



Open Source Learning Management Systems

Emerging open source LMS
markets

Recommended LMS for each
market

Getting off on the right foot

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Executive summary

If you thought that “Open source learning management system (LMS) equals Moodle”, then think again. There are at least five credible open source substitutes to commercial LMS solutions, each of which we feel is good enough to recommend to our customers. There is no ‘one-size-fits-all’ system; each of them has strengths that suit certain organisations and weaknesses that make them less suited to others. In this paper we recommend the top open source LMSs, take a look at five key markets and propose the open source LMS best suited to each.

A changing market

Open source LMSs have evolved against a background of consolidation in the commercial LMS market which has seen:

- global players (Oracle, Peoplesoft, SAP) entering the enterprise market
- a dwindling number of vendors dominating the enterprise market (Saba, Sumtotal, Plateau) largely through merger and acquisition activity
- many mid-market LMS vendors (such as Epic’s non-open source Arena LMS) specialising in small and medium sized business and niche markets.

As the LMS market evolves, it is facing up to some major challenges. The big ERP players have failed to achieve their forecast success, incumbent vendors have been criticised for responding slowly to changing customer requirements, and customer satisfaction is low. Recent reports by Bersin (2007) found low satisfaction in:

- out of the box functionality
- management reporting
- ease of customisation
- inflexible data models and architectures
- rapid return on investment
- vendor service and support.

This plays right to Open Source's strengths – innovation, cost and support. Little wonder that Open Source is growing in this market.

The opportunity for Open Source

The result of this widespread dissatisfaction in the corporate LMS market is that 24% of buyers actually want to change platforms (Bersin, 2007). The opportunity is different in UK education where there is a government commitment to making learning platforms ubiquitous in schools by 2008, yet over 50% of primary and secondary schools feel they are under-equipped with learning platforms (BESA, 2007).

In this paper we demonstrate that Open Source has evolved into a position whereby:

- it can provide effective solutions to the customer satisfaction problems that permeate the LMS market
- it can provide credible substitutes to commercial LMSs
- in a market where innovation is high value, Open Source can provide greater value than its commercial counterparts.

Emerging open source LMS markets

Large enterprise

The large enterprise market is dominated by a small number of vendors providing high price and feature rich performance management systems. Of the markets we investigate in this paper, large enterprise is the least open to the threat of substitution from Open Source due to high levels of investment and vendor lock-in. Sumtotal, Saba and Plateau enjoy a 75% share of this market, while Moodle has just 6% (Elearning Guild, 2007).

Until open source LMSs interface with HR and employee management systems and come with commercial warranties, we won't see Open Source making serious inroads here. But this is a market that Open Source will pick away at while new features are developed that better meet the market's needs.

Small and medium sized business (SMB)

The SMB market is the largest sector in the £300m LMS market (Brandon Hall, 2007 and Bersin, 2007). It is served by a large number of 'mid-market' LMS vendors, many of whom offer specialised or hosted solutions at lower cost. Moodle already has 24% share in this segment, ahead of Sumtotal with 21% (Elearning Guild, 2007). However, while Sumtotal is more likely to be used across the business, a Moodle installation will more likely support a single project or team, supporting a rapid rollout of some new e-learning content.

The SMB market is wide open and buyers have many feasible routes to choose from. Free software, regular updates, rapid innovation and ease of customisation are not commonly associated with the LMS world, but with competition driving prices down and customers demanding ever more value and innovation, Open Source can provide a credible alternative here. Only the most adaptable commercial LMS vendors will survive in this market.

Government and public sector

Open Source is making increasing waves in UK government, where policy sensibly dictates that Open Source must be considered in all software procurement processes. Open Source can have a significant impact in delivering or supporting services by electronic means, and an open source LMS can contribute to three of the ten 'interactions' defined in the UK government Best Value Performance Indicator 157 (BVPI 157):

- information provision
- booking venues, resources and courses
- providing access to community, professional or business networks.

This market is currently well served by commercial vendors such as Blackboard, Pathlore and Sumtotal. However, Moodle is well known in this market and already installed in some local authorities and government departments and, as we show, there are other open source LMSs that will meet the needs of this market.

Primary and secondary education

Learning platforms are supposed to be in all UK schools by 2008, yet 44% of primary schools and 50% of secondary schools consider themselves under-equipped (BESA, 2007). This is a major LMS market, traditionally controlled by a handful of specialist commercial vendors like Blackboard, although this is changing. Moodle is now predominant in secondary schools and lies in third place in primary schools, behind Digital Brain and My Grid for Learning (BESA, 2007).

