



# Update on the IMS Global Learning Consortium:

## Standards for Development & Adoption of Technology-Enhanced Learning

Rob Abel, Ed.D.

Chief Executive Officer

IMS Global Learning Consortium (IMS GLC)

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



# Our Mission & Vision

*The IMS Global Learning Consortium  
creates standards  
for the development and adoption  
of technologies  
that enable high-quality, accessible, and  
affordable learning experiences.*

\*IMS once stood for "Instructional Management System," the product category that now includes Learning Management Systems, Course Management Systems, Virtual Learning Environments, and Instructional Management Systems

# Supporting Industry Advancement

- 130+ organizational members & subscribers
- 47% headquartered outside the U.S.
- the who's who of global learning tech leadership
- Actively encourages engagement, adoption, maintenance, evolution, and conformance





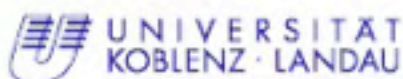
# Three Tiers of Participation

- Contributing Members (voting & workgroup leaders)
  - <http://www.imsglobal.org/members.html>
- Subscribers (early adopters across variety of work)
  - <http://www.imsglobal.org/subscribers.html>
- Common Cartridge Alliance (collaboration to bring Common Cartridge standards and products to market)
  - <http://www.imsglobal.org/subscribers.html>



# The Center for Open Sustainable Learning

SURF



## Higher Education Research Leaders





# Higher Education Online Leaders



**COPPIN STATE UNIVERSITY**

 **Miami Dade  
College**

**SPC** St. Petersburg College

# Higher Education Teaching & Learning Leaders



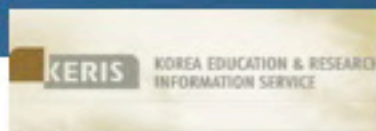
 University of North Carolina  
**WILMINGTON**

 **Artevelde**  
hogeschool

*Lake Superior*  
COLLEGE

**PIERCE COLLEGE**   
*possibilities. realized.*

**UVU** **UTAH VALLEY  
UNIVERSITY**



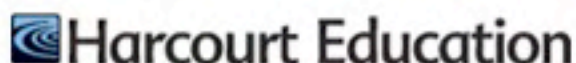
Australian Government  
Department of Education, Employment  
and Workplace Relations



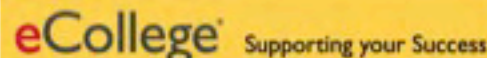
Plano Independent School District

Ucompass.com, Inc.

# K-12 Schools Leaders



Open Learning Exchange  
Universal Basic Education 2015





Ucompass.com, Inc.



# Learning Software and Systems





CAMBRIDGE ASSESSMENT



# Publishing, Assessment, and Repository



GIUNTI  
labs  
The Learning Company



Open Learning Exchange  
Universal Basic Education 2015



National Association  
of College Stores

CONNECT | GROW | SUCCEED



WILEY

agilix®

 TEGRITY

 **Wimba**  
people teach people

# Rich Media and Collaborative Learning

 Carl and Ruth Shapiro Family  
**NCAM**  
National Center for Accessible Media

 **CommonNeed™**  
Rewriting the rules of software development



 **LEARNING OBJECTS**



**Microsoft**

**ORACLE**

**SUNGARD** HIGHER EDUCATION

**credu** Your Best e-HR Partner

**UNICON**

**CAMPUS**  
MANAGEMENT

**SMARTHINKING**

**JENZABAR**

# Enterprise Software, Systems, and Services

**IBM**

**Informs**

**eCollege** Supporting your Success

**embanet**

**COMPASS**  
KNOWLEDGE GROUP

**ESM**  
Education Sector Movement

**CAMS**  
THREERIVERS  
SYSTEMS

**SK C&C**

**DUNET**



Australian Government  
Department of Education, Employment  
and Workplace Relations

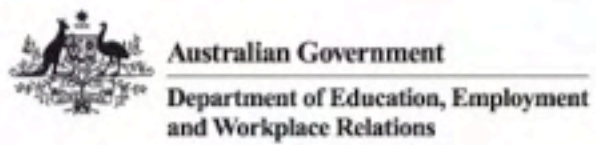


# Global Government Organizations & Associations



CONNECT | GROW | SUCCEED

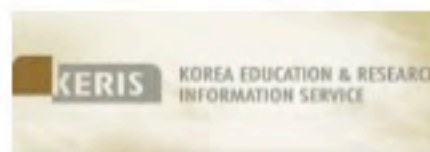
[Http://www.iii.org.tw](http://www.iii.org.tw)



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4CSoft  
www.4csoft.com



credu Your Best e-HR Partner

DUNET

IMS Korea

Yekville  
e-Learning Power 테크빌닷컴(주)



SK C&C

DAUL soft  
All about e-Learning



# For Institutional IT & Learning Tech Leaders

# What is Your *Technology Strategy for Learning*?

- How do you measure the return on investment made in technology used to support and enhance learning?
- What are some of the key opportunities with respect to learning that you are counting on technology to help you address or challenges resulting from the use of new technologies to support learning?

*“It is difficult to determine the return on investment in learning technology - not because of the usefulness of the technology but rather because of our lack of understanding of what it means to improve learning.”*



John V. Lombardi  
President, LSU System  
from IMS Learning Impact '08

What does it mean to say  
that your institution is a  
leader in teaching and  
learning?

*How do you prove it?*

# What is the *Learning Impact* of the Technology-Empowered Education You Deliver?

# One Approach: Learning Impact Evaluation Framework

- Access
- Affordability (cost per unit)
- Quality
- Adoption (for established programs)
- Accountability
- Organizational Learning
- Interoperability
- Innovation (for research & new projects)



<http://www.imsglobal.org/learningimpact/index.html>

# Learning Impact and Summit on Global Learning Challenges

Annual Conference: 2009: May 11-15, Barcelona  
<http://www.imsglobal.org/learningimpact2009/agenda.html>



11-14 May 2009  
Barcelona - Spain

## Learning Impact 2009

IMS Global Learning Consortium's Learning Impact 2009 Conference and Summit on Global Learning Industry Challenges is taking place in Barcelona, Spain, 11-14 May 2009. Check out the agenda and learn why the world's leaders of learning gather for the best conference on academic, educational, and learning technology.

