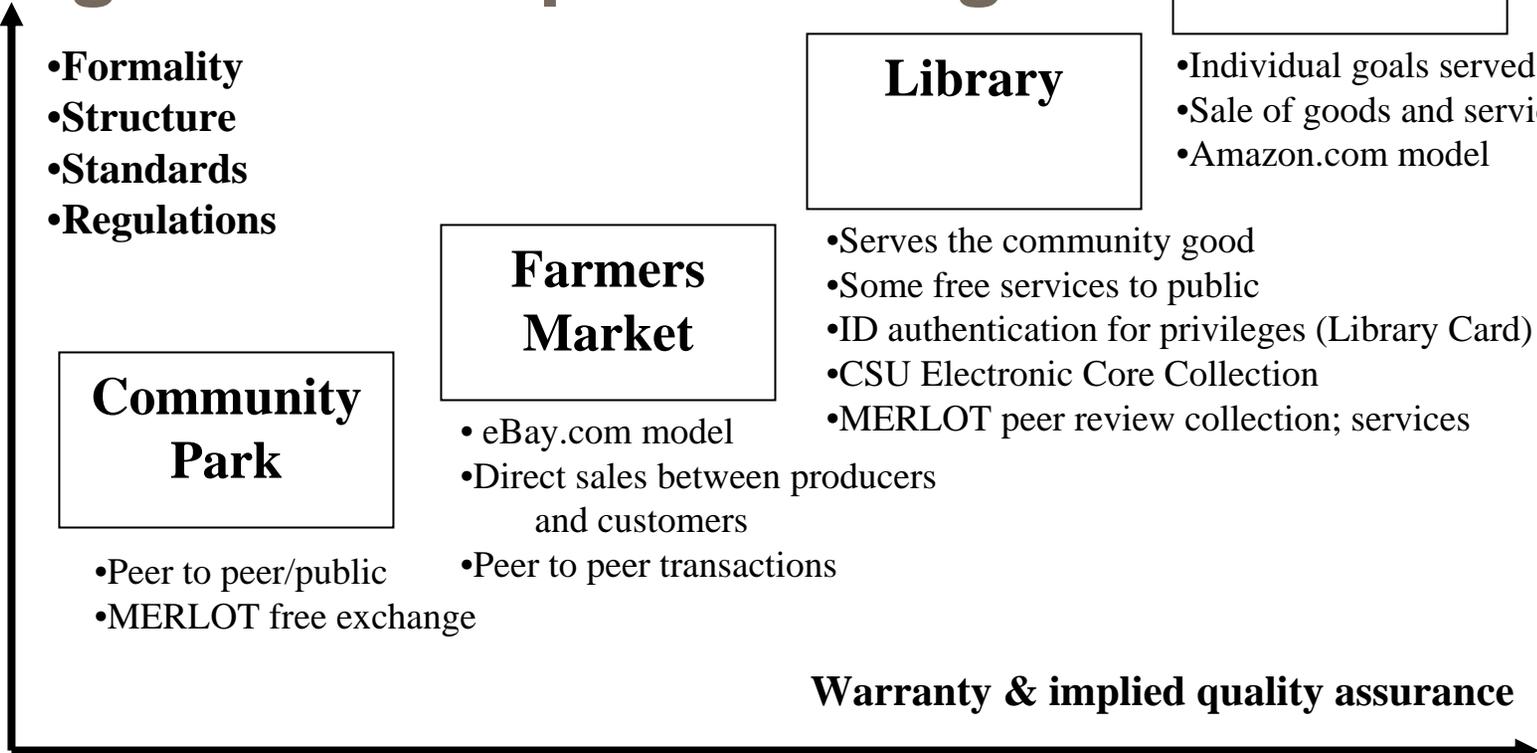
Digital Marketplace

And how do we improve access & affordability
of all the other content faculty and students
need and use

Design Scenario

- Faculty “sampling”, selecting, and customizing instructional resources across all publishers and open resources for students and professional development resources for themselves
- Students acquiring (buying and leasing) of instructional resources (faculty-selected and self-selected) and student development resources in their preferred formats

Digital Marketplace Village



- Formality
- Structure
- Standards
- Regulations

Community Park

- Peer to peer/public
- MERLOT free exchange

Farmers Market

- eBay.com model
- Direct sales between producers and customers
- Peer to peer transactions

Library

- Serves the community good
- Some free services to public
- ID authentication for privileges (Library Card)
- CSU Electronic Core Collection
- MERLOT peer review collection; services

Department Store

- Individual goals served
- Sale of goods and services products
- Amazon.com model