A list of approved LMS suppliers for schools is published by Becta, which is tasked with providing IT advice, tools and services to UK schools. Becta has come under fire from educational IT practitioners for not including open source providers in its learning platform suppliers framework, despite the value Open Source can clearly provide. The Becta framework is not mandatory and schools and local authorities remain free to procure direct from other sources, including Open Source, if they have the

expertise. However, many do not have the expertise and will rely on these suppliers to manage their entire IT infrastructure. This combination of factors may have held back Open Source in primary and secondary education to date.

We should point out that the term Virtual Learning Environment (VLE) is widely used in the education market. We view the terms VLE and LMS as interchangeable.

Rapid rollout

As well as these four market sectors, we have identified a fifth which is cross-sector and increasingly important. In Epic's experience, rapid e-learning solutions have become increasingly important. These are just-in-time, performance support projects in which an LMS is required to track completion and the wider LMS feature-set is ignored.

This is where Moodle in particular has been making inroads in the corporate market, even in organisations which already have a fully-fledged commercial LMS, but which is considered overkill and time-consuming in terms of the hoops managers have to jump through to get courses uploaded.

Market feature matrix

Each market has different requirements from an LMS. Some requirements, such as user progress tracking and bookmarking, are common to all LMSs, while other sectors require more diverse areas of functionality. The following market-feature matrix outlines the requirements that are priorities for each sector.

	Primary / secondary education ⁽¹⁾	Government / public sector ⁽²⁾	Small / medium sized business ⁽³⁾	Large enterprise ⁽⁴⁾	Rapid rollout ⁽⁵⁾
Assessment engine	✓		✓		✓
User/collaboratively created resources	✓				
Accessibility	✓				
Personalised preferences	✓				
Lesson planning	✓				
Self-enrolment	✓			✓	✓
Activity sequencing and scheduling	✓				
Batch registration of users	✓	✓		✓	✓
Collaboration tools	✓	✓	✓		
Extensible using web services	✓	✓			
Student admin system integration	✓				
HR and financial system integration				✓	
Learner feedback and evaluation		✓			✓
Detailed reports on usage, results, costs, feedback		✓		✓	
Competency profiling		✓	✓	✓	
Individual learning plans		✓			
Content authoring			✓		
Classroom learning in course catalogue				✓	
Ease of rebranding			✓	✓	✓

Market feature matrix sources

⁽¹⁾ Becta Learning Platforms Technical Specifications, 2006 ([link](#))

⁽¹⁾ Becta Learning Platforms Functional Requirements, 2006 ([link](#))

⁽²⁾ E-Government Interoperability Framework ([e-GIF](#)), 2005 – this defines the technical policies and specifications governing information flows across government and the public sector, covering interconnectivity, data integration, e-services access and content management.

⁽²⁾ Oldham Primary Care Trust case study

⁽³⁾ Epic's own experience of selling our Arena LMS product into this market

⁽⁴⁾ Elearnity white paper on Enterprise Learning Management Systems, 2001

⁽⁴⁾ Epic white paper on Learning Management Systems, 2006

⁽⁵⁾ Epic's own experience of selling Rapid E-learning solutions

The open source landscape

Benefits of Open Source

We have already seen where customer satisfaction with commercial LMSs is low:

- out of the box functionality
- management reporting
- ease of customisation
- inflexible data models and architectures
- rapid return on investment
- vendor service and support.

Each of these weaknesses is a strength in Open Source. The very nature of Open Source means that features can be customised and changed to meet business needs. Sustainable communities of developers and users provide excellent support in the form of forums, email lists, knowledge bases and documentation. In the rare event that the community cannot help, the development team is often available on contract rates. In addition, there are official partners and third party service providers offering services such as support, consultancy, hosting and customisation.

Additional benefits of Open Source include:

- **avoiding vendor lock-in** and hence the risk of poor support now or in the future
- **enhanced reliability** of a product that has been quality assured by a large team of testers on more technical platforms than a commercial vendor could afford or consider
- as licensing costs are zero, you will have **more budget to tailor your solution to your needs**
- open source communities find and fix bugs more quickly than in commercial software, and as release processes are more regular, **bug fixes make their way to market more rapidly**
- **security patches are released more quickly** when vulnerabilities are found, a process which can take weeks or even months in commercial software

- **ease of customisation** means that Open Source can better meet your needs
- open source products get **localised into languages which commercial vendors would not consider** financially viable, for example the OpenOffice 'Ladin' version, a South Tyrol dialect spoken by just 30,000 people
- **mitigation of vendor collapse or product discontinuation**, which are both commonplace in the rapidly consolidating LMS market
- involvement in a community of practitioners working together to support each other and improve the software, which brings its own benefits for both you and your organisation in terms of **reputation, respect and experience.**

