

Finally, a free lunch: The benefits of an open source VLE

Introduction

In 2001-2 the University of Oxford undertook a lengthy procurement process for a VLE system in the face of growing demand from academic staff. The result was to choose the open source product – currently termed Bodington (www.bodington.org) – and developed at the University of Leeds. This brief report explains the benefits (in terms of cost and functionality) experienced by Oxford so far with reference to an open source/open standard solution, and in particular Bodington (www.bodington.org).

Why did we choose Bodington?

At the time we looked at a range of VLE systems, mainly commercial ones, but also some open source products. We drew up a list of requirements and invited presentations and lengthy observations of products, including canvassing opinions from institutions that were currently using them. Surprisingly the licence cost, at the time, was not discussed. It was agreed that the choice would be made on the merits of the system alone and then the cost would be looked at.

Bodington was chosen for a variety of reasons:

- it was simple to use, both for navigation and for content creation
- it had a fine-grained access control for all areas within the system that could be based upon existing institutional structures
- each area and resource within the system had a unique URL and thus could be referenced directly from external sites (or within the system itself)
- it had a default of making material open and did not mandate access based on course registration (particularly useful in a University that promotes joint honours and open access to material across the institution)
- it was proven to be scalable
- it was written in Java, a robust programming language which could cope with the demands of an enterprise system
- it had all the basic features we needed (upload/download, assessment, log-books, discussion areas, etc.)
- it was completely customisable in terms of terminology and interface
- it was flexible in other areas – we were at liberty to tailor it to our needs throughout
- it had been developed by a like-minded research University and thus there was the beginning of a HEI community
- support was available via the Bodington community without a charge
- users were not pigeon-holed into categories (e.g. tutor, student) and could be given extra rights at any particular area of the system
- it did not require major purchases of hardware/software to run it (we host it on a single box running Linux with Apache, Tomcat and PostgreSQL)
- it allowed us to expand the users at will without considering the costs this might incur if licensed via a ‘number of FTEs’ model

- it conformed to accessibility standards
- it was more amenable to the use of open standards and thus allowed us to pursue external research grants through the JISC (see below)

To put it simply, Bodington won through because it matched the needs of the University in terms of its joint honours and open access policy. It was only once this decision was made that costs were looked at. Bodington was free, and ran on open source server systems. In theory then the absolute minimum cost to the University would be the setting up of the server (c. £5,000), plus £3-4,000 per annum maintenance. Compared with an absolute minimum cost of about £50,000+ for a commercial licence this makes interesting reading. Of course, such figures are meaningless. As we all know, a VLE is for life and not just for Christmas, i.e. considerable money has to go into staff funding to 'support' the VLE (maintenance, training, user support) and one of the perceived problems with open source products is that this is where the costs truly kick in, and commercial products have the upperhand. However, this has not proven to be the case as we will see later.

But let us also consider the inherent benefits of open source products which also came with Bodington. In this sense then, the definition of 'free' becomes much wider:

- free from locked in code – we were entirely at liberty to tailor all aspects of the code to our need; moreover the user community is in control of this and has direct access to the developers (as they are all local);
- free from product lock-in – it is all non-proprietary; content can be moved in and out without third-party filters;
- free from commercial risk – ironically because there is no company backing the system there is thus no risk of the company going bust and thus the sole source of support being cut-off;
- free from ignorance about the product's potential – because we can examine the code thoroughly we can easily see the possibilities and limitations of the product. We are in control of its future development path and do not have to rely on sales brochures and salesmen for information;
- free to reuse product – we can take parts of the code within Bodington and reuse it in other projects or developments;
- free from monolithic structures – we can start tools integration whenever we wish (as we have now done with TOIA and LAMS) and bring in best of breed products that we want to use, and not those dictated to us by other sectors.

The free lunch: A VLE for 3 years, plus 5 developers, and all at no cost?

The VLE (called WebLearn in Oxford but powered by Bodington) was launched in January 2003. Initially we employed 1 FTE to support its roll-out but currently we now employ 5 FTE in the VLE team (1 user support, 4 developers). In normal circumstances this would prove to be a costly exercise (a staffing bill of around £150-200,000 pa alone), and perhaps the 5 FTE may seem to bear out the fear that an open source solution in reality costs more than a commercial product.

But let us look at the facts.

First, the key word above is ‘developers’. We estimate that to simply maintain the VLE in its current form across the University would centrally require 1-1.5 FTE. This is entirely in keeping with experiences at other HEIs running commercial systems (i.e. central VLE support teams are usually around the 2 FTE mark). Moreover, because of the unique way Bodington empowers access control, it is considerably easier to devolve a lot of the administration to departments or individuals. You do not need to do everything centrally; you can section off areas and allow full control to them for any individual (even a student) without jeopardising the entire system.

