

## Designing a Review of the Learning Management System

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This paper outlines the design of a review of the Learning Management System (LMS) at an Australian Go8 University. From the experience of other universities undergoing this process, a series of evaluation activities were designed to ensure stakeholder engagement and user quality of experience rather than the traditional functionality comparison. The focus of the paper is to describe the methodology used with a focus on potentially transferrable learnings that other higher education institutions can use in their approach to evaluating their learning management systems.

Keywords: LMS review, evaluation, learning management system review, learning management system selection

### Introduction

The Learning Management system (LMS) is one of the largest technology investments made by a higher education institution. While the ubiquitous uptake of the LMS across the education sector has provided for additional options in relation to blended and flexible learning there are many commentators that have argued the system reduces and limits teaching and learning diversity, leading to potential problems where the LMS is not selected based on the primary mission of most universities, that of education. For instance, Siemens (2006) laments that “the value of a LMS is enconced in language of management and control” rather than learning (p4). Certainly the selection of a LMS is often focussed on management aspects including tools/ functions and cost e.g. (Kasim & Khalid, 2016). In some cases, for example (Redish A, C, Bates S, & Burns J, 2016), this focus on functionality and cost means user needs are not adequately considered; resulting in “widespread dissatisfaction with the system, in terms of availability, response time and ease of use” (p5). In this paper we discuss how one university reviewed its LMS with a focus on educational value in an attempt to deal with these issues.

### Context

The University of Adelaide has used the same Learning Management system (LMS) for 14 years. As part of a regular review schedule identified in its Learning Technologies Roadmap, the choice of LMS was reviewed in 2015. While LMS satisfaction surveys indicated some increase in student and staff satisfaction with incremental enhancements to the existing LMS, they also highlighted issues (University of Adelaide, 2015) and expectations that continued to be unmet. Internal student and staff surveys also provided strong indicators that there was a level of dissatisfaction with the LMS. In addition, a new strategic plan recognised that some substantial change would be required in progressing technological advancements. This combination of factors laid the groundwork for a more in depth analysis of the options for Learning Management Systems for the University and offered the opportunity for a genuinely consultative and open-ended review process.

### A Review of LMS Reviews

This was the first time that the University of Adelaide had conducted a full review of their learning management system. A search for models that other institutions have used for reviewing their systems revealed that the literature documenting the process of selecting a LMS for universities is not broadly reported, despite some university LMS project websites documenting processes incidental to outcomes (for example, a blog post at Dalhousie University (ln266505, 2015), a strategic review from California State University (LMS Strategic Review Committee 2005) and a similar document from the Queensland University of Technology (eLearning Services, 2013).

The majority of reported reviews, as Hanson & Robson (2003, p. 2) and Coates, James & Baldwin (2005) noted, approach the LMS Review process as an exercise in defining requirements and evaluating products based on their perceived ability to meet them. There is often a strong financial context to these, especially related to licence fees. There are several issues with this approach.

The first issue with a functionality and cost approach to selecting a LMS review is that once requirements are defined, it becomes clear that they are not of equal value, nor do they meet the overall goal to an equal extent. As Winer et al (2005) from McGill University note, weighting these requirements within a matrix leads to additional complexity but not necessarily clearer decision-making. They classified the limitations with attempting this type of LMS functionality matrix decision making as:

1. Arithmetic (central tendency is not a good indicator when outliers may be very important and deal breakers can be hidden);
2. Qualitative (numbers mask qualitative differences, and not all functions are identical. Differences are not necessarily better or worse); and
3. Meaningful conclusions (what does a point score difference really mean?).

Their conclusion was to first eliminate products with deal-breakers, then evaluate the remaining alternatives via a set of use cases, which they classified as technical, business and pedagogical. Essentially, where the matrix approach concentrates on “does this functionality exist and how does it rate?” the use-case approach asks “what is the quality of experience?”.