Warranty & implied quality assurance

City Managers & Professional Staff

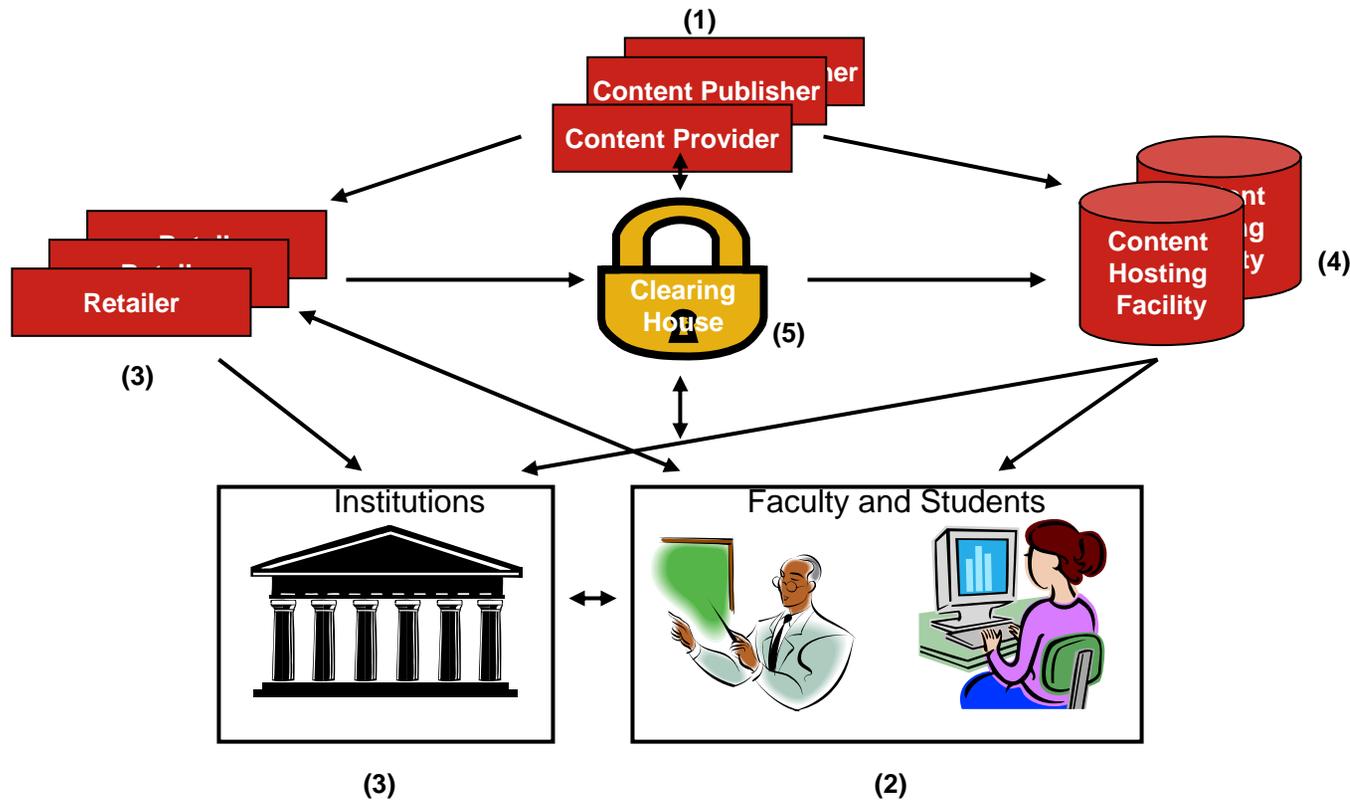
Town Council

Digital Marketplace:

VISION: Establish an electronic exchange and commerce trading presence to share, sell, and distribute academic technology goods, and educational content and services to the CSU and subsequently to other institutions of higher education.

The goal of the Digital Marketplace is to provide the broadest array of digital learning materials and innovative learning practices to the largest number of students and faculty of the California State University system at the most affordable cost.

How the Digital Marketplace will work

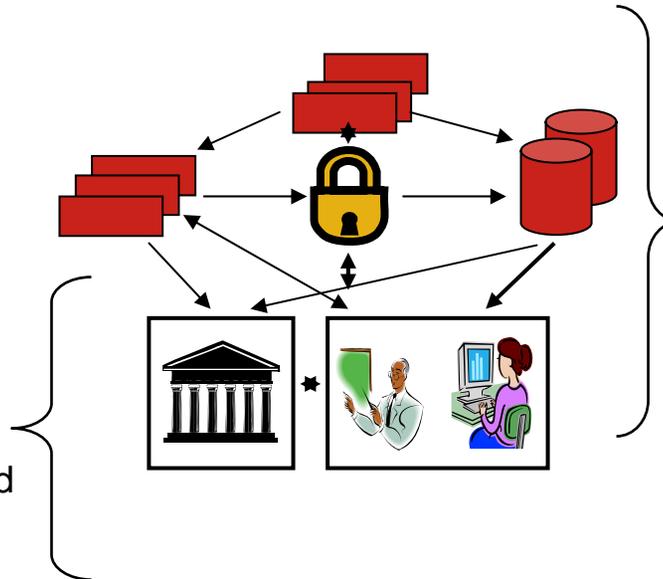


What is the overall design of the Digital Marketplace?

The Digital Marketplace has two distinct components, the delivery network or exchange, and the institution-specific academic support framework

Academic Support Framework

- Driven by information available from the Delivery Network
- Supports multiple relationships between Institution and Student
- Supports understanding relationships between learning and content use
- Unique to each institution



The Delivery Network

- Meets the Design Principles
- Workflows among roles enabled via certified access to common delivery services
- Available to anyone certified to participate in the Digital Marketplace

Developing Partnership

TECHNOLOGY CO's

- *Apple*
- *CISCO*
- *HarvestRoad*
- *Oracle*
- *Sun*
- *Microsoft*

LEARNING MANAGEMENT

- *Angel*
- *Blackboard WebCT*
- *Desire2Learn*
- *Moodle*

HIGHER EDUCATION

- *California Community Colleges*
- *MERLOT Partner Institutions*

PUBLISHERS

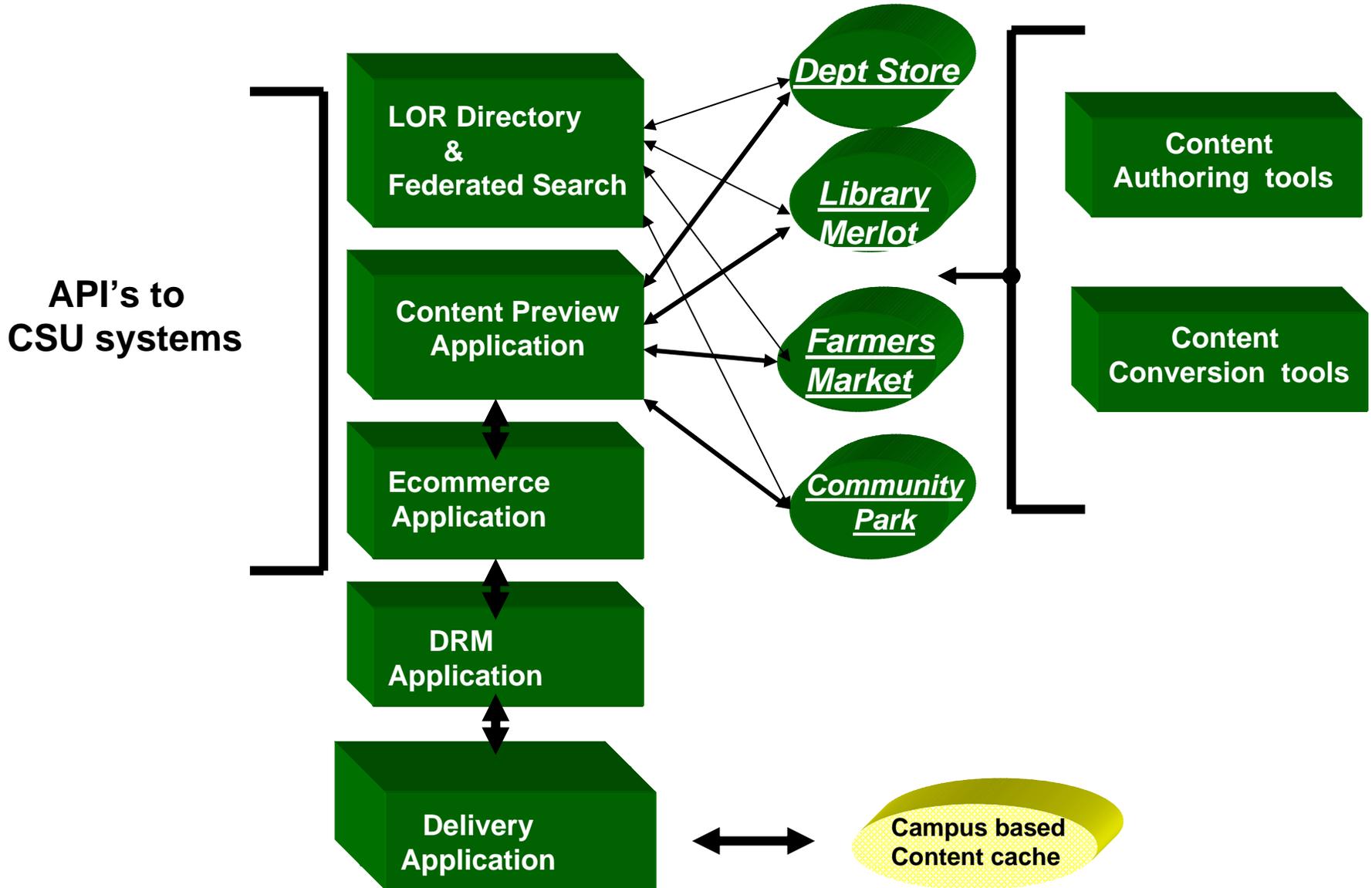
- *Bedford, Freeman, Worth*
- *Giunti*
- *O'Reilly Media*
- *Pearson*
- *Thomson*
- *Houghton Mifflin*
- *Wiley*
- *McGraw Hill*
- *BookShare*
- *Dover*

