LAMP White Paper

Selecting a Learning Management System:

Open Source vs. Commercial

first in a series of three

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Making a Choice

When it comes to selecting a Learning Management System, institutions have choices. The purpose of this series of three white papers is to help clarify those choices and to guide institutions into thinking about the choice that is best for their situation. This first white paper deals with the choice between commercial Learning Management Systems such as Blackboard, ANGEL and others and open source competitors. The second white paper explores the differences between the two major open source players: Sakai and Moodle. Finally, the third white paper deals with the choices available for hosting an open source product such as Sakai using cloud computing or on-site hosting.

This first white paper focuses on a fundamental question each institution must answer for itself when contemplating the implementation of a Learning Management System: should we go with a commercial product with an established company behind it, or dare we consider the strange world of open source software where no one seems to be in charge or accountable?

Let's start with three commonly held beliefs that, when explored more thoroughly, turn out to be myths.

Myth #1: You Get What You Pay For

A Learning Management System sits at the very core of the educational mission for an institution of learning. This software will support, in a very significant way, the education of students. So the selection of the right system is of vital importance. Conventional wisdom tells us that we get what we pay for. Therefore, the more expensive a Learning Management System is, the better it is, right?

Well, maybe. The license fee for a commercial product such as Blackboard routinely runs well into six figures annually for small to medium size colleges, and much more for larger universities. The license fee for open source software is … zero. An early reaction to the consideration of open source software is that a free system just can't be as good as an expensive commercial product.

In the early 2000s, the Appalachian College Association was running a project funded by the Andrew W. Mellon Foundation to provide Learning Management System software to small colleges in the Central Appalachian mountains.[1] The software was WebCT and the license fee for the software, paid for by the Mellon foundation, was $182,500 per year. When funding for the project came to an end in 2005, schools that were using the software had to make a decision: should they continue funding the project on their own, or consider alternatives. In a challenging meeting between colleges participating in the project that took place in October of 2005, the schools hashed through their alternatives. There were certainly strong and vocal proponents of continuing to use WebCT at that meeting who called it the "Cadillac" system and argued that choosing anything less than the best would ultimately undermine teaching and learning at the colleges and shortchange the students being served.

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[1] The WebCT project, the October 2005 meeting of project participants and the subsequent software "test drive" were all overseen by the author.

The group was also pragmatic, however, recognizing the huge difference in price between the preferred choice of WebCT and an open source product. After two and a half hours of heated debate, the group agreed to do a "test drive" of three products. Clearly the first product to be considered was WebCT. As an alternative commercial product, the group chose to consider ANGEL which, at the time, was considerably less expensive than WebCT. Almost as an afterthought, but pushed by some of the less well-funded colleges in the project, the group also agreed to consider an open source product, Sakai. A group of 70 faculty from across the participating institutions, representing a variety of disciplines and using a variety of pedagogical approaches, were chosen to conduct the test drives of each of the three products: WebCT, ANGEL and Sakai. A rubric was developed covering a broad range of dimensions, from user interface and ease of use, to robustness of detailed features such as testing and grade-books. Through arrangements with the vendors, the faculty were given accounts in all three products, a copy of the rubric, and two months in which to explore each product and turn in their findings and recommendations.

If you get what you pay for, then the most expensive product should have easily won the test drive. But that was not the case. WebCT finished dead last of the three products. Faculty found its user interface to be "clunky" and "hard to use." Even the school that had called it the "Cadillac" system recanted and said it had found a system it liked even better.

How an open source product like Sakai could be even better than the most expensive system available at the time goes to the very heart of this white paper. How is it possible that a product that one doesn't have to pay a license fee for can be superior to one that must be paid for? Doesn't that money go for important things like software development and support? Doesn't the fact that the license fee is paying for an organization, one that we can hold accountable for the quality of its software, matter?

That leads us to Myth #2.

Myth #2: You Need Someone to Hold Accountable

Even if it is accepted that open source software might be as good as commercial software, most people will want to know who they will call if there is a problem. This concern often gets expressed in some form of the argument, "There has to be someone or some organization we can hold accountable if things go wrong." The perception is that open source software is developed by a loose, even shadowy network of developers "out there" who can't be pinned down and made to fix the inevitable problems and bugs of a large and complex software system.