Risks of Open Source

There are some common pitfalls to be aware of when using Open Source:

- while the main project is developed by a core team, many third parties create extensions for open source software. **Extensive use of third party extensions raises the maintenance cost** as they often trail behind in terms of interoperability with the latest core system version. Never upgrade the system without first testing that it works with all your extensions.
- all software needs support and maintenance. There may not be licensing costs, but **do not fall into the trap of thinking Open Source is zero cost** – Open Source is free as in speech, not free as in beer.
- Open Source often infiltrates organisations from the bottom up and your IT team may not know what you have installed. As important updates are released, your software may not get patched. **Inform your IT team, and give them responsibility for security patch management.**
- **do not consider using open source code in your own products unless you understand open source licensing.** Different open source licenses place

varying levels of restriction on using and distributing the code and some of them are highly restrictive.

Myths of Open Source

It is too much of a culture change for our organisation

Open Source is in your organisation already. You are likely to have open source email servers, web servers, fileservers, networking software and security software. Open Source has also moved into middle and front-end software through MySQL databases, OpenOffice, Customer Relationship Management systems and other application software. Culturally, Open Source has sneaked in through the back door.

The idea that something is free may also seem radical but the idea that something is of no value if it is free is an irrational fear. Even hardened corporate cultures such as IBM, SUN and Microsoft have recognised that Open Source is a commercial phenomenon, that is here to stay and that one must use it or risk being left behind.

Open Source software isn't reliable

Having lots of talented developers working to improve code over long periods produces robust software. These developers are often far more motivated than commercial software developers as contributions make or break reputations. Contributions from a diverse programming community leads to compatibility with lots of supported platforms and environments.

Open Source is always 'in development'

Many open source projects are stillborn, others get started but quickly fail through lack of interest and support. It is a truly Darwinian environment where strong projects get selected and weak ones die. Those that survive tend to dominate in the same way that commercial products dominate their market. They also attract commercial partners.

One need have no fears about where such projects lie in development. Because open source code is developed

on the web through collaboration, version control is obsessive and stable versions are frozen for release.

Open source software isn't supported

Support for Open Source is remarkably powerful. Remember that the whole idea is that many hands make light work. This, combined with a genuine community of developers who see sharing as a virtue, leads to good support. It can be variable, and many open source projects die a death, but when carefully chosen they become some of the best supported software projects around.

Many open source projects have continued to be developed, refined, and supported over many years - years in which supposedly supported commercial software packages have ended up in the dustbin after their parent companies have been acquired, or simply defeated in the marketplace.

Open source software isn't controlled

Despite a large developer base, open source products are tightly controlled by a small core team. Very few people actually have access rights to integrate code; this task is performed by a few closely-involved individuals.

However, projects are not over-reliant on key individuals. For example, many of the Apache team left to form Netscape, yet Apache still achieved market dominance in the web server market. In fact, the chance of a popular open source software product continuing to be supported after the departure of key individuals is much better than the survival of a proprietary product after the demise, acquisition or change in the product strategy of a commercial vendor.

Selecting an open source LMS

There are over 50 open source LMSs to choose from. However, we have filtered these projects to select the ones which:

- have an Open Source Initiative approved license
- have an active development community
- have released stable versions
- are English language
- are SCORM compliant
- have published details about previous adopters
- have a stable organisation supporting ongoing development
- have had third party reviews published.

As of September 2007 this resulted in the following list.

LMS	Version	Link
ATutor	1.5.5	http://www.atutor.ca/
Claroline	1.8.6	http://www.claroline.net/
Docebo	3.0.6	http://www.docebo.org/
Dokeos	1.8.4	http://www.dokeos.com/
dotLRN	2.3.1	http://dotln.openacs.org/
Ilias	3.8.3	http://www.ilias.de/
Interact	2.3.1	http://www.interactole.org/
KEWL.NextGen	1.3.1	http://kngforge.uwc.ac.za/
Metacoon	1.9.5	http://www.metacoon.de/
Moodle	1.8.2	http://moodle.org/
OLAT	5.2.2	http://www.olat.org/
OpenElms	5.0	http://www.openelms.org/
Sakai	2.4.1	http://www.sakaiproject.org/

Having shortlisted these thirteen LMSs, we then analysed each according to the previously shown market feature matrix, scoring each feature on a scale of 1 to 10. The following section details the results.