STANDARDS

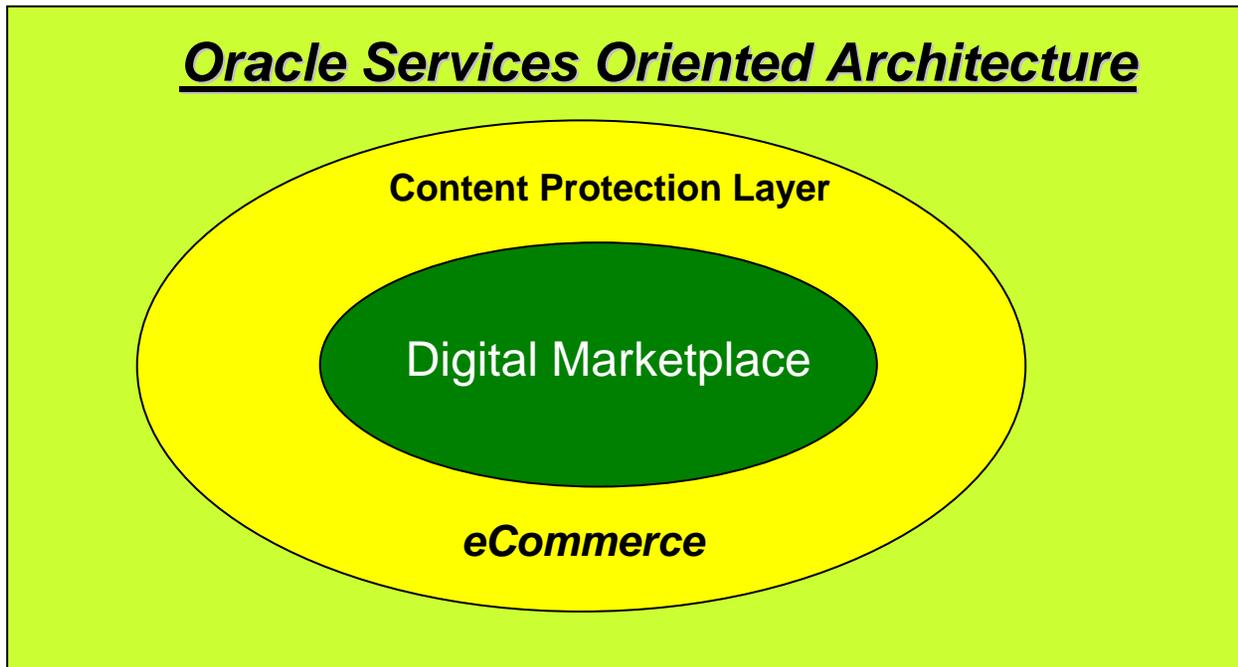
- *IMS Global Learning*
- *O.K.I./MIT*
- *Vitalsource/Ingram*

Master Plan

- **Multi-Phase Rollout**
 - **CSU**
 - **MERLOT consortium**
 - **Rest of World**
- **Design & Testing Phase (January-September 07)**
 - **Resource List/”Sampling” Services**
 - **Technology Architecture**
 - **Developing “e-Behaviors” for use digital resources**
 - **Developing new business models**
- **Demonstration Phase (September, 2007)**
- **Trial Implementation of limited services (January, 2008)**



Digital Marketplace Architecture and Application View



Digital Marketplace will be the first application deployed within the ATS SOA

Summary Part 2

Digital Marketplace design is ready to provide solutions

- Digital Marketplace is a **technology, business, learning infrastructure** service that enables
 - Access to a full range of free to fee-based content in multiple formats at different cost structures
 - SCALEABLE CUSTOMIZATION and PERSONALIZATION of user-centered services
 - New learning and business practices that focus on faculty and student benefits.



Advisory Committee for Student Financial Assistance

MERLOT and the Digital Marketplace: The California State University's Strategies for Providing Affordable "Textbook Content" through Technology Innovations

**Gerard L. Hanley, Ph.D.
Senior Director, Academic Technology Services
Executive Director, MERLOT
California State University System
April 3, 2007**

Introduction

Honorable David Wu, Member, Education and Labor Committee, U.S. House of Representatives, Chairperson. Judith N. Flink, Chairperson, and advisory committee Members, thank you for inviting me to provide input on the congressionally requested study to make college textbooks more affordable. The focus of my testimony will be on the role of the California State University (CSU) and its partners in higher education to use technology has changed the delivery and format of instructional materials and its current projects to provide easy access to quality instructional materials that are free or more affordable than the typical textbook. The CSU thanks the Committee for its attention to this critically important area.

The California State University

The CSU is the largest and most diverse four-year university system in the country, with 23 campuses, approximately 417,000 students and 46,000 faculty and staff. The CSU's mission is to provide high-quality, accessible education to meet the ever-changing needs of the people of California. Since the system's creation in 1961, it has awarded about 2 million degrees. We currently award approximately 84,000 degrees and 13,000 teacher credentials each year.