Presentations and discussions cover the latest in learning systems, tools, digital content, personalization, accessibility, and inclusive design in the higher education, K-12 schools, and corporate education segments. The summit on Global Learning Industry Challenges features keynote and executive panel sessions examining strategic industry challenges with a global perspective.

Hosted by the Universitat Oberta de Catalunya (Open University of Catalonia, UOC), Learning Impact 2009 is pleased to hold the conference in one of Europe's most beautiful and historic cities. Situated along the Mediterranean Sea, Barcelona makes a stunning setting and destination.

We're not too early to register now, visit: <http://www.imsglobal.org/learningimpact2009-agenda.html>



The Summit on Global Learning Industry Challenges

### The Recognition and Awards Program:

The Learning Impact awards (LIA) are designed to recognize the most impactful use of technology worldwide in support of learning. This unique program evaluates established, new, and research efforts in context at all implementing learning institutions. Finalists are selected to showcase at the annual Learning Impact conference and a panel of global experts are asked to perform the final rankings during the conference. For more information and to enter, visit: <http://www.imsglobal.org/learningimpact2009-awards.html>

### Who attends Learning Impact?

- Learning Impact is a gathering of key strategists and decision makers from the organizations that are determining the future of technology in learning and education.
- 176 Academic Technologists/Academic Administrators
- 146 Architects, Engineers, CTOs, CEOs
- 124 CEOs, Presidents/Vice Presidents
- 108 Directors and managers of instructional/academic technology
- 146 Program or Project managers

**International**  
This exclusive global conference brings about 300 people from over 17 countries together to focus on the latest trends Learning, Technology & Standards.

**Leadership Indicators**  
A thorough evaluation and annual report detailing past conference findings is produced and freely available at: <http://www.imsglobal.org/learningimpact2009-10000topexecutive>

The conference provides attendees with the latest information on innovation in learning, the ability to network with numerous influential leaders in the industry, knowledge about the cutting edge advances in the industry and workshops on learning topics.

Support from governmental organizations and industry makes this conference a success. We appreciate your sponsorship to continue this valuable work.

For information about sponsoring Learning Impact 2009, please contact Lisa Mathews [lmathews@imsglobal.org](mailto:lmathews@imsglobal.org)

### Learning Impact 2009 Keynote Addresses:



**Dr. Malcolm Reed, Executive Secretary, Joint Information Systems Committee, United Kingdom**  
 Dr. Malcolm Reed graduated in 1973 with a degree in Environmental Science from the University of East Anglia and went on to do a PhD at the University of Manchester on the hydrogeology of a glacial catchment. He then worked in the Overseas Development Administration before moving to the Natural Environment Research Council (NERC) in 1978, where he ran the computer department at the Institute of Hydrology before moving into administrative computing to head the Joint Administrative Computing Service of NERC and the then, Science and Engineering Research Council in 1988.

Since July 1993 Dr. Reed has worked for the Higher and Further Education Funding Councils as the Executive Secretary to the Joint Information Systems Committee (JISC), apart from his overall responsibility for the Committee he has been particularly involved in ICT policy and strategy development in post-16 education and research. He is also Chairman of the European Networking Policy Group.



**Martin Bean, General Manager, WU Education Strategy, Products & Solutions, Microsoft Corporation**  
 Martin Bean is General Manager of Worldwide Education Strategy, Products and Solutions at Microsoft Corporation in Redmond, Washington. Martin has over 18 years in the training and education marketplace and is a recognized industry leader around the world. He has held executive management roles in several leading organizations including iEDCC International, Navis, Syllabus Learning Systems, Thomson Learning, and New Horizons Computer Learning Centers, Inc.

As a long-standing proponent in the education industry, Martin has presented to the U.S. Senate as part of the Technology Workforce Coalition on the importance of IT in the Workforce Investment Act. He has also testified on behalf of the Workforce Coalition before the Subcommittee on Oversight of the House Committee on Ways and Means. In January 2004, he moderated a Town Hall entitled "Conversation with the President," for President George W. Bush that focused on U.S. technology workforce needs in the 21st Century.

Dedicated to the continued advancement of the education industry, he is actively involved in representing the IT industry in a variety of public policy issues and is committed to advancing federal and state level solutions to address the IT worker shortage and the reform of education to meet the needs of today's workforce.

### Fast Participating Organizations:

- Agile
- ARJIS Learning
- Blackboard
- Burg
- California State University
- Campana Management
- Capella University
- Carroll University
- Compass Knowledge
- Deakin University
- Dillon, Kame
- eCollege
- Edmentum
- Edware
- Florida Learning
- Georgetown University
- Grand Labs
- IBM
- Insomniac
- Institute for Information Industry, Taiwan
- Javelin
- John Wiley & Sons
- Korea Education Research and Information Service
- Learning Edge
- Learning Objects, Inc.
- Loughborough University
- Louisiana State University System
- Microsoft
- National Association of College Stores
- NET
- Ohio State
- Open Polytechnic of New Zealand
- Open University United Kingdom
- Oracle
- Repsol
- Repsol
- Rensselaer College
- Rennselaer State University
- Rutgers University
- Stanford
- SunGard Higher Education
- Taylor's University
- Tegity
- Telstra
- Tennessee Board of Regents
- The Australian University of Technology
- UCompass.com
- Universitat Oberta de Catalunya
- University of Auckland
- University of Georgia
- University of Maryland University College
- University of Toronto
- WU
- WU

### Fast Learning Impact and Summit Sponsors:



# Related Activity: Learning Impact Awards



- 2008
  - Online Learning Environment at University of Wollongong supported by The Learning Edge - Australia
  - Tennessee Board of Regents Online Campus Collaborative - USA
  - Giunti Labs at Volkswagen Group Italia – Italy