Market recommendations

Large enterprise

Ilias and Sakai are the top placed products in this market.

However, while Sakai and Ilias share the top spot, the detailed scores show that Sakai is a far better all-round performer.

All the LMSs scored equally for handling classroom and offline events, self-enrolment and batch import of users. All of them are extensible so can be integrated with external HR and finance systems. However, actual numbers of publicised integrations are low across the board. Tracking capabilities are also good in all products, with Sakai and Moodle taking the lead.

However, while Ilias scores lower on most features, it has one particular feature that is not supported by any other open source LMS in this white paper: competency profiling.

In Ilias, competencies can be defined as 'learning objectives'. A learning objective can include pre-tests for skills gap analysis, and the administrator can set it up so that an assessment must be passed or certain learning objects completed in order to accomplish the learning objective. In this way, a set of learning objectives can be set up for each job role in an organisation.

If competency management is not a priority then Sakai takes the clear top spot. There is also a choice between Java (Sakai) and PHP (Ilias) server environments, and this

Table 1: Summary scores

Ilias	80%
Sakai	80%
dotLRN	70%
Moodle	70%
Docebo	57.5%
OLAT	57.5%
Claroline	56.3%
Atutor	55%
Dokeos	55%
Metacoocn	55%
Open Elms	52.5%
KEWL.NextGen	50%
Interact	42.5%

could be a major factor for large enterprises looking to handle support and customisation internally.

Table 2: Detailed scores

	dotLRN	Ilias	Moodle	Sakai
HR and financial system integration	2	2	2	4
Classroom learning in course catalogue	10	10	10	10
Detailed reports on usage, results, costs, feedback	9	8	7	10
Competency profiling	0	10	0	0
Self-enrolment	10	10	10	10
Batch registration of users	10	10	10	10
Detailed reports on usage, results, costs, feedback	9	8	7	10
Ease of rebranding	6	6	10	10
Total points	56	64	56	64
Percent score	70%	80%	70%	80%

Small and medium sized business

Ilias, Atutor, Moodle and Sakai share the top spots in this market. All four products scored identically in two areas: assessment engines and tools for content authoring.

Ilias takes the number one position for this market due to its support for competency profiling.

This measures skills and certifications against job role definitions to define areas in which an employee requires additional training and those in which the employee is already skilled to the appropriate level.

Ilias is outperformed by all three other LMSs in collaboration tools and ease of rebranding.

There really is nothing to choose between Moodle, Sakai and ATutor. They all share joint second place. There is a choice between Java (Sakai) and PHP (Ilias, ATutor and Moodle) server environments, which may influence organisations looking to handle support and customisation internally.

Table 3: Summary scores

Ilias	88%
Atutor	80%
Moodle	80%
Sakai	80%
Dokeos	76%
Metacoocn	72%
OLAT	72%
Docebo	68%
KEWL.NextGen	68%
Claroline	64%
dotLRN	60%
Open Elms	60%
Interact	52%

Table 4: Detailed scores

	ATutor	Ilias	Moodle	Sakai
Competency profiling	0	10	0	0
Assessment engine	10	10	10	10
Content authoring	10	10	10	10
Collaboration tools	10	8	10	10
Ease of rebranding	10	6	10	10
Total points	40	44	40	40
Percent score	80.0%	88.0%	80.0%	80.0%

Government and public sector

Ilias, Sakai and Moodle gain the top three places in this market.

Ilias again gains the top spot due to its support for competency profiling, despite having lower scores overall. This is a really key area in which all the other LMSs reviewed scored zero. This represents a major gap between what the market wants and what the open source LMSs are delivering.

Table 5: Summary scores

Ilias	94.3%
Sakai	85.7%
Moodle	81.4%
dotLRN	75.7%
Docebo	67.1%
Atutor	65.7%
Dokeos	62.9%
OLAT	61.4%
KEWL.NextGen	55.7%
Claroline	54.3%
Open Elms	50%
Interact	45.7%
Metacoos	45.7%

All three products scored equally in their support for extensibility, individual learning plans, learner feedback surveys and batch user registration.

Taking competency profiling out of the equation would mean that Sakai wins hands down with a clean sweep of maximum points in all other areas.

Extensibility using web services and support for individual learning plans are particular areas noted in the e-GIF and by the NHS as vital features. There is so much data held in disparate systems across the public sector that use of web services to link up systems is becoming widespread. Also, individual learning plans are vital for organisations in which the level of skills and expertise varies so widely.