Secondly, licence fees and even total cost of ownership calculations do not necessarily represent the value of a LMS to the university. In the most obvious example, reports from educational institutions using open-source and licence-free LMS software such as Moodle which indicate that similar overall costs to vendor-hosted options are incurred. This is often due to the development expectations of the community and the need to navigate upgrades across an open-source community of developers. While cost is relatively easy to calculate, value is difficult to quantify, but potentially significantly more important for the institution as a whole. For example, how can institutions classify the reputational benefit of a modern, student-focussed LMS, or the impact of enhanced usability on uptake among teaching staff? When the emphasis is on cost, the bigger picture of the potential contribution of the LMS to achieving the goals of the organisation is diminished. MacFadyen and Dawson (2012) observed that concern with the “ease of migration” and thus its cost, dominated decision-making in selecting a new LMS, overshadowing data on current LMS use patterns and their relationship to student learning outcomes (p159).

Thirdly, functionality and cost might be congruent with the “management” aspects of a learning management system, but they have very little to do with “learning”. MacFadyen and Dawson (2012) observed that LMS Review decision committees can result in senior academics “assessing the degree to which any change will burden themselves and their colleagues with the need to learn how to use complex new tools, and/or the need to change their teaching habits and practices, without offering any appreciable advantage or reward” (p160). Similarly, the involvement of Information Technology managers, who may have a smaller investment in student learning outcomes, focuses “proposals for new technology innovations from the perspective of workload and technical compatibility with existing systems” (p160). The absence of learners in the selection of their most-used University IT system seems incongruous, yet commonplace in many reviews. Benefits are often clearly focused on transfer of skills and content, integration with existing systems and reduced costs, all valuable aspects but lacking a student focus.

Although less commonly absent from LMS decision processes than students, teaching academics are not always central to LMS reviews either. As Coates, James, & Baldwin (2005) stated, “Decisions about university teaching and learning should not be restricted to checklist evaluations of technical and organisational factors... In particular, discussions about the adoption, implementation, use and review of LMS should involve ongoing iterative dialogue with the large and diverse group of academic stakeholders who are, and will increasingly be, affected by the systems.” (p33). Siemens, in his summary of LMS reviews, lists many reports where “the act and process of teaching and learning are largely ignored in the pursuit of functions, features, integration and a myriad of other organisational concerns” (Siemens, 2006, p. 14). As the primary users of LMS, students and staff should be considered key to the success of a LMS implementation, and as such, would be integral to change management approaches (Kotter & Schlesinger, 1979) or innovation diffusion theories (Rogers Everett, 1995).

It was concluded from the existing literature on LMS Reviews, that there were substantial weaknesses in the processes commonly used and reported, especially from an educational context. Thus the project team decided that:

- evaluating LMS functionality alone would not be sufficient to select a LMS;
- a quality of experience approach was necessary and use cases were a realistic tool to assess this aspect;
- the key stakeholders in learning: students and their teachers, needed to be involved in all aspects of the review and represented in the governance structures;
- a balance between short-term pain of migration, from a technical perspective (consideration of ease of migration) and longer-term gain for learning and teaching goals (recognising that stakeholders whose workload would be affected by any change may be fearful of workload impact of a change) was required;
- value to the organisation and affordability was important; cost comparisons were not.

## **LMS Review Framework**

As a review of the Learning Management System that would potentially involve all stakeholders, there was a need to ensure:

1. there were valid alternatives before we asked the community to spend their time and emotional energy considering a potential change;
2. there was going to be genuine engagement (i.e. no pre-determined outcome; reassurance that whichever choice surfaced would be accepted by senior management).

To ensure the end users of the LMS helped shape all aspects of the review and selection process, in addition to ensuring all faculties and undergraduate/ postgraduate students were represented on the project's reference group, faculty and student buy-out ensured two teaching academics and two students carried out some of the design and investigations as members of the project team.

In order to establish valid alternatives and a genuine engagement brief, it was decided that the first step should be to initiate a four month "light-touch" review first to determine if a full review of the LMS was required.