One key feature of the CSU is its affordability. For 2006-07, the CSU's systemwide fee for full-time undergraduate students is \$2,520. With individual campus fees added, the CSU's total fees average \$3,199, which is the lowest among any of the comparison public institutions nationwide. A consequence is that many of our students are first-generation college-goers.

1. What is MERLOT and why did CSU develop it?

In 1993, the California State University (CSU) began a comprehensive planning process, the Integrated Technology Strategy (ITS), to address how technology was being implemented and supported across the CSU system. The process began with an assessment of the current state followed by a visioning exercise for the future state of technology in the system. The focus was not technology; rather it was what the CSU stood for as an institution and what it wanted to stand for in the future.

The ITS took a comprehensive “systems” approach. Planning was based on the premise that effective use of technology requires individual access to a network connection, hardware, software, and training support. These baseline infrastructure components are necessary to realize the four desired outcomes of the ITS planning process: 1) increase personal productivity, 2) support excellence in learning and teaching, 3) assure the quality of student experience, and 4) increase administration productivity and quality.

Two major challenges facing higher education are discovery and usability of high quality, web-based, interactive learning materials. The promises of digital learning materials actively engaging students and teachers in effective education have been met with faculty experiencing difficulty in finding relevant digital materials; evaluating the quality of their content, potential efficacy in teaching and learning, usability, and stability; integrating the materials into a comprehensive pedagogical context that meets the needs of their students; overcoming the traditional isolation of teaching to seek advice from other faculty about the operation, uses, and assessment of digital materials; and overcoming the additional time and workload demands currently required to integrate technology into their students’ learning.

Since 1997, the CSU developed and provides free access to MERLOT (Multimedia Educational Resource for Learning and Online Teaching, www.merlot.org). MERLOT is a continuously growing collection of cooperatively developed, predominantly free, web-based resource where faculty and students can easily find digital learning materials with evaluations and guidance for their use. Designed primarily for the higher education community, one of the major goals of MERLOT is to enable faculty to effectively and easily choose and use the best learning materials for their students’ learning needs, their own teaching methods, and the learning goals of their academic program.

The MERLOT Collection: MERLOT has over 16,000 online learning materials, such as simulations, animations, tutorials, case studies, digital collections, and more, that faculty can use to design their custom curriculum to meet their students’ learning needs and their course objectives. It is free to search, browse, and find online materials in MERLOT as an anonymous user.

MERLOT has established select editorial boards in 16 discipline areas to conduct peer reviews of the materials contributed to the collection to provide users an important level of quality assurance. MERLOT also provides more community

level means for evaluation of the quality and utility of the materials through its Member Comments, Assignments, and Personal Collections services.

The MERLOT Member Community: The MERLOT collection of online materials, as well as member evaluations and comments, student learning assignments, personal collections, and teaching cases are all contributed by the voluntary work of individual faculty, students, staff, librarians, administrators, and other members of a worldwide MERLOT community. MERLOT has over 44,000 registered members, growing at over 1,100 per month. 56% of the members are faculty, 27% of the members are students, 11% of the members are staff, and 6% are librarians, administrators and others. Of the 44,000 members, over 7,500 have contributed to the MERLOT collection.

2. How have students, professors and institutions responded to MERLOT?

Overall, the MERLOT collection, membership, and usage have been growing exponentially. We currently have approximately 60,000 visits to the website per month, an increase of about 10,000 more visits per month as compared to last year. Without the students and professors participating in the building of the collections, peer reviews, designing of learning assignments, and sharing of personal collections, MERLOT would not be growing. As will be presented in section 3, the sustainability of MERLOT is based on higher education institutions, professional societies, other digital libraries, and industry cooperatively and financially sustaining MERLOT.

Here are a few testimonials from MERLOT members:

Testimonials about MERLOT by Administrators

“MERLOT has been an excellent faculty development initiative for a state system, since it promotes collaboration and efficiency. It is a unique organization, approaching **common issues and challenges in ways no others do**. MERLOT **extends our reach** and resources by partnering with other systems, organizations, and agencies. I don't think we could accomplish nearly as much if we tried to do these things by ourselves.”

*Phillip K. "Phil" Moss
Assistant Vice Chancellor
Oklahoma State Regents for Higher
Education*

“Our System values MERLOT, because it provides a painless way to engage faculty in teaching and learning with technology. MERLOT helps **faculty gain recognition** for digital scholarship. MERLOT is a great **community-building process**—of international proportions. And MERLOT is a **faculty development dream**—a project that engages the learner in all of us (including the administrator who still remembers the joys of the classroom).”

Jessica Somers

*Executive Director, Academic Innovation
University System of Georgia Board of
Regents*

“This is really a **fantastic resource for educators and students**. Devoting my time to this is simply an extension of my beliefs in the importance of higher education and the benefits of technology to that endeavor.”

*James A. Schmidt
Assistant Dean, Arts & Sciences
Western Illinois University*

Testimonials about MERLOT by Faculty

“MERLOT is **transforming the face of higher education** as we know it. Being a part of this project is stimulating and worth every bit of the time and effort. We are building a **first class digital library** and a **strong community of practice** at the same time. MERLOT puts the focus on **teaching and learning**.”

*Laura Franklin
Professor of Humanities & Social
Sciences
Northern Virginia Community College*

“Being a MERLOT Editorial Board member has **stimulated my professional growth** as an educator since I have had to stretch my thinking and studies on learning impact. The time and effort I contribute to MERLOT is well worth the effort. I look forward to meetings where I can mingle with **creative thinkers** who treat every suggestion with respect.”

*Nancy Konigsberg Kerner
Lecturer in Chemistry
University of Michigan*

“One of the best things I appreciate about MERLOT is that is a **collaboration** of “like minds.” The organization continues **to grow and develop at a global level**, but this growth and development is driven and designed from within. When those invested in the effort, everyday members and editorial board members, have this ownership then the organization will have a long, happy, adventurous life.”

*Cris Guenter
Professor of Education
California State University, Chico*

“There is a certain **prestige**, like being on an editorial board for a journal, in being a MERLOT Editorial Board member.”

*Peter Sheldon
Associate Professor, Physics and
Astronomy*

Randolph-Macon Woman's College

“It does take a **commitment** to participate in MERLOT, but the resources, the connections with other educators, especially those on the Board, are **well worth the time and energy**. I can be a **better educator** because of the connections with my colleagues.”

*Jane Moore
Assistant Professor, Curriculum and
Instruction
National-Louis University*

“Being a member of one of the original MERLOT Editorial Boards provided me with opportunities to **develop my leadership capacity** and skills in the area of integrating and using instructional technology for teaching and learning. I especially enjoy being able to suggest high-quality learning objects to my colleagues.”