Table 6: Detailed scores

	Ilias	Moodle	Sakai
Extensible using web services	10	10	10
Learner feedback and evaluation	10	10	10
Detailed reports on usage, results, costs, feedback	8	7	10
Batch registration of users	10	10	10
Collaboration tools	8	10	10
Competency profiling	10	0	0
Individual learning plans	10	10	10
Total points	66	57	60
Percent score	94.3%	81.4%	85.7%

Primary and secondary education

Sakai, Moodle, ATutor and Ilias share the top places in this market.

While Moodle probably has greater penetration and visibility in the sector, it is not the most advanced product for primary and secondary education. That mantle belongs to Sakai.

Sakai and Moodle both score identically in all areas except accessibility and integration with external administration systems, where Sakai is clearly ahead.

Atutor and Sakai both share strengths on accessibility, being WCAG 1.0 AA compliant, while Ilias and Moodle make no attempt at a clear accessibility statement.

Regarding integration with student administration systems, Sakai leaves all other products trailing in its wake, having established relationships with major systems integration partners such as Oracle.

The single area where all systems scored zero was lesson planning, whereby teachers can produce and manage lesson plans in the LMS. This is one of Becta's learning platform framework requirements and there is another major gap here between what the market wants and what the open source LMSs are delivering.

Table 7: Summary scores

Sakai	89.1%
Moodle	79.1%
Atutor	77.3%
Ilias	77.3%
dotLRN	71.8%
OLAT	61.8%
Dokeos	59.1%
Docebo	57.3%
Claroline	53.6%
KEWL.NextGen	50%
Interact	41.8%
Metacoon	39.1%
Open Elms	29.1%

Table 8: Detailed scores

	ATutor	Ilias	Moodle	Sakai
Assessment engine	10	10	10	10
User/collaboratively created resources	10	10	10	10
Accessibility	8	5	5	8
Personalised preferences	10	10	10	10
Lesson planning	0	0	0	0
Self-enrolment	10	10	10	10
Activity sequencing and scheduling	5	10	10	10
Batch registration of users	10	10	10	10
Collaboration tools	10	8	10	10
Extensible using web services	10	10	10	10
Student admin system integration	2	2	2	10
Total points	85	85	87	98
Percent score	77.3%	77.3%	79.1%	89.1%

Rapid rollout

If you need to get your e-learning rolled out quickly, do not require any bells and whistles for your LMS and just want something that can be setup with minimum fuss, then any of these top six will do the job.

Most of the features required here are simple yes/no answers and so there are a good number of LMSs scoring top marks. This does not indicate any problem with the scoring or criteria though, and we certainly agree with this conclusion as all these LMSs are worthy solutions for a rapid e-learning rollout.

Table 9: Summary scores

Atutor	100%
Claroline	100%
Dokeos	100%
Moodle	100%
OLAT	100%
Sakai	100%
Docebo	92%
dotLRN	92%
Ilias	92%
Metacoorn	80%
KEWL.NextGen	72%
Open Elms	70%
Interact	60%

Table 10: Detailed scores

	ATutor	Claroline	Dokeos	Moodle	OLAT	Sakai
Assessment engine	10	10	10	10	10	10
Self-enrolment	10	10	10	10	10	10
Batch user registration	10	10	10	10	10	10
Learner feedback and evaluation	10	10	10	10	10	10
Ease of rebranding	10	10	10	10	10	10
Total points	50	50	50	50	50	50
Percent score	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

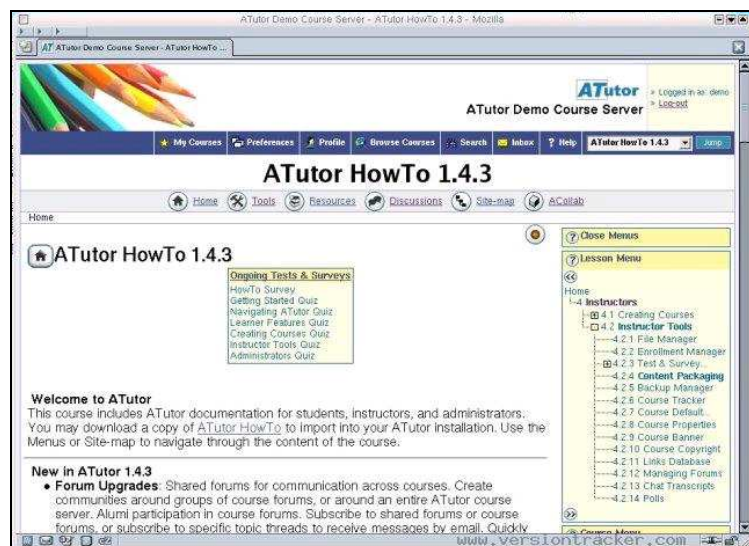
A detailed look at each LMS

Organisations look for a variety of factors when considering Open Source, including:

- size and sustainability of development and user communities
- provision of informal community support
- stability of the core development team.
- In this section we present some background information on the LMSs we have recommended in the previous section.

