Using Moodle in small to medium sized business

A practical guide for small to medium size business'
on using Moodle to deliver effective and
successful online learning.

Forward - who is this book for?

To be totally honest I had discounted the idea of writing a book about Moodle about 3 years ago. The reason was simple. We had been spending time writing course manuals and training materials for use in workshops and onsite training. After a couple of major updates for Moodle 1.7 and Moodle 1.8 I realised that it was far easier to put all our courses in an online format – updating was faster and more efficient. We therefore created and launched our MoodleBites courses (www.moodlebites.com) in late 2006.

However, during the following years, and even today, I continue to see new Moodle users posting on the Moodle.org website who are not 'teachers'. They were not necessarily working in schools or universities, what many think of as the traditional users of Moodle. It became clear to me that many people on Moodle.org asking questions were working in business, commerce, and private organisations that are not government funded.

I also sat in numerous meetings with our existing and new Moodle clients who expressed how difficult they found using Moodle.org for help. Whilst the Forums on Moodle.org provide a wealth of information, and there are many people in the community happy to help, it can can be difficult for a new user because the discussions regarding the different versions of Moodle are interweaved. In addition, many Forums, if not all, contain discussions that relate to newer users, existing users, and advanced users. Many even have input from developers, programmers, and software architects. It is truly wonderful that such discussions take place, but it is also a very difficult environment for a newer Moodle user to make sense of.

In recent years the Moodle Docs project has gone from strength to strength. In terms of an open source community driven piece of software the documentation is extremely good. However, it is far from perfect. For new users it's still not easy to learn Moodle from this because as a new users "*You don't know what you don't know*".

It was also during this time that my good friends Gavin Henrick (at that time working with Enovation Moodle Partner in Ireland) and Jason Cole (working with Remote-Learner Moodle Partner in the USA) announced their 'Moodle for Corporate Training' book. I happily contributed ideas, and developed a case-study for inclusion, featuring one of our largest multinational clients.

After some discussion I realised that even with this much needed publication there was still a large hole in the provision for Moodle users. So a book for using Moodle in SME's (small to medium enterprises) still seemed highly relevant. Coincidentally, being based in New Zealand I realised that probably 80% of our clients were in this exact space – small to medium sized companies.

This was really no surprise given that New Zealand has one of the highest percentages of small business's within the overall economy of any country. This is partly due to the somewhat geographic isolation of New Zealand, but also

partly driven by a Kiwi 'number 8 wire' mentality. The number 8 wire tag relates to the fence wire used by sheep farmers for many years. The idea that No 8 wire can be used for creatively solving many problems is part of the national identity now.

That's a long-winded way of saying "I wrote this book because I thought there was a need".

I've tried to write as I speak, because this feels the most natural thing for me to do. I've talked to many, many Moodle users from New Zealand and Australia, to San Francisco and Barcelona, from Rome to the Oman, and discussed Moodle face-to-face with many management teams, trainers, and teachers. So in effect I am attempting to capture much of this discussion so it can help a wider audience.

HRDNZ became a Moodle Partner in 2006 and we were using Moodle for a few years prior to be appointed, so we have seen a lot of different Moodle sites, serving different needs, each with their own unique challenges.

The other, rather unusual thing I will be doing, is publishing chapters of this book as .pdf documents as I go. This will be done in the Business Uses area of Moodle.org, and in the Moodle in Business group on Linkedin, and also in the Moodle Partner group on Facebook. I hope this enables ideas to feed in to the book, and ultimately provide an even more useful resource for everyone. In some ways this is a parallel of the development of open source software mantra itself – "release early, release often".

Ultimately it would nice to have the book published – and maybe a publisher will pick-up on it and I'll get some modest commission.

So, who is this book for?

Well, you the reader will probably be a newer Moodle user, or an intending user. You will probably be IT literate, but not necessarily an IT professional. You might be a trainer, and HR practitioner, or an e-learning manager (perhaps using a different e-learning system at the moment).

If you have been successfully using Moodle for more than a year it may be that you already understand sections of the content covered here. However, you may find it helpful to reflect upon decisions you have made and perhaps adapt your strategy.

