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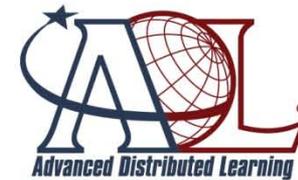
Choosing an LMS

11/30/10

Peter Berking



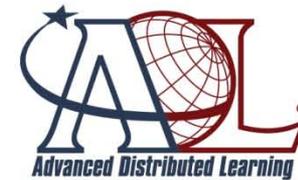
Disclaimer



Vendor citations or descriptions are for illustrative purposes only and are NOT an endorsement by ADL. All vendors and products are listed in alphabetical order unless otherwise noted.

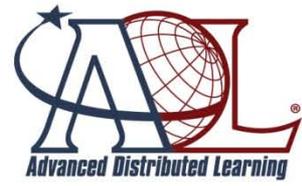


Purpose & Scope



- Present issues, opportunities, and processes to consider in choosing a system
- Categorize systems and provide examples
- Not intended as
 - Comprehensive survey of available systems
 - Comparative rating or evaluation of products





Overview

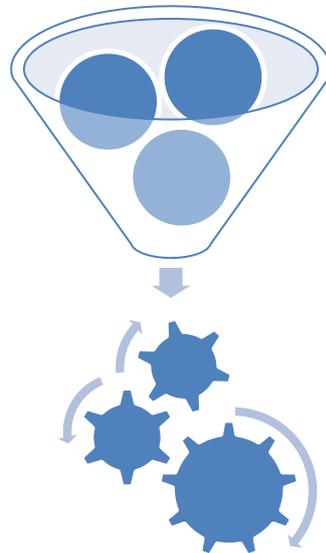


What is an LMS?



Includes these learning-related functions:

- Consolidation
- Structure
- Security
- Registration
- Delivery
- Interaction
- Assessment
- Tracking
- Reporting
- Record-keeping
- Reuse
- Personalization
- Integration
- Administration





Types of Learning Managed by LMSs



Instructional

Initial learning
Continued learning
Remedial learning
Upgrade learning
Transfer learning

Each Instructional type can be implemented as any Delivery type

Delivery

- Learner-led
- Facilitated
- Instructor-led
 - Co-located
 - Virtual
 - Synchronous
 - Asynchronous

Embedded



Who Uses LMSs and Why



- **Content developers** – build and test
- **Training administrators** – track and report
- **System administrators** – maintain and configure
- **Instructors** – assess learner performance
- **Learners** – access learning and monitor progress

 LMS **not** needed in the following situations:

- Only a small number of users
- Delivery via file server is sufficient
- Learning delivered through hard copy medium
- No performance tracking requirements



Process for Choosing LMSs



Importance of Choosing the Right LMS



- Defines capabilities of your organization
- May or may not support your
 - Types of e-learning products
 - File formats
 - Standards
 - Workflows
 - Integration with external systems
- Durability factor
 - Product viability maintained via upgrades, patches, etc.
 - Adapts to evolutionary changes in the IT and learning environments



Process for Choosing LMS – 1



- Determine high-level requirements in each LMS functional area (described in slide 5)
- Determine budget for
 - Purchasing the system
 - Associated support/training contracts
 - Customization you need
- Determine the category of system you will need (described in slide 17)



Process for Choosing LMS – 2



4. Identify specific systems that match the category and support the types of learning you identified in step 3

LMS Requirements Matrix

	Media supported	Inter-activity level	Administration skill set	Editing by non-technical staff	Output file formats	Standards compliance	Support and training req'd	Collaborative authoring	Number, roles, and distribution of users	IT considerations	Budget
Product name											



Process for Choosing LMS – 3



5. Develop and populate a matrix that allows assessing the systems identified in step 4 against your requirements developed in step 1
6. Filter list of potential candidates, eliminating those that do not meet your minimum requirements and/or are over your budget.
 - Create and send RFPs, if required



Process for Choosing LMS – 4



7. Compile detailed, comprehensive features matrix for all remaining candidate systems

LMS Features Rating Matrix

	Feature 1	Feature 2	Feature 3	Feature 4	Feature 5	Feature 6	Feature 7	Feature 8	Feature 9	Feature 10	Rollup score
Product name	<i>Weighting factor</i>										
											0
											0
											0
											0
											0
											0