ATutor

ATutor was designed to be accessible and easily customised. A core team of 12 staff handles ongoing development, supported by 16 separate organisations including, among others, Adaptive Technology Resource Centre, University of Toronto, University of Bologna, International Relations and Security Network (ISN) and Fraser Health.



ATutor places great emphasis on standards compliance and is W3C WCAG 1.0 compliant at AA+ level, and W3C XHTML 1.0 compliant.

A range of ATutor services are offered by the ATutor team, including technical support, custom development,

re-branding and hosting. Services are also offered by nearly 40 external service providers.

DotLRN

dotLRN was developed at the Massachusetts Institute of Technology (MIT). It is used worldwide by over half a million users in higher education, government, non-profit, and US K-12 education.



It is supported by the .LRN Consortium, a non-profit organisation that handles governance, coordination and ongoing development. This currently consists of a 9-strong leadership team from 16 consortium members who each pay up to £5,000 annually, including MIT, University of Sydney, Heidelberg University, University of Bergen and Vienna University.

The screenshot shows a dotLRN web interface for a class titled "Youth and Media Culture". The interface is organized into several columns and sections:

- Left Column:**
 - SYLLABUS:** Includes a link to "Download Syllabus".
 - YOUTH AND MEDIA CULTURE:** Features a photo of a globe and the text "American Cultural Studies A.C.S.". Below it is a "SUBGROUPS" section listing "Section 1" and "Section 2", each with a "View" link.
 - CLASS CONTENT:** Lists topics such as "Popular Culture - An Introduction", "Section 1 - Advertizing and Youth Markets", "Section 2 - The Internet and the Media", "Section 3 - Youth Groups and Hanging Out", and "Image Database (Benetton Advertising)".
 - HOMEWORK:** Shows a "Youth and Media Culture's Homework Folder".
 - ASSIGNMENTS:** Contains a table with columns for Name, Action, Size, Type, and Last Modified.

Name	Action	Size	Type	Last Modified
Assignment 1 due May 15 New	view details	28427 bytes	text/html	May 10 2003 08:58
Assignment 2 New	view details	14258 bytes	application/rtf	May 23 2003 12:56
Introductory Assignment (May 5-9) New	view details	29373 bytes	text/html	May 01 2003 19:33
- Right Column:**
 - CLASS TECHNICAL SUPPORT:** Includes a message: "This is the place to post any problems you might have with the system. You are the first class to use this system and we are most likely going to have problems, so don't be shy... post here."
 - CHAT INFORMATION:** Lists "Instant Messenger Registration", "Quick Buddy Chat", and "AOL Software (optional)".
 - STAFF LIST:** Lists "Professors" (Dorothea Fischer-Hornung) and "Teaching Assistants" (Carl Robert Blesius, Fabian Lorenzen, Susanne Porc). It also lists "Course Assistants" (No Course Assistants) and a "Member List" link.
 - CLASS PRESENTATIONS:** Includes a link to "A list of all visible presentations on this system."
 - FREQUENTLY ASKED QUESTIONS (FAQS):** Lists questions such as "How can I get started?", "What do I see when I log in?", "What are the navigation items at the top and the bottom of My Space?", "What are the features of our virtual .LRN classroom?", "Can I break anything while I am surfing within the course site?", and "How do I upload files, images, and URLs to share with other class members?".
 - SCHEDULE:** Shows "No Items".
 - NEWS:** Shows "No News".

The bottom of the page shows navigation links: "Class Home", "Calendar", "File Storage", and "Administer".

Ilias

Ilias started in 1997 at the University of Cologne and was released as open source software in 2000. Today, Ilias



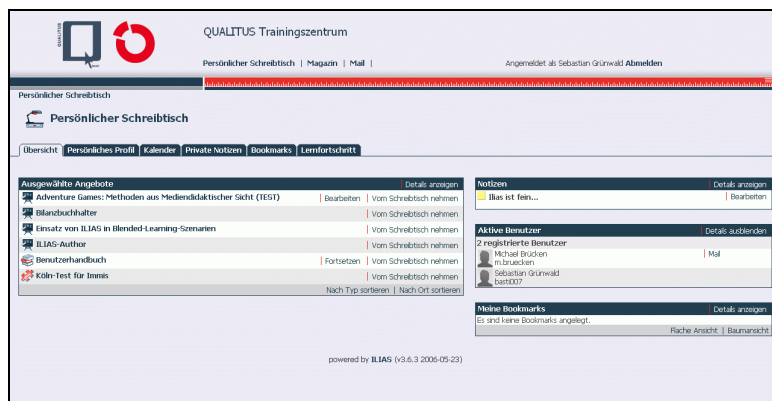
dominates the German university market: “Vorsprung durch technik”, as they say!