*Barbara Levin
Associate Professor of Curriculum and
Instruction
University of North Carolina at
Greensboro*

“I have great opportunities to share outstanding teaching-learning modules with colleagues, to be kept informed of new and innovative online materials, and to have a sense of community within my own discipline. It is always a **gratifying experience** to receive e-mail messages from users from different parts of the globe expressing their **appreciation for sharing** my online materials and helping them learn in an interactive, user-friendly environment.”

*Kylie Hsu
Associate Professor Modern Languages &
Literatures
California State University, Los Angeles*

Finally, Sun Microsystems and MERLOT produced a video telling a story about how MERLOT has enable students and teachers of music to be more successful by using the free materials in MERLOT. <https://admin.acrobat.com/a48491121/p46749821/>

3. How do you ensure the sustainability of MERLOT

MERLOT is an international cooperative among academic institutions, professional organizations, and individual people who strive to enrich teaching and learning experiences. The MERLOT project is a partnership of state systems and institutions of higher education (<http://taste.merlot.org/institutional.html>). State system partners pay \$25,000 per year and significant in-kind contributions to support faculty and staff collaborations. Individual campus partners pay \$6,500 per year. The California State University (CSU) continues its leadership of and responsibilities for

the management, planning, and operation of MERLOT's processes and tools. The CSU has also received federal grants (e.g. NSF and FIPSE) to provide some marginal increases in financial support (see <http://taste.merlot.org/grants.html> and http://elixr.merlot.org/wiki/fipse_elixr/). MERLOT also has partners with professional societies, such as the American Association of Physics Teachers, or Association for Theatre in Higher Education, and other digital libraries, such as EdNA online (Australia), ComPadre (Physics), Professional Development Portal (University of North Carolina), and IEEE Computer Society. With these partners, MERLOT collaboratively designs and delivers new mutually beneficial services, such as building and sharing collections. Finally, MERLOT also has partnerships with corporations in technology and publishing. For example, Sun Microsystems has provided both funding and significant marketing services. Sun Microsystems produced an online video for *Sun News Today* which has a worldwide distribution (see above). In summary, the combination of CSU's sustaining management and the partners' contributions and participation has enabled MERLOT to sustain itself for 10 years.

The value proposition for higher educations is:

- **Improve Quality Assurance** of online materials and pedagogy.
 - MERLOT provides discipline-based, peer reviews of online materials with guidance on teaching with academic technology.
- **Enable Fairness** in supporting academic technology across disciplines and faculty at different states of professional development.
 - MERLOT provides resources that can be integrated into the cultures of new, mid-career, and veteran faculty across many disciplines.
 - MERLOT serves faculty from the technically advanced to novice.
 - MERLOT serves the needs of both full-time and adjunct faculty.
 - MERLOT provides high-quality professional development training.
- **Increase Speed** of development and use of academic technology.
 - MERLOT provides the technical, organizational, and programmatic infrastructure that support rapid growth in the quantity of reusable online curricula that are easily found and incorporated into faculty designed courses.
- **Reduce Costs** of developing and integrating technologies into academic programs.
 - MERLOT enables the costs for assigned time, training, technical support and management of complex academic technology services to be shared.

4. What is the CSU Digital Marketplace initiative?

In July 2003, the CSU published "Expanding Academic Technology in the CSU, The Report of the Academic Technology Planning Committee"
http://its.calstate.edu/academic_technology/ATPC_Report_FINAL_07162003.pdf

This report identifies eight (8) strategic projects along with the broader vision and planning principles to guide the CSU's implementation. Four (4) of those projects have been identified as first priorities as they will address CSU's critical needs and will enable the success of the other strategic project. The Digital Marketplace is one of those four first-priority projects. The Digital Marketplace goal is to leverage the size of the CSU system to reduce the cost of acquiring hardware, software, and academic technology services for academic programs through accessible administrative services that enable individuals and organizations of faculty, staff, and students to (a) identify and describe their academic technology needs, (b) find and procure academic technology solutions cost effectively, and (c) deliver academic technology solutions easily, efficiently, reliably, and accessibly.

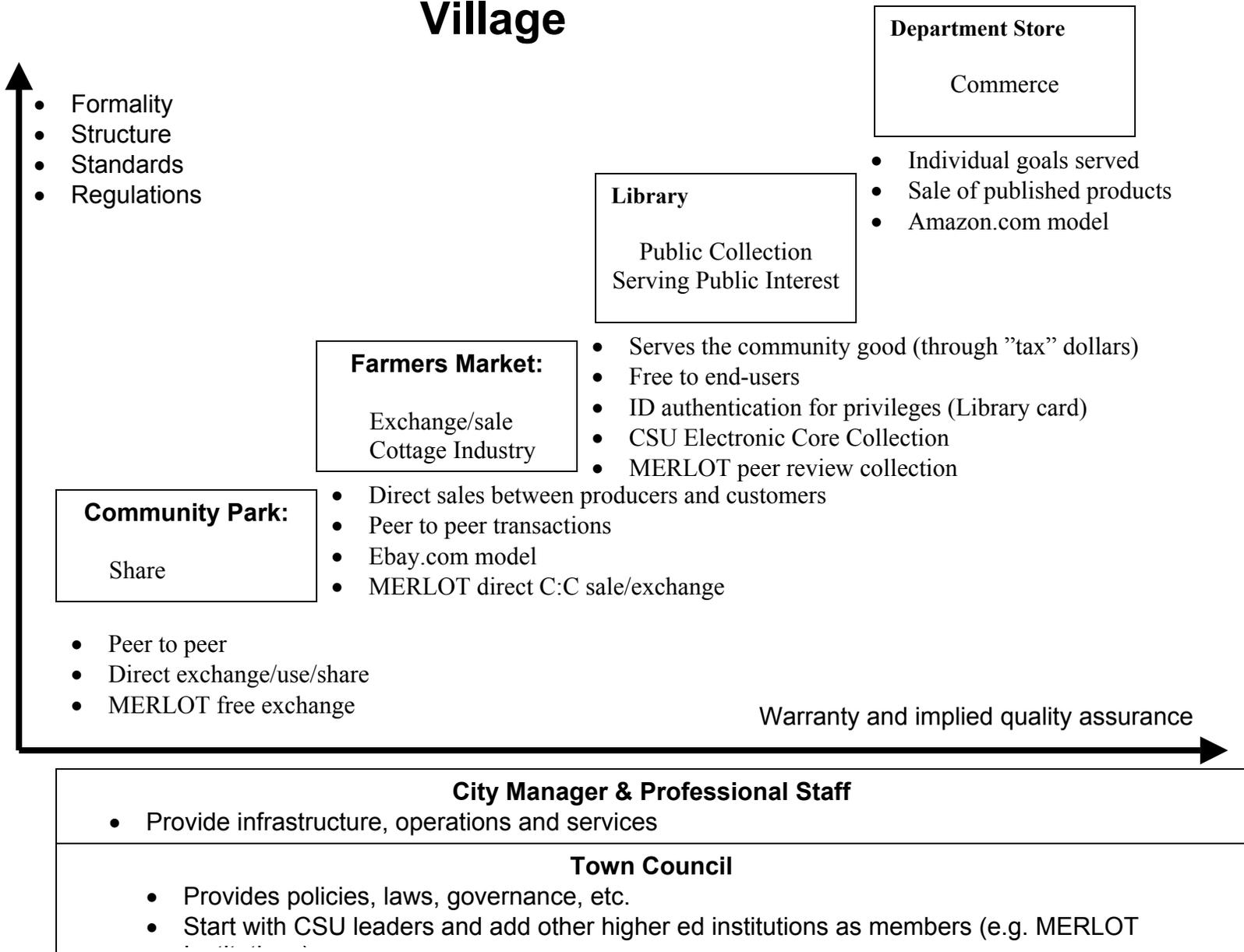
To implement the Digital Marketplace initiative, the CSU is working on another of the first 4 priorities, the eLearning Framework initiative, in parallel. This initiative would plan, develop, and implement an accessible CSU e-learning architecture or "e-learning framework" design. This framework is a conceptual model that would describe the kinds of hardware, software, and middleware technologies and specifications necessary to establish a fully integrated and interoperable system. This system would collect, store, access, and distribute collections of multimedia, digital academic content, and services ranging from instructional materials and resources to complete course modules and/ or complete courses to library learning materials for the CSU.