- 2007
  - ETS Criterion Online Writing Evaluation service at Farragut High School, Knox County Public Schools - USA
  - Cyber Home Learning System of Korea - Korea
  - OpenLearn at the Open University, United Kingdom (supported by Moodle) - UK



# Trends To Watch: Learning Impact

- **Access:**
  - Better design for access to integrated learning resources
  - Access to content collections that are significantly more useable than those of today
  - Integrated access to one of the greatest sources of learning resources: libraries
- **Affordability:**
  - ROI = distinctiveness
  - Technological support for learning to become largely transparent to the users, reducing the need for costly training and development
  - Greater use of innovative products that enable self-directed learning with an instructor in-the-loop
  - Digital or hybrid alternatives to textbooks that reduce costs while maintaining profit incentives for creators and publishers

# Trends To Watch: Learning Impact, cont.

- Quality:
  - More activity progressing in services that help achieve a technology design to support distinctiveness
  - Educational process redesign by leading institutions and organizations
  - Tools and techniques for designing and measuring accountability
  - Tools that can capture the distinctive curriculum and classroom-based instructional approach of an education provider and make that content available online
  - Use of this and other content alternatives to enhance study techniques
  - Greater integration of formative assessment into learning experiences
  - Combinations of all of the above to improve the personalization of learning

# Annual Report: Learning Technology Strategy



Six Strategic Trends To Watch



Defining Learning Impact



The State of Learning Technology and Impact



Executive Perspectives



Summary of Learning Impact Conference



Annual Learning Impact Awards

<http://www.imsglobal.org/learningimpact2007/li2007report.cfm>

# Innovation Areas



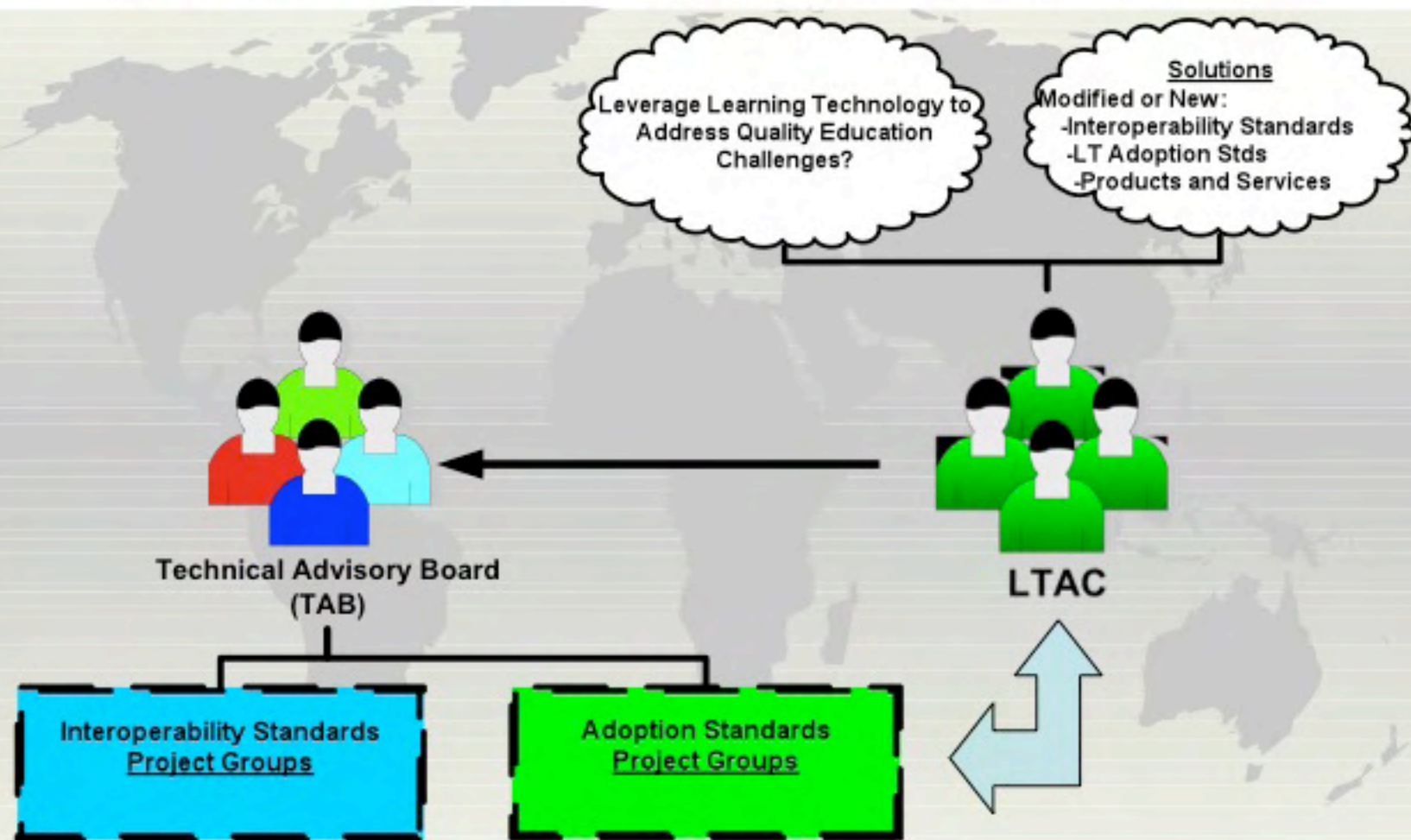
# Areas of Innovation - 1

- Learning systems & connectivity innovation
  - Organizing and delivering learning materials, activities, and applications into a coherent experience
  - Enhancing collaborative learning
  - Leveraging new application sources and platforms
- Digital content, adaptation, personalization innovation
  - Supporting learning with digital materials & activities
  - Adapting & personalizing learning experiences
  - Improving efficiency of digital content production