There are popular support forums for both users and developers. While the

documentation is good, there is room for improvement. The project is co-ordinated

by a team from University of Cologne and International Relations and Security Network (ISN), which uses Ilias for its PfP LMS, as used by NATO.

Ilias also has a ‘Co-operation Network’ of 15 partners, mostly German, French and Swiss educational institutions, as well as Novell. There are six official Support Partners offering hosting, development, technical support, consultancy and integration services and there is an annual Ilias International Conference.



We have noted that the main reason Ilias gains the top spot in many of the markets we looked at is its support for competency profiling, a feature lacking in all other open source LMSs. Competencies in Ilias are not named as such, but can be defined as ‘learning objectives’. A learning objective can include pre-tests for skills gap analysis, and the administrator can set it up so that an assessment must be passed or certain learning objects completed in order to accomplish the learning objective. In this way, a set of learning objectives can be set up for each job role in an organisation.

Were it not for the 'learning objectives' feature then Ilias would not be in such a strong position as the interface design is not as clean and slick as some of the others, and its feature set is not so advanced.

Moodle

Moodle emerged in 1999 from the Australian higher education community. Much of its rise to fame has been



in the last two years, and as of September 2007 there were 69

Moodle installations with 20,000 or more users. The Moodle Trust hires core programmers and covers project expenses.

Moodle is perceived as high value in the education community, particularly higher education and further education. For years a favourite in academia, two key announcements in 2006 drew the attention of the wider e-learning world.

The UK government-funded OSS Watch reported that Moodle had become the LMS of choice for 56% of UK FE institutions.

The Open University publicised its £5.6m OpenLearn initiative, making 900 hours of e-learning available to their students on a customised Moodle platform.

It is more recently making an impact in the corporate sector. However, there are two problems which will hinder the rapid uptake it has enjoyed in education: lack of competency development features and poor user interface design.

Moodle simply does not look polished enough to compete in a market where the incumbent offerings are so much visually richer. Moodle is designed to be re-skinned easily and, while colour schemes can be changed quickly, our own experience shows that more serious design changes are time-consuming. Epic's

Moodle theme for Lonsdale's Essentials Online product shows the sort of things that are possible fairly quickly.



Sakai

In a JISC funded report 'Sakai: A case study in sustainability', OSS Watch concluded: "Sakai's choice of



an open BSD-style licence, free access to the software, community discussions for anyone and equal rights for any member of the

foundation—large or small, educational or commercial—have proven a magnet for rapidly developing both enterprise-scale software and a global community."

Sakai began life with a grant from the Mellon Foundation. Five founding institutions merged elements of their existing home-brew course management systems, the largest contribution coming from University of Michigan followed by Indiana University, MIT, Stanford University and the Open Knowledge Initiative. Big business moved in during 2005 as IBM, Sun and Unisys all came on board. Fast forward to 2007 and there are now over 100 Sakai Partners, each contributing in the region of £5,000 annually to the Sakai Foundation.



The Foundation is a non-profit organisation that coordinates Sakai's development and community to ensure its long term interests are served. Strategy is formulated by a Board of Directors elected by the Sakai Partners and the Foundation employs a small team who manage day to day business and provide project management, quality assurance, release planning and conference organising. Twice yearly Sakai conferences are held which provide an opportunity to share knowledge and experiences face to face.

Getting off on the right foot

We have investigated the use of open source LMS products in five markets where we believe Open Source will make a major impact. We see the same names coming up in the top five for each sector: Atutor, dotLRN, Ilias, Moodle and Sakai. They may have stolen a lead on 45 other open source LMSs but that does not mean the others won't catch up – this is a fast moving market typified by fast innovation and rapid release processes. Any project which loses focus or momentum will lose ground quickly.

We believe that innovation needs to happen particularly in the areas of competency management and lesson planning. Most of the markets we investigated have one clear open source leader, but if the open source LMSs embrace these features then even more organisations will be presented with potential substitutes to commercial LMSs as well as having improved choice among the open source offerings.