Figure 1 provides a graphic representation of the full set of services that the Digital Marketplace would provide to the faculty and students. The key features of the Digital Marketplace are the 4 "forums" for exchange. Using an analogy of a village, the Digital Marketplace would have:

- 1) The Community Park for the free and relatively unfettered exchange of information
- 2) The Farmers Market for the free and fee based exchange of information produced by individuals and the "cottage industry within education"
- 3) The Library for free to authorized end-users service that is paid for by the community and provides a common good for the community
- 4) The Department Store for the sale of goods that serves the individual needs and are predominately paid for by individuals (e.g. students).

Figure 1 also provides samples of how some of these services are being partially provided currently. The current capabilities can be leveraged for the Digital Marketplace and a major outcome of the Digital Marketplace initiative is to transform an uncoordinated and insufficient set of services into a high usable, integrated, one-stop "shopping" service.

The Digital Marketplace Village



The Digital Marketplace will enable:

- Faculty to build portfolios of digital content to be purchased by students in their courses.
- Students to purchase and manage digital content produced by multiple publishers through a unified e-commerce service.
- Publishers to securely distribute their digital content to students
- Publishers to implement a variety of business models.

The Digital Marketplace is will be serving 5 business imperatives of the CSU. These imperatives are also representative of the needs many higher education institutions.

1. **Accessibility of academic content:** Instructional and student services content (e.g. academic content formatted in books, journals, guidebooks, websites, multimedia learning objects,) must be in an information format that effectively, efficiently, scaleably, sustainably, and affordably enables renderings that can be used by students and faculty with disabilities in compliance with federal and state laws and CSU executive orders. This content is currently purchased by students and/or the CSU and does not comply with accessibility requirements. Currently the CSU has significant and growing litigation risks.

CSU NEED: Both students and faculty need a simple, user-friendly services to search, find, and acquire academic content across publishers and open resource services that provides content renderings which comply with accessibility requirements.

2. **Affordability of academic content:** The student and legislative demands to reduce the costs of academic content is a significant and growing demand and priority for the CSU. High costs of textbooks result in reduced access to a CSU education (students can't afford the total cost of education) and it reduces the quality and success of their education (students don't buy the required textbooks, don't learn the materials, and don't perform to their capabilities). The reduced access and quality of a CSU education costs the CSU significant funds by interfering with a student's ability to graduate in a timely and successful manner.

CSU NEED: Both students and faculty need a simple, user-friendly services to search, find, and acquire academic content across publishers and open resource services that provides more affordable and valued options.

3. **Choice of academic content:** A students' educational success is dependent upon many complex factors. One significant class of factors that effects instructional and learning success is the quality and compatibility of the learning content to the learning needs of the students.

Current practices significantly restrict faculty choice of academic content for teaching their courses and student choice of academic content for learning. The growing availability of multimedia tutorials that include individualized assessment of student learning needs (e.g. ALEKS) are not easily found, reviewed, and selected through the current textbook selection process.

CSU NEED: Both students and faculty need simple, user-friendly services to search, find, and acquire academic content across publishers and open resource services to meet their individual teaching and learning needs.

- 4. Digital delivery of academic content:** To serve the educational needs of Californians, the CSU is initiating a program to expand its online degree programs. The online nature of CSU degree programs will provide significantly greater access to the working professionals in California. Our professional doctoral programs and masters degree programs are ones that will particularly require online delivery. Currently, the CSU (or other higher ed institutions) does not have an effective, efficient, scaleable, sustainable, affordable, and secure means to deliver publisher content in digital/online formats to its students. Books, coursepacks, manuals, and other academic content are still frequently sold to students through local bookstores, requiring online students to become on-campus students for some and sometimes deal-breaking time.

CSU NEED: Both students and faculty need simple, user-friendly services to search, find, and acquire digital academic content across publishers and open resource services to meet their individual teaching and learning needs.

- 5. Leveraging teaching expertise and instructional practices to improve academic effectiveness and efficiencies.** The expert selection of academic content in the design of effective course curriculum occurs pervasively in the CSU but is not efficient and as reliable as it could be. There are a variety of circumstances where the faculty assigned to teach a course have not been provided the time or the support to select the high quality academic content and organize the content into effective course curriculum. Newly hired tenure track or adjunct faculty given a new teaching assignment two weeks before the semester starts would greatly benefit from a library of academic content already in use by their colleagues. Each semester, students are challenged to learn skills and concepts which might be better enabled by some academic resources beyond those assigned by the faculty. There is not effective, efficient, scaleable, or sustainable mechanism for students to share what enables their learning.

CSU NEED: Both students and faculty need a simple, user-friendly services to search, find, and acquire academic content and expert advice across publishers, faculty, students, and open education services that enable them to effectively and efficiently learn from the experiences and expertise of others in teaching and learning.

