

ACADEMIC TECHNOLOGY: WHERE ARE WE GOING, WHERE HAVE WE BEEN?

PROLOGUE

When we discuss academic technology these days, we tend to focus on two issues, accessibility and Learning Management Systems (LMS). In this essay I focus on the latter. At CSUN we have narrowed the meaning of LMS *inadvertently*. We think of LMS as a self-enclosed suite of digital files that occupy hardware the way water fills a glass. We reduce the definition further to an illustration, WebCT. Now, ask yourself, is this *inadvertent*? Or have we bought into the seduction of merchandise as solution because purveyors want us to buy the merchandise?

We need to think of learning management *systems* more objectively and more holistically. The term connotes the mutually dependent relations among software, hardware, middleware, network, and human support that enable users to access information and communicate remotely. An LMS is a delicate symbiosis. It cannot be fulfilled by one right purchase; it cannot be fixed by one technical correction.

With all this in mind, we can ask, ‘LMS, LMS . . . wherefore art thou?’ The question is hard to answer because our current LMSs are implicated in projects like accessibility and the creation of hybrid courses. And the future? We have to follow Alice down a rabbit hole to get the complete answer.

Nonetheless, familiar examples like Google, Yahoo, and Microsoft clue us about the future, even though or perhaps because they are emergent, successful commodity structures. So, I begin with this future, and then loop back to where we are and what we must do next at CSUN. In other words, scanning ahead lets us choose the effective path now.



FUTURE: WILL THE LMS DEVELOP THIS WAY?

For the near future, web entities like Google will:

1. Develop portals (a web page that opens up to subordinate pages and that authenticates users to access restricted data and resources) that allow users to invoke gadgets (a web-compatible and/or operating-system compatible series of codes that, through a non-technical, intuitive interface, allow users to perform functions that larger software packages overlook) and utilities in order to manage personal and professional documents and communications while seamlessly accessing public information. These portals or suites of utilities are so close to including the typical functionality of an LMS that some schools use them as such.
2. In this portal environment, users juxtapose gadgets from diverse sources; they rely, however, on a backbone that links a few gadgets that require institutional data, like grade books, to the information system of the university.

3. Each such suite effectively eliminates the need for clients to host software and dedicate campus resources to functions like storage, back-up processes, and under-utilized servers. In theory, this frees local resources; they can be re-purposed to needs like advanced training and/or the implementation of singular—not systemic—technologies.
4. Utilities and lockers, so to speak, hover in virtual space.
5. Accessible and usable from anywhere on the most basic webbed device, these systems thrive by people developing new tools that require of users no technical skills to install and maintain.
6. The new is mediated by the iteration of the old interfaces—plug and play, the desktop, the hotlink.
7. Server farms staffed by a proficient cadre further minimize the need for a local support staff that focuses solely on technical installation and calibration.
8. Clear, well-positioned explanations encourage users to try “helping” themselves.
9. Finally, the use of open standards enables users to connect local sources of data to the virtual suite, when it is secure to do so.
10. Despite the economies that I have suggested, the proliferation of gadgets and utilities layer platforms and networks. Inevitably they conflict, they complicate communication. So rarely is there sufficient staff to train newbies, disentangle the moderately experienced, and assist the virtual frontier types. Where to focus, and why?

THE PRESENT

If the future consists of thin client, virtual utilities on synchronized servers, seamless integration of these resources with local data, and self-help supported by clear documentation and familiar look and feel for new applications, then we are not there yet. On the one hand, concern for information security and the expense of creating code to link offsite platforms with channels in the CSUN portal limit what we venture to do. On the other hand, WebCT has not been stable in our environment, And its model of commerce—charge per user—is prohibitive as we grow. The alternative way of deriving revenue from traffic that passes commercials clashes with our belief that higher learning must remain above trade.

So, with the reliability of WebCT a question, WebCT and Blackboard undergoing corporate re-alignment, Google possibly at odds with accessibility and information security policies in the CSU, and Moodle—an open-source suite—attracting intense but limited interest, we began to analyze what we should do next—that is, two years hence, when our renewal with WebCT will be due.

'07-08: MOODLE
PILOT; LMS USER
SURVEY

'09-10: MIGRATION

'08-09: EVALUATE
LMS FOR ADOPTION

In '07-08 Academic Affairs [surveyed](#) LMS users to determine what they really used and wanted. A rather conservative portrait emerged. Most users valued

basic utilities like chat, blogs, and posts. They wanted access through the LMS to utilities like book orders and grades. They wanted to learn more about synchronous exchange and streaming media. But they did not see delays in implementing the last five items as an

absolute disaster. Many were hoping for the adoption of an LMS that had one major advantage: ease of use.

Almost simultaneously, the CSU floated an RFP for contracting LMS services across the system in two years. This effort clarified which vendors were working on accessibility and which valued service. WebCT did not score well; Moodle and several programs that have persistent but limited interest at CSUN passed muster.