The argument sounds reasonable, but it turns out it is a myth. An example[2] may help. We were conducting a Sakai workshop for faculty. One of the presenters had forgotten to silence his cell phone and it rang during his presentation. Glancing at the number on the screen, the presenter realized that the call was from the head of the organization where the Sakai software was being hosted and which was providing support for the system. Thinking that the call might be

[2] This workshop took place May 22 through 25, 2006 on the campus of Kentucky Christian University during a workshop conducted by Tim Wiblin and the author. It was the author's cell phone that rang. Dr. Scott Siddall, CEO of The Longsight Group, was on the other end of the call.

important, the presenter explained to the group who the call was from and proceeded to answer the call in full view of the audience. The conversation went something like this:

"Hi Martin. I know you're conducting Sakai training this week. But we were wondering if you were having any problems with Sakai right now."

"No," replied the presenter. "At least I don't think so."

But as this statement was being made, one of the workshop participants in the back of the room announced, to no one in particular, "Hey, my computer is locked up!"

The presenter watched in horror as another participant, followed by another and another, made the same grim discovery.

"Uh, I didn't think we had a problem. But maybe we do …" said the presenter into his phone.

"OK," said his caller. "The Sakai development community has discovered a scaling problem with one of the databases. It doesn't appear until many people are doing a simultaneous activity on the data. But then the database frequently locks up. It occurred to us that, while you were doing training, you might be creating the very scenario with many people doing exactly the same thing at the same time that would force the issue to surface."

"That's exactly what we appear to experiencing. It just started while we were on this call."

"It sounds like you've found the problem the Sakai community has identified. Would you be willing to take a break for about 15 minutes? The developer community has developed a fix for the problem. If you can give us 15 minutes, we'll get it installed for you and you should be able to proceed."

"Sure. We could do that."

And that is exactly what happened: the fix for the problem developed by the Sakai community was installed and the training continued without a hitch.

Have you ever had a similar experience, one that even came close, from a commercial software vendor? Very few people are likely to have a similar experience from a commercial vendor, which is the reason is why the idea of accountability is a myth. Commercial software vendors allocate a budget to software development and bug fixing. Those budgetary decisions are made by a handful of people whose primary concern is the company's profitability. They try, to the best of their ability, to allocate funds in ways that will satisfy customers, of course, but that will limit expenses as well.

Contrast this familiar commercial approach with that of the open source community: the system is developed by people who use the software. *Their primary concern is the software itself.* In fact, more than that, their reputation among their

peers is on the line: if the software has a bug, it affects the esteem in which the developer is held by his or her peers. There simply is no equivalent motivation in the commercial world.

While it may appear that writing a large check to a software vendor gives one leverage, that accountability pales in comparison to the accountability open source developers place on themselves by the very nature of the environment in which they operate.

Myth #3: Leverage is Important

Consumers feel that they have to have some leverage over a vendor in order to have a high quality product. That leverage is typically what they pay for the software and the implied threat that they will take their business elsewhere. Since the license for open source software is free, the thinking goes, there is no leverage.

In late 2005, Blackboard, one of the largest commercial players in the Learning Management Space, announced its plans to merge (it later turned out to be an acquisition) with WebCT.[3] At the Educause conference that year in Orlando, Florida, the President and CEO of Blackboard, Michael Chasen, and the President and CEO of WebCT, Carol Vallone, held a series of joint "town hall meetings" to discuss the merger with those who might be interested. The events were attended by hundreds of concerned faculty and staffs, including the author of this white paper, of many of the companies' customers. The tone of the meetings was tense; the merger was not being well received. As the CEOs took questions from the audience, a young woman with a sweet Southern accent put into words what, judging from the applause her question got, was on everyone's mind: "When Blackboard wants to raise the price we have to pay, I can always threaten to leave Blackboard and go with WebCT. Now that you are both going to be the same company, I've lost all my leverage. I'm afraid that prices are just going to spiral up and up."

The leverage of being able to play off one software vendor against another is seen as critical when one is looking through the lens of commercially available software. With open source, that leverage evaporates, and schools contemplating the implementation of a Learning Management System can easily feel empty-handed. How can open source be a good idea if there is no leverage?

The acquisition of WebCT by Blackboard turned out to have just been the beginning. Based on a patent[4] awarded to Blackboard on January 17, 2006, Blackboard sued another commercial Learning Management System competitor, Desire2Learn, for patent infringement.[5] The resulting court battle (in which Blackboard was awarded $3.1 million) did serious damage to Desire2Learn, even though Blackboard's patent was later overturned by the U. S. Patent Office.

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[3] See Blackboard press release at http://investor.blackboard.com/phoenix.zhtml?c=177018&p=irol-newsArticle&ID=767025.