Process for Choosing LMS – 5



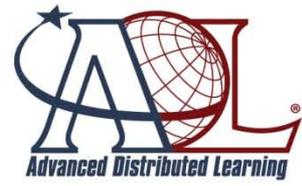
8. Develop matrix comparing the systems identified in step 6 using features list developed in step 7
9. Contact top scoring vendors in step 8 and ask for presentation/demo
 - Ask for demonstration in your facility, running your content on their system
10. Augment the matrix with the additional information gained from step 9



Process for Choosing LMS – 6



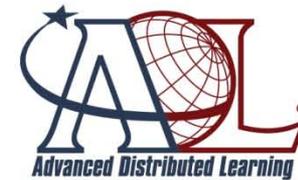
11. Make your decision based on feature comparison and experiences from the demo sessions, taking into account TCO (total cost of ownership):
- Application
 - Training
 - Upgrades
 - Maintenance
 - Intangibles



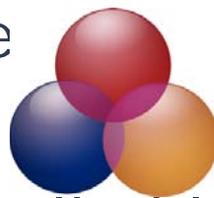
Categories and Examples of Systems to Deliver and Manage Learning



Categories of Systems



- Categories allow you to align your major requirements to the category of system you need
- Not mutually exclusive



- Category labels are applied loosely by vendors and users, based on:
 - Marketing considerations
 - Community usage patterns

LMS
VLE
LCMS
CMS



Many systems that technically are not LMSs are often termed “LMS”



Traditional LMS



- Primarily designed for
 - Learner-led
 - Embedded learning
- Can include support for **facilitated** and **instructor-led** learning
- Used primarily in business and government training



LMS Examples



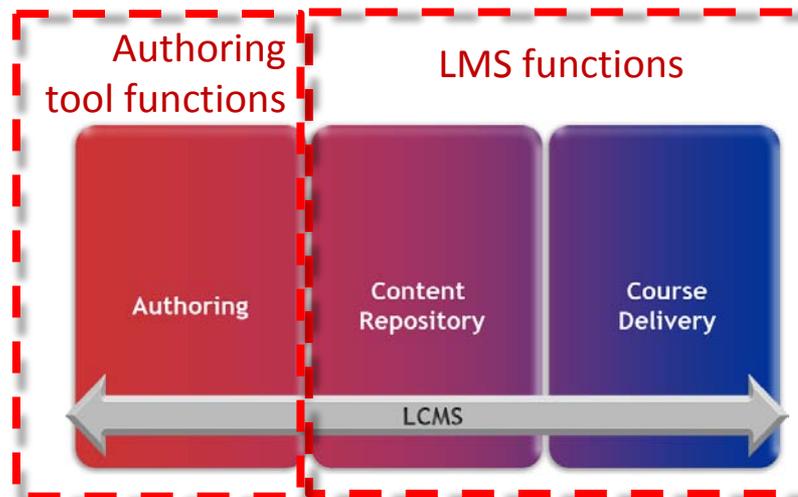
- Atlas Pro (GOTS)
- Element K KnowledgeHub[®]
- SilkRoad GreenLight LMS[®]
- ILIAS (open source)
- Learn.com
- LearnCenter[®]
- Meridian Global LMS[®]
- Mzinga Social Learning Suite[®]
- Oracle Learning Management[®]
- OutStart TrainingEdge.com[®]
- Plateau Talent Management Suite[®]
- Saba Enterprise Suite[®]
- SAP Enterprise Learning[®]
- SumTotal TotalLMS[®]



Learning Content Management System (LCMS)



- Designed for same kind of training as LMS, but with added support for documentation production
 - Instructor-led materials
 - Non-learning related references
- LCMS is an LMS integrated with an authoring tool and content repository





LCMS Examples



- Atlantic Link Content Point®
- Chalk Media chalkboard LCMS®
- dominKnow LCMS®
- e-doceo global solution®
- e-learning WMB Open Elms (open source)
- FirstAlign®
- SAP Enterprise Learning®
- OutStart LCMS®
- Saba Content Management®
- SumTotal TotalLCMS®
- WBT Systems TopClass LCMS®
- Websoft Systems KnowledgeBridge LCMS®



Course Management System (CMS)



- Primarily designed for co-located, instructor-led training
- Can include support for learner-led
- Used primarily in higher education
- Often overlaps significantly with LMS functions



Do not confuse “course management system” with “content management system”