One of our aims in writing this white paper was to deconstruct the myth that we keep hearing time and again: "Open source LMS = Moodle". At Epic, we want to support our customers by offering accurate and timely advice and expertise about the LMS that is best suited to their needs. After all, it's in Epic's long term interests that our customers' learning programmes get off on the right foot. We believe that Moodle is not a one-size-fits-all solution and that in some situations you'll be better off with Sakai, dotLRN, Ilias or ATutor. When the likes of NATO is using Ilias and Yale is running Sakai, this is certainly not the one horse race that many service providers would have you believe.

We hope that we have given you some real insight into the open source LMS market and which open source LMS may be worth trialling within your own organisation. If you are thinking about evaluating or implementing a new learning platform then we invite you to draw on Epic's

considerable expertise and experience in this area. Our services include:

- **technical consulting** and strategy for your learning platform implementation
- **learning platform customisation** using our skills and experience as a major development agency
- **support desk services** to meet the needs of end-users or administrators for your learning platform or content
- **hosting service** that offers a secure, reliable option should you wish to have your learning platform hosted externally
- **learning platform migration** to either Epic's non-open source Arena learning portal or our open source learning platform solutions
- **compliance testing to Accessibility and e-government web guidelines** using EpiCentre, Epic's software testing business
- **complementary learning services** including bespoke e-learning, generic e-learning, video production, audio/podcast production, and workshops or workbooks as part of a blended approach

Appendix A: Active open source LMS projects

The following list comprises open source LMSs that are under active development and have released stable, English language versions.

If you know about a project that you think should be on this list then please email us at marketing@epic.co.uk

- a-LMS
- AnaXagora
- Answers
- ATutor
- Avatal Learn Station
- AvieOnline
- Bazaar
- Bodington
- Brihaspati
- Claroline
- CommSy
- COSE
- CourseWork
- Didactor
- Docebo
- Dokeos
- dotLRN
- DotNetSCORM
- DrupalEd
- EIFFE-L
- Eledge
- eStudy
- ForeL
- Helo
- Ilias
- Interact
- JLI!
- KEWL
- KEWL.NextGen
- LogiCampus
- LON-CAPA
- Maestra
- Manhattan
- metacoon
- Moodle
- OLAT
- Open Elms
- Open LMS
- Open Learning Repository
- Open Learning System
- OpenLMS
- OSLearning
- Papermark
- Sakai
- Segue
- Shishya
- The Rock LMS
- Tiny LMS
- Uni Open Platform
- Virtucoll

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Understand Open Source Ecosystems, 55thinking, 2007, [link](#)

Other Epic e-learning white papers

'Excellent stuff...'

Virgin V.Shop

'Well structured and easy to follow...'

CGNU

'Extremely well written... nice to see a company looking deeply at the issues.'

University of Sussex

General

- The markets for e-learning
- Research into e-learning
- E-learning: return on investment
- Organisational benefits of e-learning
- Assessment and e-learning
- Twenty top 10s in e-learning
- Defence and e-learning
- Softskills and e-learning
- Healthcare and e-learning

Blended Learning

- Blended learning
- Blended learning in practice

Innovation

- Simulations and e-learning
- Interactive TV and e-learning
- Games and e-learning
- The Napsterisation of learning (Peer-to-Peer)
- Customer e-learning
- M-learning
- iPod learning
- Informal learning

Education

- Higher education and e-learning
- Personalisation and e-learning

Psychology

- Media and media mix in e-learning
- The psychology of e-learning
- Motivation in e-learning

Definition

- Learning design for e-learning
- Pedagogy and e-learning
- Collaboration in e-learning
- Induction and e-learning

Development

- Open Source and e-learning
- Reusable learning objects
- Learning Objects
- Usability in e-learning
- Standards in e-learning
- Accessibility and e-learning
- Testing for e-learning
- Localisation and e-learning

Delivery

- Content and context in e-learning
- Learning management systems
- Knowledge management systems
- Evaluation and e-learning
- Change Management and e-learning
- E-tutoring

Epic portfolio reports

- Filling the leadership gap

Epic survey reports

- Epic Survey 2003 - The future of e-learning

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Epic Arena

Arena is Epic's non-open source, simple and scalable blended learning portal, a reliable solution that can be rapidly deployed. Arena provides a SCORM compliant, community-driven learning portal rather than a fully featured LMS.

Arena is a learner-centric portal that:

- gives access to a range of online and offline knowledge resources
- blends e-learning and knowledge management
- enables publishing of relevant news, articles, links and events
- has robust learner management functionality
- launches and tracks e-learning content
- is fully customisable to your desired branding