5. How do the Digital Marketplace services provided and the collaboration required differ from MERLOT?

To engage other higher education institutions and publishers in this project, the CSU will leverage its MERLOT (Multimedia Educational Resources in Learning and Online Teaching) project to manage the participation of publishers and higher education institutions. The success of MERLOT in the creation of a quality digital content library, the consortium of MERLOT educational institutions and the relationships MERLOT has established with publishers are all key elements that can be integrated into the Digital Marketplace initiative. MERLOT, led by the CSU, will invite publishers to collaborate on the design and development of the Digital Marketplace Department Store model. After the initial successful testing of the Digital Marketplace system on CSU campuses, CSU will lead the MERLOT consortium to participate as well.

The Digital Marketplace services will involve higher education, technology companies, and publishing companies collaborating in new ways. The Digital Marketplace will require collaboration in:

1. Teaching-learning services which improve faculty and student success and satisfaction.
2. Technology services which are an integration of open standards-based applications delivering a customizable enterprise service.
3. Marketplace services which will make the digital marketplace services well known and well used by providing highly valued products and services.
4. Business services which enable all stakeholders to close their business.

Recent technology innovations have become leading practices which significantly reduce operational overhead for developing and maintaining the services and significantly improve quality, customizability and effectiveness of the services. The Digital Marketplace program is being built on these advances which include:

- Service Oriented Architecture (SOA) and community web services
- Open Services Interface Definitions (OSIDs) which becomes a universal translator between software applications

The CSU is currently managing an alliance of the following corporations in the development of the Digital Marketplace:

- Technology companies:
 - Oracle

- CISCO
- Sun
- IBM
- Microsoft
- HarvestRoad
- Apple
- Blackboard/WebCT
- Desire2Learn
- Angel
- Moodle
- Publishing Companies
 - Pearson
 - Thomson
 - McGraw Hill
 - Bedford Freeman Worth
 - Guinti
 - O'Reilly Media
 - Wiley
 - Houghton-Mifflin
 - Bookshare
 - Dover
 - Ingram/Vital Source

6. What role do you foresee MERLOT and Digital Marketplace playing in the future?

The Digital Marketplace is being designed with the needs of faculty and students focusing our efforts. The following narrative will describe how faculty and students will be able to fulfill their teaching and learning needs through the Digital Marketplace services.

FACULTY ROLE

DISCOVERY:

Professor Plum logs into his LMS during the summer to begin to build the collection of resources he will want his students to use in the Biology 101 course he's teaching in the fall. It's been 5 years since he taught the introductory level course so he's interested in reviewing what's available in the field. Within the LMS website, he goes to the page for building his resource list and clicks on "Search for Resources". He types in a key concept he'll be covering in the course and a hit list of materials from 6 different publishers is generated along with free materials from MERLOT. The descriptions of the materials includes title, author, abstract, publisher collateral, type of resource (book, article, multimedia, etc), indication of its ability to be rendered in an accessible (section 508 compliant) format, and the different delivery formats and prices (hard copy text book, custom book, e-Book to own, e-Book to rent).

While looking for instructional content, Professor Plum also examines some of the professional development resources he can use help him prepare to teach successfully. He finds a number of handbooks on teaching the net-generation and he selects one for his summer reading, which CSULB gets a discount because of a bulk purchase.

PREVIEW:

Professor Plum selects 10 different recourses to review in more detail. He clicks on the PREVIEW button and a window pops ups indicating that since he is a faculty in good standing at CSULB, he will have full electronic access to the e-Book for a 72-hour period, starting whenever he wishes. After previewing 10 materials, he selects 5 for his course, a textbook, and a chapter from another book, a tutorial on using EXCEL, and 2 multimedia simulations. He also gets to preview the net-generation handbook as well.

SELECTION:

Profession Plum saves his selections of materials for his students and writes notes (annotations) about the resources he's selected to use. He notices that the book, chapter, and tutorial can be rendered in an accessible format but the 2 multimedia simulations are only 80% accessible. Professor Plum contacts the campus Center for Students with Disabilities to learn what he needs to do to provide alternative curriculum to the visually impaired student he'll have in his class. Finally Professor Plum examines the "student view " of the resource list and sees that the textbook is offered in an e-Book-to-own version for 50% of the hard copy text and the e-Book-to-rent is only \$15.99 for the semester. With all these options for access to the materials, he's hoping all his students will use the materials.

BUY:

Professor Plum puts the net-gen book in his shopping cart and buys it with his credit card

STUDENT ROLE

BUYING INSTRUCTIONAL RESOURCES:

When Jane Student gets access to the LMS for her Biology 101 course, she navigates to the Resource List to check out what she'll need to buy. As a student with a vision disability, she has had a challenge of getting the materials in a format she can use in a timely manner. She reviews the resource list and sees that the textbook and tutorial are in an accessible format and is pleased. She then reviews the different types of style sheets CSULB has certified has rendering the content in an accessible manner. She likes the choices and decides on the size, contrast, colors, and layout that suit her needs. Jane is considering becoming biology major so she decides to put the e-Book-to-buy in

her shopping cart and the tutorial in her shopping cart. She buys the resources online with her credit card and stores the resources in her campus ePortfolio. For the two multimedia resources, there's a note for her stating that the CSULB Center for Students with Disabilities will provide an aid to work with Jane on the portions of these resource that are not accessible to her.

In the 4th week of the semester, Jane realizes she's having trouble with one of the key concepts in biology. She goes to the Digital Marketplace in her LMS and searches for additional materials that might do a better job in helping her learn the concept. She finds a student workbook that has the background information she needs and it can be rendered in the accessible format she prefers. Jane buys it online.

BUYING STUDENT DEVELOPMENT RESOURCES:

While Jane was looking for her course materials, she saw that the resource list also include a collection of online materials that could help her learn more about the different jobs you can get with a biology degree, expected salaries, and different types of professional opportunities. She also sees that the State of California provides forgivable student loans for students who go into teaching in California schools. Being a CSULB student, she can preview the career development material for 3 hours. Jane likes to book and adds it to her shopping cart. She also sees an e-handbook on how to succeed in college without going broke. She also puts this in her shopping cart and buys the materials with her credit card.

Conclusion

The CSU and its MERLOT partners are committed to designing and delivering new effective and affordable ways for students and faculty to achieve their educational outcomes through digital content and associated digital content management services. The new technologies, business practices, and educational practices are ready to produce new models and better services for faculty, students, education institutions, technology companies, and publishers. All parties are recognizing the current opportunity for new, sustainable "business" practices that benefit all. Communication and collaboration across business sectors will be one of the keys to delivering the benefits to all. We believe CSU's leadership is essential to define the "demand requirements" of these new practices to ensure our students' and faculty have access to excellence in education.