CMS Examples



- .LRN (open source)
- ANGEL Learning Management Suite[®]
- Blackboard[®]
- Pearson eCollege[®]
- Frontier[®]
- Giunti HarvestRoad Hive[®]
- Moodle (open source)
- OLAT (open source)
- Scholar360[®]
- WebStudy[®]



Virtual Learning Environment (VLE)



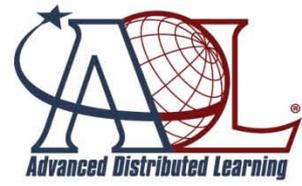
- Primarily designed for **virtual instructor-led** training
- Many of the same characteristics as CMS with addition of delivery capability
- Can include support for **learner-led**
- Event-driven, not course-driven
- Emphasis on collaborative learning



VLE Examples



- Adobe Connect[®]
- Blackboard Learning System[®]
- Desire2Learn LiveRoom[®]
- Right Reason Technologies CyberExtension[®]
- Saba Centra[®]
- Mzinga Social Learning Suite[®]
- Wimba Classroom[®]



Special Features and Issues to Consider



LMS Skins and Templates

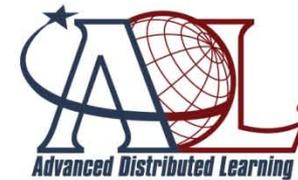


- Skins
 - Globally control the appearance and format of the LMS interface
 - Enable local variations on parent LMS interfaces for organizational branding
- Templates
 - Set of parameters that can be applied to any content or functional object
 - Sets of permissions or roles that can be globally assigned





Open Source, Freeware, and GOTS



- Pros
 - No license cost
 - Flexibility in engineering to your requirements
 - Not forced to rely on vendor for support
 - Potentially quicker response to evolving requirements
- Cons
 - Higher cost of installation, customization, and support
 - Greater reliance on user networks, communities
- Freeware may not be open source
- 10/16/09 DoD Guidance requires consideration of open source in acquisitions



Offline Player Capability



- For environment where is no or limited bandwidth or connectivity to the LMS
- Learner gets the content from a CD or download
- Upload performance data to LMS when there is bandwidth/connectivity
- Can be used in cases of file format incompatibilities between content and the LMS
- Two flavors of offline player capabilities
 - Learner has own computer with intermittent connectivity
 - Learners use community computer with no connectivity



Security Considerations



- Protect against unauthorized login
- Lock users out of capabilities not assigned in their user profile
 - Do system permissions/roles map to the levels and specific kinds your organization requires?
- Interworking with secure IT environments





Hosted Solutions



- Vendor installs and manages on their server
- Pros
 - Eases your hardware and network infrastructure needs
 - Lowers your staff costs for admin and maintenance
 - Enables faster implementation
- Cons
 - Restricts opportunities and scope for local customization
 - May not meet your security requirements
 - Generally more expensive



Cross Domain Issue



- Problem appears in LMS implementations where there is a separate content repository server on another domain from the LMS
- Workarounds:
 - Allowing the primary server to serve as a proxy to the server on the other domain
 - JavaScript Object Notation with Padding (JSONP)
 - Cookie security



Test and Staging Environments



- Important to take into account when acquiring an LMS (could impact price)
 - Development
 - Test
 - Production
 - May need on separate networks due to firewall restrictions and different access needs for 3 user groups
-  For test and production environments, ensure configurations are mirrored



Standards Support



SCORM 2004 Support – 1



- The system must
 - Support SCORM-conformant learning delivery
 - Support all SCORM data model elements (SCORM 2004)
 - Import SCORM course packages
 - Support SCORM metadata
 - Support sequencing and navigation rules for the course organization (SCORM 2004)

**SCORM
2004
4th Edition**



SCORM 2004 Support – 2



- Determine your target SCORM compliance level (current version is SCORM 2004 4th Edition)
 - Depends on conformance level of your legacy courseware as well as courseware you plan to develop
 - For legacy SCORM 1.2 content, ensure that the system supports it separately; SCORM 2004 is not backwards compatible with SCORM 1.2
- Test a sample SCORM-conformant e-learning course (produced by the authoring tool you use) on the LMS you are evaluating for purchase



SCORM Product Status



Conformance

- A product is tested to ensure it performs as specified in the ADL SCORM Test Suite
- Applies to a specific version of SCORM only
 - SCORM 2004 2nd Edition
 - SCORM 2004 3rd Edition
 - SCORM 2004 4th Edition (released 3/31/2009)