### **Stage 1: Light Touch**

The first phase of the project was designed to answer the question, "is it worthwhile for the University of Adelaide to fully investigate alternative LMS solutions given the different options which are currently available?" and if so, which systems should be investigate in greater detail.

This involved:

1. Articulating the University's high-level system capability requirements (learning, teaching, technical and vendor relationship) in light of the University's strategy, technical roadmaps as well as findings from the extensive academic staff and student consultations and data gathering in previous LMS enhancement and student experience projects.
2. Review of literature on processes and learnings from LMS Review
3. Conducting a brief marketplace scan to longlist the alternative LMS solutions
  - a. analysing market share trends
  - b. interviews with current users of those LMSs, broadly evaluating them against the high-level system capability requirements.
4. Recommending either a shortlist of LMS to proceed to a more detailed review phase or that the university continue with the current system and revisit in the next 3 yearly cycle.

Very deliberately, there was no vendor involvement at this stage, and information on the LMS was sourced from university users instead. During this stage, the following eleven criteria were used:

#### *Teaching and Learning*

1. Efficiently and effectively support blended learning approaches as well as teaching fully online subjects.
2. Efficiently and effectively support group work and collaboration in the teaching and learning process
3. Efficiently and effectively support sound and innovative eAssessment, as well as the management of the assessment lifecycle (including submission, eMarking, return)
4. Readily provide analytics/ reports and/or data to students, staff and business intelligence systems to support the University's goals
5. Provide the basis for effective communications between the University and staff and students

#### *Usability*

6. Have an interface and functionality which can be engaging and is easy and efficient to use
7. Run effectively on a variety of client side platforms

#### *Technology*

8. Be reliable and secure
9. Integrate reliably and effectively with the Student Information System(SIS) as appropriate
10. Integrate reliably and effectively with other University or third party content/tool providers

#### *Vendor Relationship*

11. Vendor/support community attributes which are conducive to a positive and lasting relationship

The second main activity during the “light touch” review was a scan of Australian and international trends with regards to LMS choice and market share. This activity included research and networking with other institutions and reviewing published reports, carried out via a survey of Australian Council of Open and Distance Education members and Blackboard User Group members in August 2015 along with interviews with current users of longlisted LMS to explore elements of the eleven high-level capabilities.

At the end of this stage three LMSs were identified as suitable for the University and the decision made to move into detailed review of these shortlisted systems.

## **Stage 2: In-Depth Review**

The objectives of this phase of the Project were to:

- collect data and evaluate the three shortlisted systems against the identified University of Adelaide requirements to ensure that the Project Board and Sponsors would have sufficient information in order to make a decision as to the best LMS into the future;
- ensure teaching and support staff and students were included in the evaluation process, and that they felt they had been sufficiently consulted in the decision- making.

Therefore, following the shortlisting from the “light-touch” review, the project team decided on the following structure for the in-depth review:

1. Establish benchmark of satisfaction - conduct an online survey to establish current satisfaction with Blackboard, designed to benchmark the status quo for future reference, and to establish the “appetite for change” among University staff and students. This would use some of the same questions from the past years so that trends could also be identified.
2. Develop future-looking “use cases” designed around the University’s strategy for the vendors to showcase how their system could meet these. A description of various strategic futuristic student and teacher scenarios would be developed and vendors allowed four weeks to implement these. <sup>12</sup>
3. A four week pilot – the three shortlisted LMS to be implemented within existing University infrastructure and opened up for review by all interested staff and students. The pilot courses should include the “use cases” developed by the vendor as well as an existing course shown for comparison across the three platforms.
4. A survey of visitors to the pilot environments to gauge student and staff satisfaction of the three LMS options. The survey should focus on

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<sup>12</sup> With thanks to colleagues at Auckland University of Technology for the idea.