[4]http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=6,988,138.PN.&OS=PN/6,988,138&RS=PN/6,988,138

[5] http://www.desire2learn.com/patentinfo

Later, in 2009, Blackboard acquired ANGEL Learning, its second largest competitor after WebCT.[6] As Desire2Learn CEO John Baker noted, "We don't want to allow Blackboard to have a monopoly because you know what happens with monopolies. One thing that they've been trying to do is raise pricing on clients and to control the marketplace."[7]

During this time of upheaval customers of commercial products were learning a hard lesson. The leverage they thought they had could instantly evaporate. The accountability they thought they could require of their vendor was rendered null and void by board room fiat. Customers of WebCT, Desire2Learn and ANGEL found their product road map suddenly coming to a dead end. Blackboard customers saw competition evaporating and prices escalating at a pace of 25% to 35% per year.[8]

The manageable costs and perceived safety and security of commercial software proved to be ephemeral.

A Community of Users

Institutions that are not skilled at thinking and acting collaboratively will be justifiably wary of open source software. While they may talk about the value of collaboration, few are ready to put it into practice. Yet the precise advantage of open software is that it offers a community of organizations, developers, and users who have mutual concern about the software they build and utilize. Open source software, at its best, is a true partnership that extends around the world. As long as an institution thinks in competitive terms — us vs. them, our institution against the software vendor — open source software won't make sense. But the moment an institution accepts the notion of mutual accountability and realizes that larger purposes (e.g., learning, making a difference in the world) are best fulfilled when institutions collaborate, then the use of a high quality, well resourced, cost effective, open source software makes sense.

Dee Hock coined the term "chaordic organization" to describe what he saw in the rapid growth of Visa and other organizations that were at once "chaotic" and "ordered."[9] An open source software development community represents the evolution of a similarly complex, self-organizing, networked organization. Because the motivation (the production of great software that is being used by the developers themselves) is consistent, and because the communication between developers is facilitated by Internet based tools, it is possible, even desirable, that many resources from around the world be engaged in the development of software. Instead of the organization and control being concentrated in the hands of a very few senior executives at a commercial software development firm, the organization in the open source world is organic and the control is intrinsic. The potential, and the real results, are tangibly better.

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[6] Joint e-mail sent to ANGEL customers by Christopher Clapp and Michael Chasen, May 6, 2009.

7 http://www.campustechnology.com/articles/59935_9

[8] Blackboard does not publish its pricing structure. This increase is based on anecdotal evidence provided to the author by actual Blackboard customers.

[9] See Dee Hock's book, One from Many: Visa and the Rise of the Chaordic Organization, Berrett-Koehler Publishers, 2005.

Because the developers of open source systems such as Sakai work for institutions that use the software, the incentive to produce well-designed —and, more importantly, useful and usable — software is obvious. Institutions contemplating the selection of an open source Learning Management System such as Sakai need not be troubled by commercial software paradigms. The myths have been dispelled and the savings are at hand.

Further, at least for Sakai, there is the important existence of the Sakai Foundation. This small, funded group of less than half a dozen people, serve as the communications hub and guiding hand for the software development efforts going on around the globe. The Sakai Foundation serves as a kind of central nervous system for the Sakai community, not directing or managing, but helping developers stay in touch with each other and convening meetings and conferences to facilitate coordinated work on various aspects of the product.[10]

Open Source by Definition?

Just as there are challenges in the commercial software space, there are also pitfalls in the open source world. Just because a software system is declared to be "open source" does not make it an automatic good choice.

The key variable that must be explored when selecting an open source software system is the quality of the community behind the software. In 2010, for example, Instructure declared its Canvas learning management product to be open source by releasing the source code to the pubic.[11] But such a move does not a community make. The source code may, by definition, now be open, but a community of developers that can even come close to rivaling the community of developers behind products like Sakai has yet to materialize.

When selecting an open source product, there are many considerations. Very high on the list must be the quality of the community that develops the software. Since, presumably, some of the motivations behind going to an open source product are quality and cost, it is important to consider how the development community affects both parameters. The larger and more robust the community, the better the opportunities for new features, better interfaces, and worry-free software. The deeper the "bench strength" of the community, the better the opportunities for reducing costs by being able to tap into a large pool of potential support and development resources.

Institutions contemplating the implementation of open source software must conduct their due diligence research, just as they would if they were looking at commercial software. The only difference is that the organization under scrutiny is not a vendor company, but a development and support community. It is arguably even more important to look at the service and support available than it is to look at the software itself.