Certification

- Applies to LMSs only
- A qualified, neutral third party conducts a formal evaluation using the ADL SCORM Test Suite and a rigorous, accurate, reliable, validated methodology
- Applies to a specific version of SCORM only
 - SCORM 2004 2nd Edition
 - SCORM 2004 3rd Edition
 - SCORM 2004 4th Edition (coming soon)
- Certified products display the ADL certified product logo



Section 508 Support

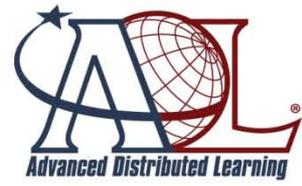


-  Do not confuse Section 508 compliance for the **LMS interface/navigation** with Section 508 compliance for the **content**
- Verify 508 compliance by testing the LMS with screen reader software



Orca





Criteria for Assessing Quality and Suitability of LMSs



Caveat



The important question is:

“What can the system do in a right-out-of-the-box, plug-and-play use case scenario?”

not

“What can the system do?”



Quality Criteria – 1



- Uses a straightforward, simple workflow for learner registration/enrollment
- Notifies users when actions are taken in the system that affect them
- Offers batch options for tasks involving groups of system objects
- Enforces prerequisites for course enrollment
- Provides an easy, powerful, and intuitive process for importing and configuring content
- Uses robust security architecture to maintain system access



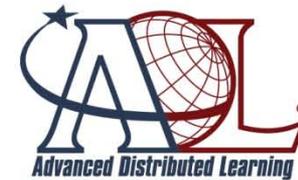
Quality Criteria – 2



- Defines a wide variety of permission and role levels
- Performs with minimal latency
- Provides flexibly defined course catalogs
- Allows visual branding of the interface for different user groups in the enterprise
- Supports the current and all required legacy versions of relevant standards such as SCORM
- Provides support for student surveys and training needs surveys
- Allows consolidating diverse content pieces into a single course



Quality Criteria – 3



- Supports a wide variety of delivery architectures.
- Costs less for the base application license compared to the cost of other similar systems with similar capabilities and feature sets.
- Provides an internal function to create and deliver a wide variety of assessment types
- Supports management of mentoring, coaching, etc.
- Includes collaboration functions to enable users to communicate with each other, instructors, course administrators, system administrators, etc.



Quality Criteria – 4



- Supports competency management and development/learning plans
- Capable of tracking, reporting and storing a wide range of student performance data
- Allows administrator design/upload and learner delivery of course completion certificates
- Interfaces with a wide variety of HR and enterprise resource planning (ERP) systems
- Supports the kind of metadata your organization uses



Quality Criteria – 5



- Has the ability to manage profiles for organizations, not just users
- Offers a wide variety and number of predefined reports
- Allows users to choose from tiers of features according to the knowledge and expertise of the user
- Displays interfaces that are consistent and standardized throughout all screens



Quality Criteria – 6



- Allows learners and administrators to print transcripts, course completion certificates, and student records with appropriate options
- Has a scalable architecture that allows the system to expand as the number of users increases
- Vendor has a good reputation among acquisition and system owner communities
- Has robust support documentation in a wide variety of forms, including tutorials, help, examples, references, and user manuals
- Supports a wide variety of media file formats



Current Trends in LMSs



Trends – 1



- Support and optimization for:
 - Immersive learning technologies
 - Social media
- Open architectures
- Adding:
 - Authoring capabilities
 - Knowledge management architecture and capabilities
- Support for team-based learning
- “Gadget” - based interface



Trends – 2



- Adding HR functions such as:
 - Talent management architecture and capabilities
 - Competency analysis tools
- Software as a Service (SaaS)



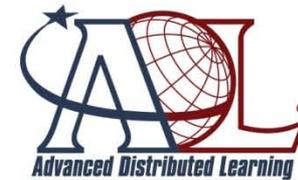
Trends – 3



- Death of the LMS?
 - Distributed context and delivery
 - Content becoming more and more embedded within disparate contexts
 - Availability at the point of need/relevance, not centralized within a monolithic system
 - Need to track, analyze, summarize employee development-related data across enterprise
 - Not just assessment scores within training applications
 - User learning via social learning applications



Resources and References



- Industry surveys, product comparisons, reports, buyers guides
 - Bersin & Associates
<http://www.bersin.com/>
 - Brandon-Hall
<http://www.brandon-hall.com/>
 - E-learning Guild
<http://www.elearningguild.com/>
 - Training Media Review
<http://www.tmreview.com/>