## Areas of Innovation - 2

- Learning information and administration innovation
  - Provisioning of student and course information
  - Improving results reporting
  - Enabling storing, matching and exchange of evidence of learning
- Leadership innovation
  - Achieving funding
  - Scaling improvements in practice
  - Assessing progress and compliance

# DEFINING & PRIORITIZING MARKET CHALLENGES FOR IMS GLC ACTION



# LTAC-prioritized Market Challenges



- Responding to the Call for Accountability - Information Analytics/Student Learning Data
- Rising Cost of Student Textbooks and Development of Dynamic, Born-digital Instructional Content
- Addressing the Increased Rate of Attrition Associated with e-Learning
- Continued Research and Reporting in Areas of Learning Technology Satisfaction and Trends (Learn SAT)
- RFPs and Tenders for Learning-related Course Management and Content Management Systems



# Learning Technology Advisory Council Invitation

- Looking for reputable leaders to help organize online discussion forums covering key opportunities and innovation areas - all toward a better formulation of your Learning Technology Strategy
- Collaboration among industry leaders to:
  - Guide focus on key opportunities and challenges
  - Monitor the landscape
  - Provide editorial board for annual report on Learning Technology Strategy
- Participate in IMS GLC Events

# Related Activity: LearnSAT

Top Ten IMS GLC Satisfaction Ratings: February 1, 2007			
Vendor or Product	Category <sup>‡</sup>	Rating <sup>†</sup>	Mean
Scale: 1 = very dissatisfied, 2 = somewhat dissatisfied, 3 = somewhat satisfied, 4 = very satisfied, 5 = perfect, <sup>†</sup> Final rating represents the bottom limit of the 95% confidence interval. See Appendix B. <sup>‡</sup> See legend below.			
ANGEL Content Management	CM/REP	4.10	4.35
eCollege CMS	CMS	3.95	4.22
ANGEL CMS	CMS	3.76	4.16
Respondus	ASSESS	3.72	3.93
Google Search	SEARCH	3.63	3.86
Apple iPod	MOBILE	3.60	4.17
Flash	WEB AUTH	3.60	3.86
Dreamweaver	WEB AUTH	3.54	3.88
Wikipedia	DIGC	3.53	3.81
Tegrity	CLASS_CAP	3.51	3.78

IMS GLC Learning  
Technology Satisfaction  
and Trends 05 February  
2007 Update  
[http://  
www.imsglobal.org/ltst/  
index.cfm](http://www.imsglobal.org/ltst/index.cfm)

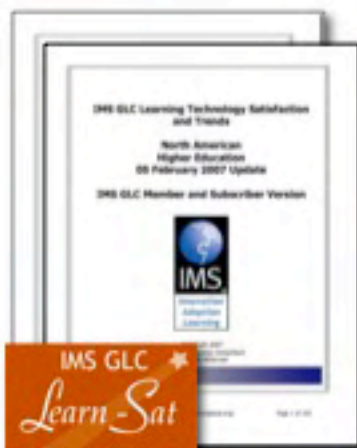


# LearnSAT Trends & Satisfaction Survey

- <http://www.imsglobal.org/LearnSAT2008/survey.html>
- Panel Participants receive survey results!
- 22 product categories covered

# IMS GLC Online Community

<http://www.imsglobal.org/articles/index.cfm>



*Presentations and Awards from Annual Learning Impact Conference*



*Leadership Interviews & Articles*



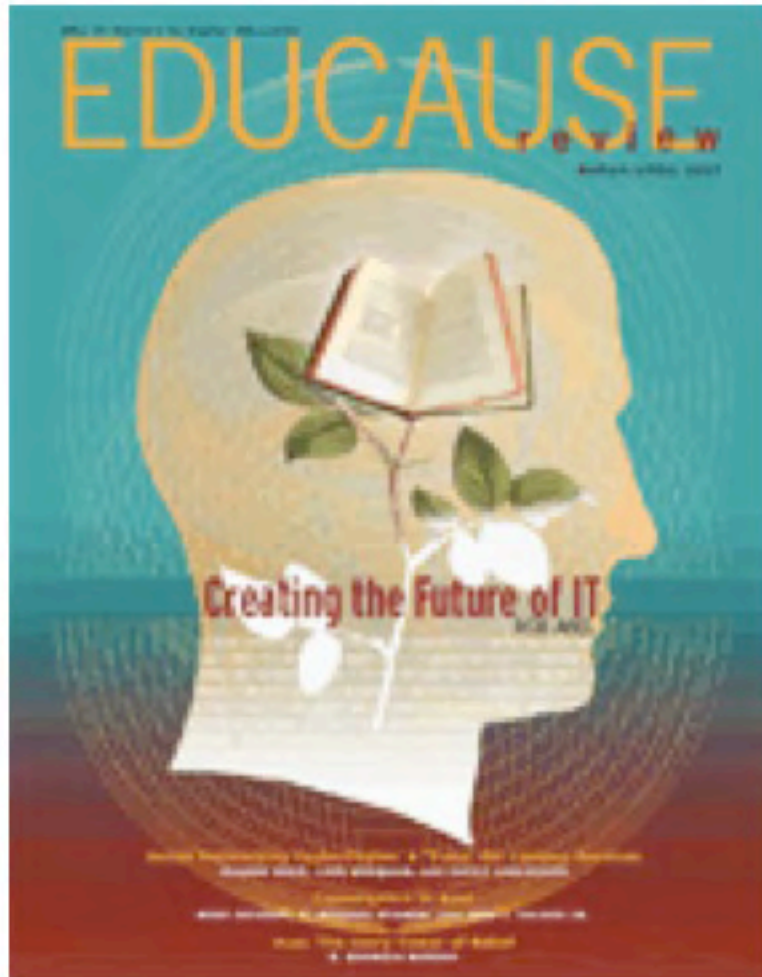
*Presentations from Quarterly Summit Meetings*

*Learning Tech Trends & Satisfaction and Best Practice Research*

*Member Directory*



*Calls for Participation*



Educause Review  
March/April 2007  
Abel, R. J.  
*Innovation, Adoption, and  
Learning Impact: Creating  
the Future of IT*

[rabel@imglobal.org](mailto:rabel@imglobal.org)

<http://www.educause.edu/apps/er/erm07/erm0720.asp>

# For Suppliers and Implementers



# Facts - U.S. Higher Ed

- 35% of all institutions use a Course Management System for virtually ALL their courses
- 99.5% of all institutions use an enterprise Course Management System
- *Source: EDUCAUSE Core Data Service Fiscal Year 2007 Summary Report*

That's great . . .