Further scrutiny of the figures presents an even more interesting story; indeed one which may cause other IT directors looking at the escalating costs of their VLE licences to take note. We have calculated that in reality (overheads aside) we have managed to run and develop the VLE with 5 members of staff, plus all of the server costs, more or less for nothing for the past three years. This has saved the University somewhere in the region of £400-450,000 (i.e. £150,000 per annum¹).

This may sound a grand claim, and indeed too good to be true. And, to be honest, to a certain degree it is. Oxford still funds the basic maintenance of the VLE but this is proving to be a lot less than we accounted for (in part due to Bodington’s devolved access control model). In total, however, the VLE development team costs around £180k per annum but this is largely paid for externally. How can this be so? After all, there is no such thing as a free lunch we are told (usually by people trying to sell us food it should be added) but the facts bear out such a statement. Bodington is free, there was no annual licence, and the systems it runs on are also free. Most importantly, being open source presents us with the clear advantage that we can develop it according to our needs and requirements. More importantly, we are actively pursuing open standards (and this is key), thus in keeping with emerging initiatives (such as the JISC e-learning framework). In return, of course, any improvements to the code is given back to the whole community (again for them to freely reuse). Combining the three makes products such as Bodington extremely attractive to funding agencies – or to put it more bluntly products that use open standards (of particular interest to JISC), and which you also have access to the code to steer its development, offer opportunities for funding applications which otherwise may not be available. Grants can be obtained for development of the interoperability and functionality, integration with other systems, evaluation, etc., as the work can then be given back to the community for them to freely use if they wish. The free lunch therefore has come about because we have managed to attract money in development grants which combined have covered the costs of the servers and the 5 FTE development staff for the 3 years. Money has been received from JISC to work on integrating the system in keeping with their e-learning framework, via the use of open standards. More interesting was the ability to use £200k from the HEFCE Capital 3 investment fund for this development

¹ That is the cost of an annual licence for a commercial VLE (Oxford has about 30,000 users), server costs and server software, hardware plus back-up servers, and staff costs for central support.

work. In this it stated that money could be used for VLE development, and HEFCE wisely recognised that with an open source product this could only mean development staff, which they agreed was acceptable to fund with the money. In return we have a VLE which we can openly develop to match our own needs, one which is being built in line with the emerging standards, and one where we can target resources at the functionality we need as a major research UK research University; and not bow to the whims of the international corporate training sector.

Can this be sustained? We certainly feel we can cover from internal resources the maintenance of the VLE in its current state but it could be argued that the development of the product may be in jeopardy as external funds become more scarce or directed to other areas. Yet there is no sign of the latter and indeed the need to develop learning systems in a framework based around open standards is being emphasised more and more. In addition, as we move away from the notion of monolithic VLE systems to more modular systems that allow for tools integration the flexibility that an open standard/open source model offers is even more attractive.

Do we miss the support for all of this that we would (possibly) have access to with a commercial product? The simple answer is no. There is a good community of developers in the UK already (Universities of Oxford, Leeds, Manchester, and the UHI Millennium Institute) which acts as a collective pool of expertise. They are online, on the phone, and meet up regularly, and do not cost. As the pool of developers and institutions using the system grows so does the potential support – this is a sustainable model. This is not to say that such communities are absent with the commercial products; but rather to point out that in our experience they work very well with open source products. How often do you get to sit at a table with the developers of a VLE and make concrete decisions that will be enacted about functionality?

The success of Moodle, the open source ‘VLE’ product, attests also to this. It shows how a simple open source tool can meet the needs of colleges and Universities and the community can support its development. We are actively looking at Moodle ourselves. We think it has some excellent features, but lacks some of the key enterprise-level requirements that are implemented in Bodington, especially the access control management. Furthermore at the moment we feel more safe with the proven scalability of the Java-based Bodington. But by using open source we are not presented with an either/or choice. Instead we are now actively looking at integrating Bodington with Moodle and combining the best of both, which we think will again match the needs of the major Universities in the UK (and elsewhere).

It is hoped that the experiences presented here will help raise awareness amongst IT Directors of the potential benefits of the open source solution. There are many open source systems out there, of course, and we should be looking at the merits of each before making any choice. However, if you are interested in looking at Bodington some of the new developments are listed below. Even if you do not intend to use Bodington as your main VLE it can provide a test-bed for development projects which pursue the open standards model. Many of the items below present excellent projects, and subsequent

funding opportunities which other Universities could benefit from by joining the community. Come join the feast!

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New Developments in Bodington:

- Shibboleth integration
- Integration with LAMS and TOIA
- New reading list function
- Development of a back-end learning object repository
- Increased functionality (better survey tool, access viewing rights, notification tools, HTML wysiwyg editor)
- Support for reading syndicated newsfeeds (RSS, Atom)

If you wish to look at Bodington go to www.bodington.org. There are walk-throughs of various functions, latest release codes, news items, future releases, and a fully working demo CD (for download or available by post).