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[10] See the second white paper in this series, "Sakai vs. Moodle," for more on this important distinctive of Sakai.

[11] http://thejournal.com/articles/2011/02/01/new-lms-from-instructure-goes-open-source.aspx

An Encyclopedic Example

If you're still not convinced that open source is a viable, even superior choice, take a little trip down memory lane. Think back to 1992 and think about encyclopedias.

Let's say you were given a two choices about what kind of encyclopedia you will implement for your institution. One choice is a commercial product. The company behind it is well known and well respected: Microsoft. Microsoft has funded the creation of their encyclopedia well and is paying the highly-qualified writers of its articles for their work. The encyclopedia will be distributed on CD-ROM and later via the World Wide Web for a fee or bundled with other Microsoft products.

The second choice is an open source product. It will be created by tens of thousands of people who will volunteer to write articles. Many people will devote ten to thirty hours per week writing articles and no one will be paid a dime for what they do. These hobbyists will organize and develop the encyclopedia on line and will make it available, for free, to anyone who wants to use it.

Now, if you can think back to 1992, not having the benefit of hindsight, which of these two choices would you have honestly made? It is doubtful that anyone would have selected the open source encyclopedia. Sure, it might have been possible to conceive of a few people working on a small encyclopedia together. But to think that such a product would ever be able to go head-to-head with a Microsoft offering? Highly unlikely!

But that is exactly what happened. In 1993, Microsoft released the first version of its Encarta program. At its peak, Encarta had more than 62,000 entries in at least eight different languages. It seemed like a good idea at the time.

And then along came Wikipedia. Wikipedia is a completely voluntary effort, open source in every sense of the phrase. It has approximately 100,000 regularly active contributors and, as of August 2009, included more than three million articles. There are editions of Wikipedia in 283 different languages.[12] Wikipedia has had its detractors, of course, mostly around the accuracy of its entries. But a study by Nature International Weekly Journal of Science found that "Wikipedia comes close to Britannica in terms of accuracy of its science entries."[13]

In 2009, Microsoft announced it was discontinuing Encarta and the last version was taken off line by the end of that year.[14]

Most people reading this white paper will have used Wikipedia; many will have used it frequently. Never underestimate the power of motivated, unpaid people to do good work and create great products. The same can be said of open source Learning Management Systems.

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[12] http://en.wikipedia.org/wiki/Wikipedia

[13] http://www.nature.com/nature/journal/v438/n7070/full/438900a.html

[14] http://en.wikipedia.org/wiki/Encarta

Conclusions

Open source Learning Management Systems are not only a viable alternative, they are a better choice for institutions wishing to limit expenditures and yet ensure a quality product to support teaching and learning. Schools making the move to open source will be joining institutions like Stanford (one of the original schools that began working on the development of Sakai), Duke (in 2012, leaving Blackboard to go to Sakai), and the University of South Africa (the largest implementation of Sakai with classes containing as many as 20,000 students).[15] Our own LAMP consortium has been very successful using Sakai and other open source products to support the missions of our member institutions.

Schools which choose an open source Learning Management System such as Sakai can do so with full confidence in the quality of the software and of the community behind it.

About Us

LAMP[16] (the Learning Asset Management Project) is a unique consortium of colleges and universities that share a single instance of Sakai. We boast over 12,000 active users and have been active since 2006. We are self-funded; our membership dues cover our costs for each year. We offer not only Sakai, but faculty development workshops to our members, tier 1 and tier 2 support, and additional software such as plagiarism detection software and live video conferencing systems.

In 2008 we won the Mellon Award for Technology Collaboration. In giving us the Award, the Committee noted that LAMP "has shown the higher education community that it is possible for institutions having limited resources to install, operate, and sustain even the most sophisticated software, provided that they work together to meet their common challenges."

A second consortium, the LikeBerea Consortium[17], mirrors the LAMP consortium in structure and purpose but focuses on member organizations which are Christian seminaries and missions organizations.

Martin Ramsay conceived the LAMP and LikeBerea consortia, brought them, with the help of many other colleagues, to fruition, and is now the Director of both consortia. He frequently writes and speaks about consortial collaboration and about Sakai, and invites those organizations interested in Sakai or in joining LAMP or LikeBerea to contact him at support@lampschools.org.

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[15] http://collab.sakaiproject.org/pipermail/sakai-user/2011-July/002143.html

[16] http://www.lampschools.org

[17] http://www.likeberea.org