But what about all that  
other stuff?

# Technology for Education

The Web

Wireless

Search

Digital Content

Mobile  
Devices

Repositories

Assessment

VLE / LMS /  
Course Mgmt

ePortfolios

Adaptive  
Tutors

Rich  
Media

Portals

Classroom  
Capture

Personalization  
& Accessibility

Program  
Analytics

Web 2.0

Collaboration  
Environments

Secure  
Testing

Learning  
Science



IMS

Innovation  
Adoption  
Learning

Internet

High Performance Network

Web Services / SOA

Mobile  
Communication  
Devices

Personalization & Accessibility

Learner  
Interface

Instructor  
Interface

Business  
Intelligence  
Interface

# IT View: Learning Enterprise & Web

Internet Access:

- Learners
- Instructors
- Administrators

Portal

Course Management

Search

Content Management

Content Authoring and Rich Media Capture Tools

Institution  
& Program  
Analytics

Portfolio

Assessment

Adaptive or  
Collaborative  
Learning Tools  
and  
Environments

Federated Digital Content

Digital  
Library  
Content

Digital  
Publisher  
Content

Repository

Course and Student Data Exchange

Financial Systems

Administrative & Student Systems

# Digital Learning Content Evolution

- Syllabus
- Electronic distribution of Power Points, etc.
- Course Paks (Text book supplements)
- Wikis/Blogs
- What's next?

# Student View



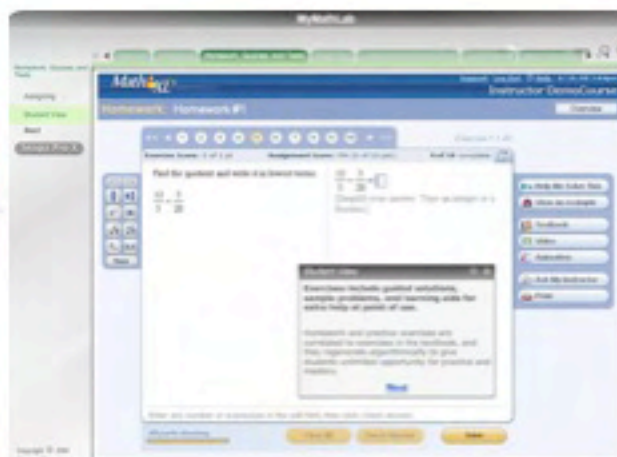
From  
Open  
University



# Content Provider Innovation



The LearningSpace interface shows a navigation menu on the left with categories like 'All Courses', 'All Textbooks', and 'All Chapters'. The main content area features a large circular diagram and various text-based information panels.



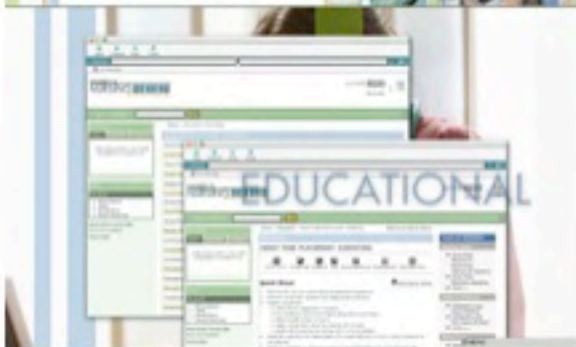
The MathKey interface displays a 'Homework #1' page with a math problem: 'Find the quotient and write it as a mixed number:  $\frac{12}{15} \div \frac{2}{3}$ '. A 'Student Help' pop-up window is visible, providing instructions on how to use the software's calculator and other tools.



The Chapters website features a 'Best Choices, Best Savings on TEXTBOOKS' promotion. It lists offers for PRINT BOOKS (up to 15% off), eBooks (always 95% off), SINGLE CHAPTERS (as low as \$1.99), and AUDIOBOOKS (as low as \$1.99). A '10% OFF ON ALL PRINT STUDY TOOLS' offer is also highlighted. The page includes a '3 Steps to a Better Grade' section and a 'FREE Shipping over \$40' banner.



MOSBY'S NURSING logo with the tagline 'PERSONALIZED SUPPORT CARE' and an image of healthcare professionals.



A screenshot of an educational software interface showing a 'CUSTOMER SERVICE' section with a 'HELP' button and a 'CONTACT US' button. The word 'EDUCATIONAL' is prominently displayed in the background.



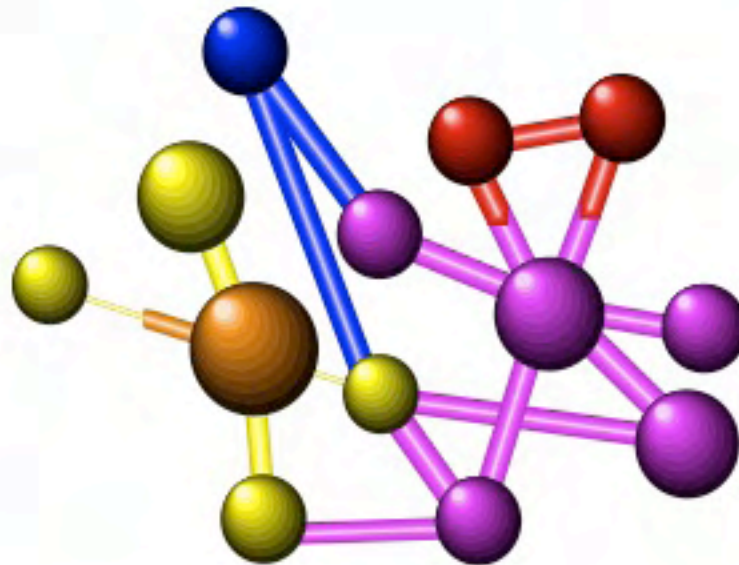
The Online Learning website features a 'Build Your Course' section. It includes a navigation bar with 'Change Course...', 'The Story', 'Courses & Programs', 'Build Your Course', 'FAQs', 'News/Events', and 'About Us'. The main content area has a heading 'Build Your Course' and a sub-heading 'There are so many ways to use and customize our courses as there are ways to travel.' Below this is a photo of students in a classroom setting.