As a result, we are now able to see how we would deal with the fact that our WebCT connection ends in two years:

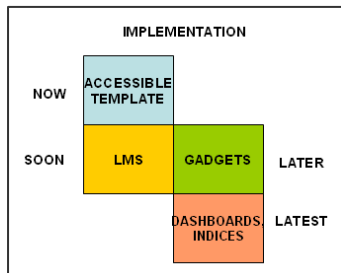
1. Consultation with committees suggested that we allow for two years, to bridge from here to there. Most of year one would be evaluation of LMS functionality. Most of year two would be spent on transition, if we changed platforms.
2. Essentially, we have to judge the relative merits of WebCT/Blackboard and Moodle—platforms with loyalty at CSUN. We know the preferred options from the LMS study; we have to apply them in this decision. Also, we must evaluate whether the platforms demand different degrees of support, both in personnel and infrastructure. David Levin is assembling a team of faculty and staff to complete the evaluation as soon as possible. Their recommendations will be reviewed by pertinent committees, Academic Resources, and me.
3. Ultimately, finances and operations will affect decisions about the LMSs that we can support. Right now, it appears that, in '10-11 and thereafter either WebCT/Blackboard or Moodle will be the platform that we support—that is, train for, purchase at the division level, and make accommodations for in the code of SOLAR, etc. To the extent to which other platforms mirror the characteristics of the selected LMS, they can be accommodated and not add significant cost.

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THE REST OF THE STORY

While to Moodle or not to Moodle, to WebCT or not to WebCT, is the question, there are subplots. They reflect people's diverse needs now, and they prepare for the post-LMS word of thin clients and virtual servers:

1. We continue to work on [accessible biographical and syllabus templates](#) for use outside of and/or complementary with an LMS. Such templates provide web presence for faculty who do not want to venture a whole "system." Users can gain some of the density of an LMS by embedding gadgets like blogs that do not require new scripts in the underlying code either of the template or the file and directory structure.



2. We will continue experimenting with the creation of gadgets/utilities that are agnostic about code and platform. We also will investigate dashboards that apply a common look and feel to applications and functions running in diverse programs. A dashboard in front of WebCT applications can integrate tools from other programs without a user knowing about the differences in the back-end. For instance, ExL at CSN embedded a link to Blackboard within a Google homepage; this encourages experimentation through adjacency.
3. Platforms will change. And the web multiplies the need for coherent approaches to conducting searches; for, the web itself is a virtual library that is dispersed over devices and platforms. Thus, we must develop both storage capacity and a common nomenclature for classifying virtual objects. In theory, a well-marked utility can feed an LMS automatically when the designer invokes the pre-existing content. Also, a stable public directory for virtual objects functions as an icon of order among flux, transferring point and click on hyperlinks (with changed referents) into coherent searches.
4. We can no longer spend without accountability. To be credible, we must measure and track the results of our investment in technology-based learning: Who benefits, and to what extent; how widespread is the use; how do we continue to justify our on-going support? We desperately need to identify and control server costs and, more generally the costs and energy consumption of our “system. Blithely, we distribute desktops and station without regard for energy consumption.
5. Finally, we must begin to plan for a brave new world. Sustainability and cost control of energy will affect not just the physical plant but the provisioning of knowledge. We will need to minimize our energy footprint; this points to virtualization of servers as a means to maximize capacity across an array. And sustainability and cost control imply the reduction of paper and the thinning of local devices. Reception and retrievability replace local inscription and storage.

WHY BOTHER?

Survival, in a word, is why we bother. But there are many layers to that word. History is punctuated by moments when we suddenly managed knowledge and dissemination differently than before. One thinks of the personification of reasoned inquiry in the classical dialogue, the inscription and collection of knowledge within the codex in the library, the sequencing and comprehensiveness of the encyclopedia, the reconstitution of dramatized knowledge in electronic media, and the virtualization of codex and media in the byte. We see, today, the world in a grain of sand and experience infinity in an hour.

Such compression and indexing organize expanding knowledge today. This reorganization cannot be escaped by institutions like universities that inhale and exhale knowledge. The seeming inexorability of these changes demands that we think critically, however. When we do so, we see that the inexorable is not inevitable; rather, it is contingent on the amassing of market power into a trend.

Corporations that benefit from the trend measure success by the extent to which the production of discrete devices fills all personal and professional needs of current and

especially projected consumers. Like Dracula, the producers mesmerize consumers with utopian promises in order to extract, not blood, but currency.

Our task is to convert extraction into transfusion. What we pay for, must pay off measurably. Further, like these corporations and consumers, we value the compression and accelerated dissemination of knowledge that virtualization makes possible. But we must insist that the algorithms of transformation count on less polluted sources and uses of energy. Otherwise knowledge is power will be defeated by diminishing power for knowledge.

Work on these algorithms must begin here, now. Are we configured sustainably? Does our deployment of servers, distributed point of access, networks, devices, and support personnel reflect the most efficient and cleanest design? How would we know?

We must know how to know now. Environmental stewardship is the best guardian against the extinction of “knowledge management”. So, the question is, can we evolve purposefully as stewards? Or will we surrender to the illusion of inexorability? Will we permit our consumptive urges to empower the extraction of resources to a degree that endangers us irredeemably?