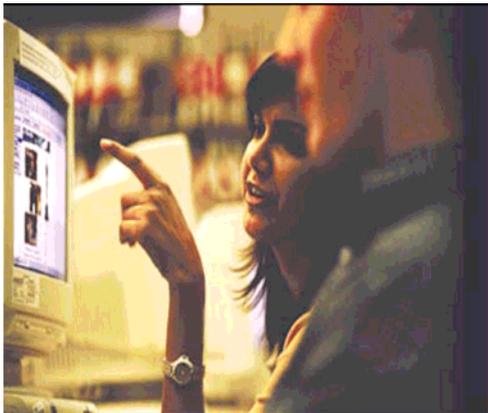
We thank you for your interest in the efforts of the CSU to meet this need. I will be pleased to answer any questions you might have, and we look forward to working with you in this critical area in the future.

Have You Discovered MERLOT?

MERLOT (www.merlot.org) is a free, web-based resource designed to help you find online teaching and learning materials quickly and easily. It is a continually growing catalog of online teaching tools and support resources that help you enhance your instruction. MERLOT is also a community of people like you, who strive to enrich the teaching and learning experience.

Learning materials can be found in:

- Arts
- Business
- Education
- Humanities
- Mathematics
- Science and Technology
- Social Sciences



MERLOT Can Help You ...

- Find the right online materials and advice faster with our improved browsing and with more peer reviews than before.
- Find experts and peers in the online teaching community through our expanded member services.
- Personalize MERLOT services so you get the resources and communications you want.
- Share your expertise easily, and build relationships with peers who value your expertise.
- Participate in building a free and open educational community for the world.
- Receive recognition for your contributions to the MERLOT community.

FIND Materials By ...

- Searching the MERLOT collection and other digital libraries to find specific peer reviewed materials for your classroom.
- Browsing the collection to see what is available in your discipline.
- Looking for specific types of modules from our collection of:
 - Animations
 - Case Studies
 - Collections
 - Drill and Practice Exercises
 - Learning Object Repositories
 - Lectures/ Presentations
 - Podcasts
 - Quizzes/Tests
 - Reference Materials
 - Simulations
 - Tutorials



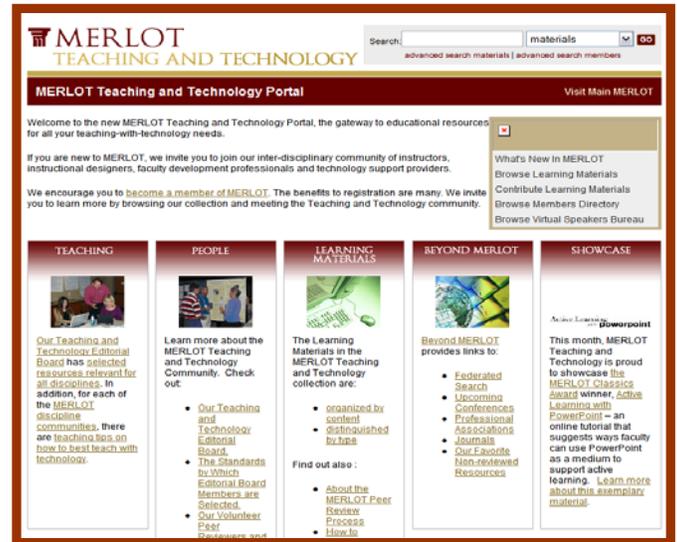
"My association with MERLOT has proven to be a delightful adventure with 'like minds.' Academically, I have gained a national network of colleagues with whom I interact on a regular basis."

- Cris Guenter, Professor, California State University - Chico

"I have great opportunities to share outstanding teaching-learning modules with colleagues, to be kept informed of new and innovative online materials, and to have a sense of community within my own discipline."
— Kylie Hsu, Associate Professor, CSU Los Angeles

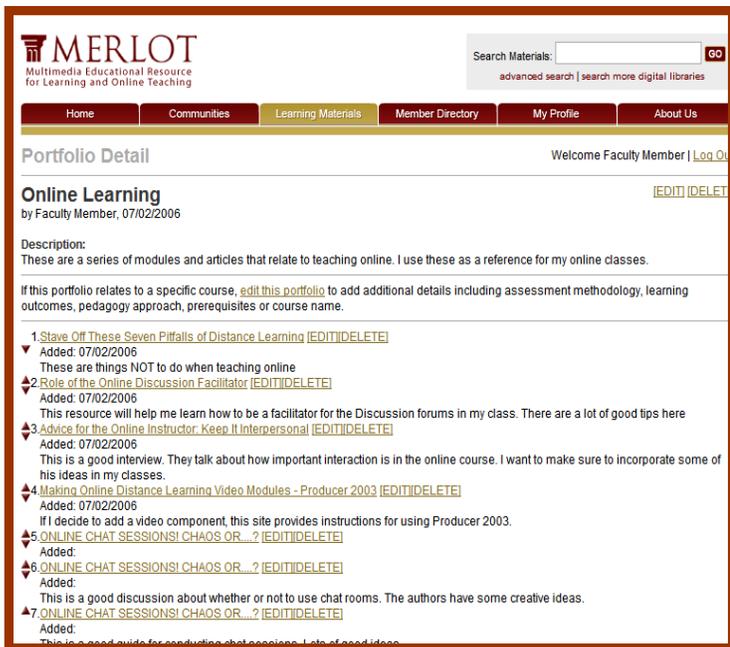
PERSONALIZE your MERLOT Experience

- Customize your own Personal Profile.
- Contribute your own course materials and share them with others.
- Create a Personal Portfolio of your most frequently used MERLOT materials.
- Use your Personal Portfolio for annual review, promotion, tenure, and job searches.
- Create an RSS feed on your webpage for materials you request.
- Make use of the MERLOT community portals to find more discipline-specific resources.



PARTICIPATE in MERLOT

- Contribute online learning assignments for use with MERLOT materials.
- Submit Member Comments and assignments about materials.
- Become a Peer Reviewer for one of our 15 Discipline Editorial Boards.
- Participate in the Virtual Speakers Bureau by sharing your expertise with others, or inviting a speaker to your own class.
- Connect with colleagues by searching the Member Directory.
- Contribute an article to MERLOT's, *Journal of Online Learning and Teaching (JOLT)* <http://www.jolt.merlot.org/>
- Come to the MERLOT International Conference to meet others who share your teaching values <http://conference.merlot.org/>



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- Click on the Learning Materials tab at the top of the page.
- To view more specific materials within a given discipline, click a topic link on the left side of the page.
- Materials in that topic area will be presented.
- Materials are displayed with those receiving the highest overall rating appearing first. Click on a material title to be taken to its detail view.