The WILEY PLUS website features a 'PRODUCTS & SOLUTIONS' section. It includes a 'WILEY PLUS' logo and a 'See How Plus is Better' section. The 'See How Plus is Better' section lists several benefits: 'An integrated suite of teaching and learning resources containing...', 'A full online version of the textbook', 'An online gradebook', 'Reduced class preparation resources', and 'Writing-saving options for your students'. There is also a 'Expect Positive' section with a row of icons.

# Now and future

- Enabling federations of complementary and collaborative learning applications that support an enterprise (or institutional) context



# Common Cartridge and LTI

# Open Standards: IMS Digital Learning Services Standards



## Common Cartridge:

Mainstream Digital Content and Assessment Standard for Learning Management



## Learning Tools Interop (LTI):

Integration of Web Applications and Web 2.0 for Learning, plus SaaS & CaaS (Content as a Service)



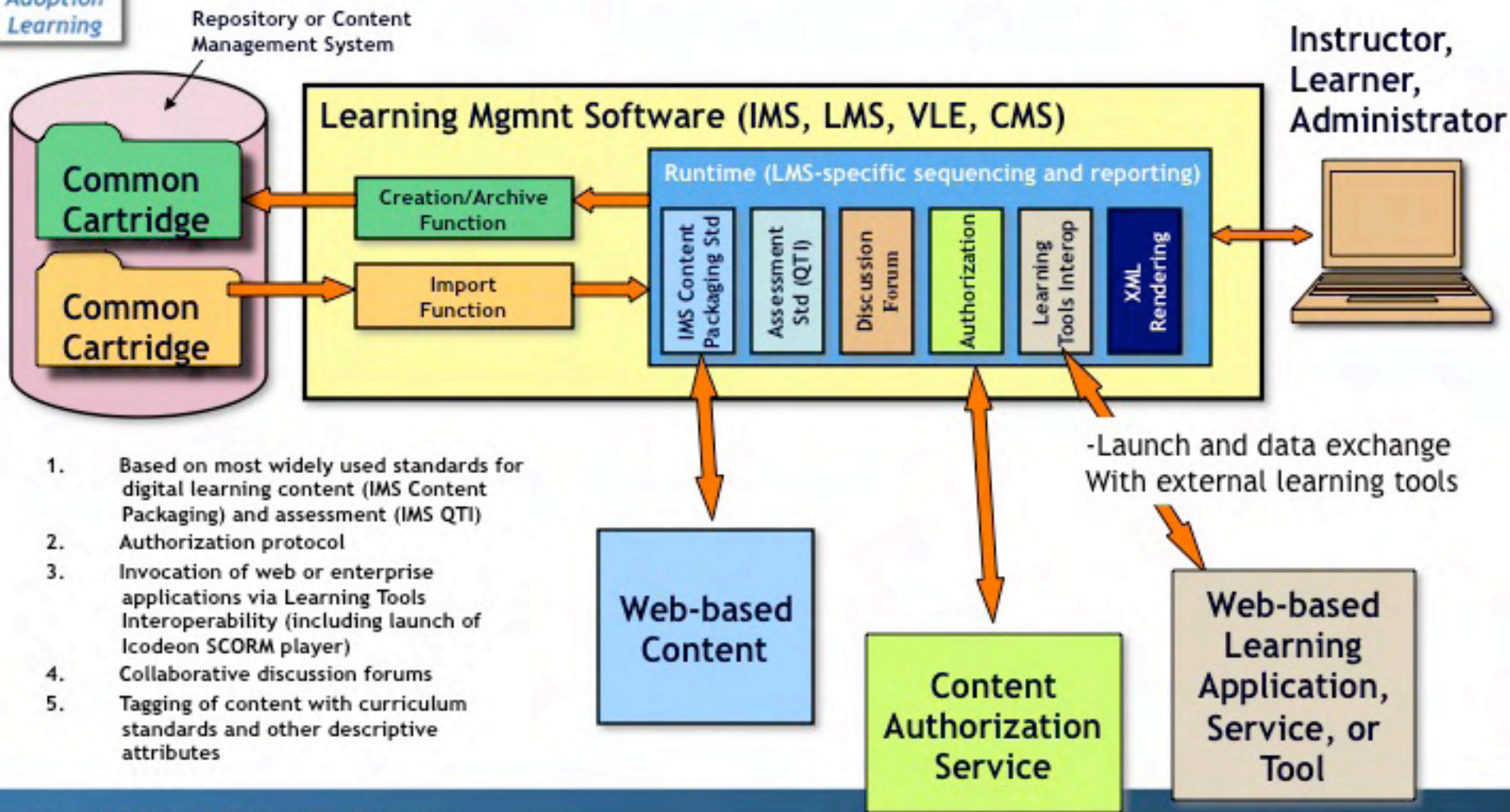
## Learning Information Services

(formerly known as “Enterprise”):

Directory, Outcomes, Analytics, HR and Student Information, Profiles, ePortfolio for Learning