5. Focus groups of staff and students to explore the three systems and to add qualitative data to the overall pool of information.
6. Development of detailed LMS requirements based on high level LMS capabilities so these can be reviewed in depth (again, with the intention to report outcomes in a discussion of the key differences rather than a rating against each).
7. At the end of the pilot/ review against capabilities, hold vendor demonstration and Q&A sessions
8. Conduct Transition Costs and Total Cost of Ownership estimation

Awareness-raising exercises were also designed for this phase, including School and Faculty information sessions, instructor walkthroughs, and project website and email updates.

## **Conclusion**

The LMS review used a process that was deliberately strategic and inclusive, focusing on aspects of the LMS that represented true value to a higher education institution rather than concentrating mainly on financial, functional and technical considerations. With a student and staff focus, this process was education driven encouraging staff to think of the LMS application in their day-to-day context, avoiding rating systems and gaining experiential data from other institutions' users as well as ensuring vendors participated in the process on terms the review was using rather than conventional sales pitches. Key areas of difference to other review processes were:

- Speaking to users from other Universities rather than vendor involvement;
- Involvement of staff and students including buy-out to ensure involvement on project team;
- Vendor involvement focused on specific project needs (addressing the future-looking use cases, answering questions from students and staff);
- A focus on capabilities and overall strategic value rather than a matrix of functionality;
- A focus on describing differences and similarities and avoidance of rating systems.

## **Acknowledgements**

Whilst there are many people involved in this project, Dr. David Green provided invaluable assistance in developing the Review approach.

## References

- Coates, H., James, R., & Baldwin, G. (2005). A critical examination of the effects of learning management systems on university teaching and learning. *Tertiary education and management*, 11, 19-36. <https://doi.org/10.1080/13583883.2005.9967137>
- eLearning Services. (2013). Review of QUT's Virtual Learning Environment (VLE): Final Report. QUT: QUT.
- Hanson, P., & Robson, R. (2003). An evaluation framework for course management technology. *Boulder, Colo. : EDUCAUSE Center for Applied Research, Research Bulletin*(14).
- Kasim, N. N. M., & Khalid, F. (2016). Choosing the Right Learning Management System (LMS) for the Higher Education Institution Context: A Systematic Review. *International Journal of Emerging Technologies in Learning (iJET)*, 11(06), 55-61. <https://doi.org/10.3991/ijet.v11i06.5644>
- Kotter, J. P., & Schlesinger, L. A. (1979). *Choosing strategies for change*: Harvard Business Review.
- LMS Strategic Review Committee (2005). Learning Management System (LMS) Strategic Review. A Next Generation Learning Management System for CSU, Chico CSU: CSU, Chico.
- ln266505. (2015). Report-on-the-learning-management-system-lms-review/. Retrieved from <https://blogs.dal.ca/lmsreview/2015/03/12/report-on-the-learning-management-system-lms-review/>
- Macfadyen, L. P., & Dawson, S. (2012). Numbers Are Not Enough. Why e-Learning Analytics Failed to Inform an Institutional Strategic Plan. *Educational Technology & Society*, 15(3), 149-163.
- Redish A, C, M., Bates S, & Burns J. (2016). Next Generation Digital Learning Ecosystem. University of British Columbia.
- Rogers Everett, M. (1995). Diffusion of innovations. *New York*, 12.
- Siemens, G. (2006). Learning or management system? A review of learning management system reviews. *Learning Technologies Centre*.
- University of Adelaide. (2015). LMS Satisfaction Survey 2015.
- Winer L, Finkelstein A, Deutch M, & Masi A. (2005). *The Matrix Transformed: Achieving Better Focus and Insight in Learning Management System Selection*. Paper presented at the Educause, Orlando, Florida. <http://net.educause.edu/ir/library/pdf/EDU05197.pdf>

**Please cite as:** Heathcote, L. & Palmer, E. (2016). Designing of a review of the Learning Management System. In S. Barker, S. Dawson, A. Pardo, & C. Colvin (Eds.), *Show Me The Learning. Proceedings ASCILITE 2016 Adelaide* (pp. 261-266). <https://doi.org/10.14742/apubs.2016.858>

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