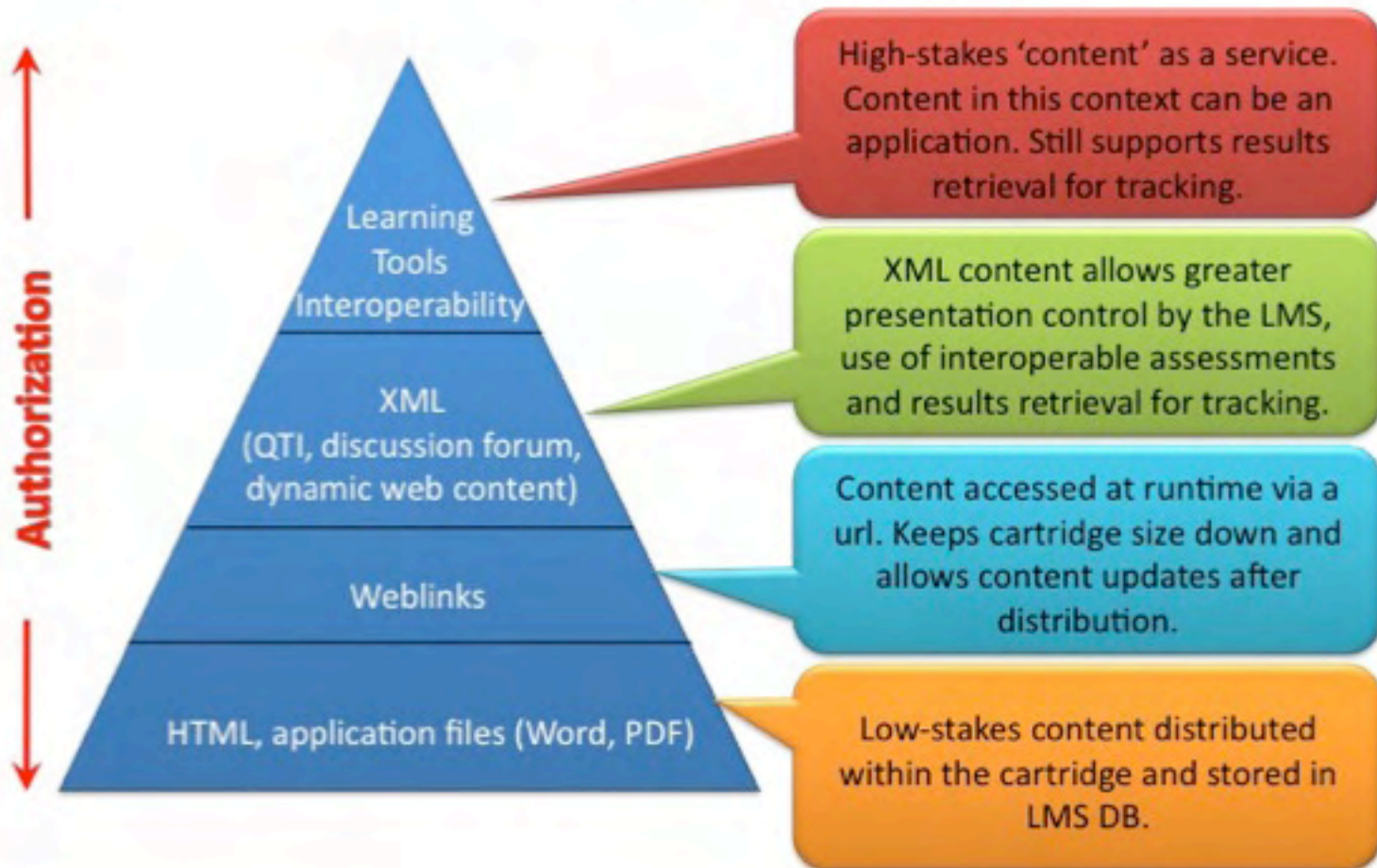
*Enabling Interoperability for the Next Generation of Learning Technology and Services*

# Common Cartridge - Next Generation Standards for Learning



1. Based on most widely used standards for digital learning content (IMS Content Packaging) and assessment (IMS QTI)
2. Authorization protocol
3. Invocation of web or enterprise applications via Learning Tools Interoperability (including launch of Icodeon SCORM player)
4. Collaborative discussion forums
5. Tagging of content with curriculum standards and other descriptive attributes

# Common Cartridge Content Hierarchy





*Do you wish you could bring the  
Web 2.0 world into your  
learning environment?*



# Now you can . . . LTI

[Logout](#)[My Workspace](#)[LTI 2.0](#)[SiteMaker](#)[View YouTube Videos](#)[Manage YouTube Videos](#)

Navigate Database Table: "YouTube Videos"

Current record is #1 out of 1 in found set (1 total records in table)

[List View](#) [Search](#) [Find All](#)

<<First <Prev Next> Last>>

## Kol Halev in Argentina - Part 1



This video was taken during our concert in Rosario, Argentina, during the summer of 2007. The trip was a very rewarding experience, both for Kol Halev and for each of the communitites that we visited.

[Comments](#) [Add Comment](#)

I found the music to be spirited, and very heartfelt. Very commendable for the group...

# Academic Enterprise Solutions

## Student Administration Integration Pack

### IMS Scoping and Association

Course ID: 003744  
Academic Institution: PeopleSoft University  
Term: 2003 Fall  
Subject Area: CHEM  
Catalog Nbr: 102

Course Off  
Chemistry  
Elem Chem

Defined business processes provide simple but powerful way to associate courses and sections to course sites

Scoping and Association									
	Include in Scope	IMS Association Number	Associated Class	Component	Class Section	Session	Class Type	Start Date	End Date
1	<input checked="" type="checkbox"/>	1	1	Lecture	1	Regular	Enrollment	08/27/2003	12/16/2003
2	<input checked="" type="checkbox"/>	1	1	Laboratory	1L	Regular	Non-Enroll	08/27/2003	12/16/2003
3	<input checked="" type="checkbox"/>	2	2	Lecture	2	Regular	Enrollment	08/27/2003	12/16/2003
4	<input checked="" type="checkbox"/>	2	2	Laboratory	2L	Regular	Non-Enroll	08/27/2003	12/16/2003
5	<input checked="" type="checkbox"/>	3	1	Lecture	TR1	Regular	Enrollment	08/27/2003	12/16/2003

Include All

Use Class Association

ORACLE



# Common Cartridge Support

- See press release for specifics
- Content: Cengage Learning, Elsevier, McGraw-Hill, Open University UK, Pearson Education
- Learning Platforms: ANGEL Learning, Blackboard (LTI), Desire2Learn, eCollege, Giunti Labs, Icodeon, Jenzabar, Microsoft, Moodle, Sakai, Ucompass



# The Digital Learning Connection

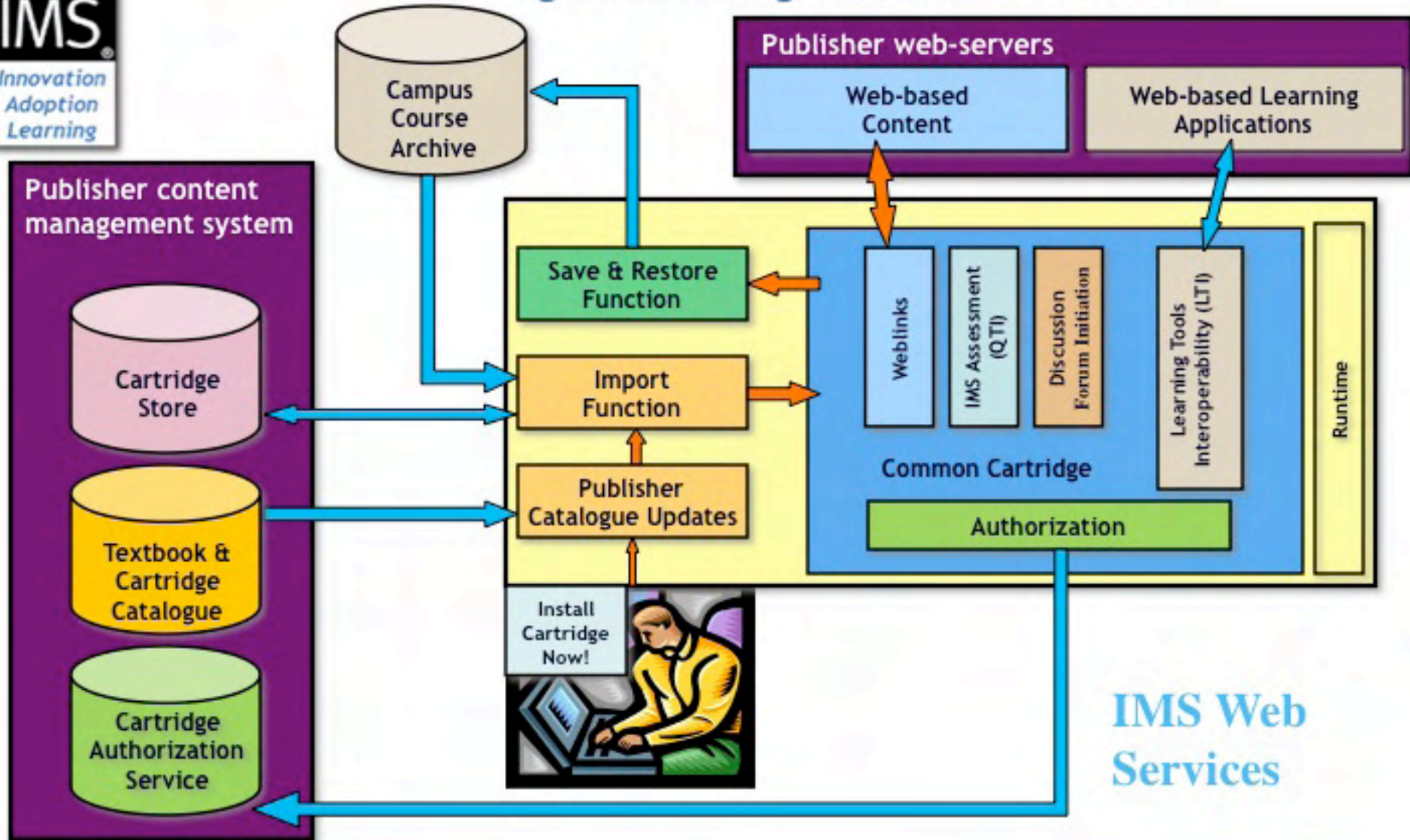
- The Need: Making the incorporation of new types and sources of digital learning content and applications into a unified learning context easy and effective for IT support, educators, and students
- Including integration of open source and open content with proprietary solutions



# The Digital Learning Connection

- The Solution:
  - Open standards so that there is a common way to incorporate digital content and applications into portals and learning management systems → IMS Common Cartridge, Learning Tools Interoperability, Learning Information Services
  - Collaboration among interested organizations to establish the technical infrastructure and pilot new digital learning alternatives → IMS Digital Learning Connection

# Digital Learning Connection Schematic



# Community, Conformance & Evolution

**FREE**  
the  
**CONTENT**



Common Cartridge  
Alliance 

[www.imsglobal.org](http://www.imsglobal.org)

## Free the Digital Learning Content!

Freedom to Innovate!  
Freedom to Migrate!  
Freedom to Interoperate!

<http://www.imsglobal.org/cc/jointhealliance.cfm>

# Common Cartridge Alliance

## Community dedicated to CC Success

- Open to:
  - Content providers
  - Platform/tool providers/developers
  - End user organizations/institutions
- Compliance, tools, test data and examples for developers
- Joint development activities
- Support for adopting a CC compliant platform and the Digital Learning Connection

<http://www.imsglobal.org/cc/alliance.html>

# Learning & Educational Technology Product Directory

Comprehensive directory of content,  
platforms, tools and services for learning

- 787 products listed
- Covers wide range of products (not just CC)
- Indicates compliance achieved



- Links to supplier web pages

<http://www.imsglobal.org/productdirectory/directory.cfm>