Of course you could be using Moodle as a teacher right now, but be looking to the future and thinking about branching out with your own online business?

And why not!

Definitions

We will use the following terms and phrases interchangeably throughout the text:

- Learning Management System (LMS), Course Management System (CMS), Virtual Learning Environment (VLE) will all be used to refer to Moodle as an environment for learning.

- Student, Learner, User, Trainee, Client, may be used to refer to the people who use your Moodle site to learn. In Moodle the default description is a Student (although this can be changed) so we will generally use Student although the term applies to all.

- Teacher, Facilitator, Coach, Tutor, Trainer, and others(!) will be used to identify the people who assist learners through a course. In Moodle the default description is a Teacher (although this can be changed) so we will generally use Teacher, with the same broad inference as Student above.

- Moodle uses the term Course to mean a single self-contained 'study unit' that a Student can be enrolled into. A Course has Participants - members who are usually Teachers and Students. Each Course can be assigned an enrolment key for example. We will use the term Course predominantly, although this may equate to a module, or a unit, or a programme in your own context.

- A Lesson in Moodle has a specific meaning – it is an activity type that allows Teachers to create a sequence of content, and may include questions and branching based on a Student's responses. Although you may use the term lesson to mean 'a defined section of the curriculum' or 'a set amount of time' it's important to recognise that the word Lesson means something very specific in Moodle.

- An Administrator in Moodle is someone who can change settings that affect the whole Moodle site. A Moodle Administrator is usually someone who has a strong technical understanding, because the changes a Moodle Administrator makes can affect the operation of the whole Moodle site, and all users. Your organisation may have an administrator that looks after enrolments and so forth. This person may, or may not, also be your Moodle Administrator, depending on their technical skills.

Introduction

What is not covered in this book?

This book does not cover the highly technical aspects of Moodle because there are already resources available in this area, and the highly technical aspects of Moodle are generally of less interest to those starting out with Moodle. Books such as *Moodle Administration* by Alex Buchner and the *Moodle Administrator Reference Manual* by Ray Lawrence are available if you wish to read more in this area, and I encourage you to do so once you have mastered the basics if Moodle site administration is something you are interested in.

Large organisations versus small organisations

This book does not attempt to address the use of Moodle in large companies, or multi-national organisations, which will have their own IT departments. It is aimed at the smaller Moodle user, who is often a 'jack of all trades' – the teacher, the marketing department, the manager, and often the Moodle site administrator!

Let's think for a minute about the differences.

In large organisations the IT department or Human Resources or the Training division will often take care of Moodle, and the teachers or trainers may not be concerned with enrolment for example, concentrating instead solely on running courses. However, in the smaller environment it is more likely that one person is responsible for everything relating to Moodle. This is quite possibly you given that you are reading this book! And this means you need a wide appreciation of how a Moodle site works, and what is required on a day-to-day basis, as well as the mechanics of actually creating and delivering courses.

For example, in a typical large organisation logging into the network might be controlled via LDAP (the Microsoft Lightweight Directory Application Protocol). This is a relatively effective way of managing the network security and access for large numbers of internal users. When a user logs in to their files area, or email for example, their authentication details are checked against records held in LDAP. Smaller organisations, perhaps operating without a dedicated IT specialist, will be highly unlikely to use an LDAP system. It's overkill for a small organisation. So, although Moodle can in fact use LDAP to authenticate users, the context of small business means this is usually not possible or necessary, so it falls beyond the scope of this book.

So, this book will tend to focus on the parts of Moodle which are most relevant to the smaller business, meaning we will skip over some things, sometimes providing brief overview information and links, and we will occasionally ignore other aspects which have relatively little relevance to the reader.

What is a Learning Management System?

Before we even discuss Moodle, it's probably worth defining what a Learning Management System is, because Moodle is often referred to as such.

In fact the accepted wisdom regarding the definition of an LMS varies.

In very simple terms, a online Learning Management System, which is often abbreviated to LMS, is a software application for the administration, tracking, and reporting of training content.

There is a prominent statement on the front page of www.Moodle.org that indicates Moodle is in fact a Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE).

The confusion between these various terms comes from the fact that often the 'back end' administration systems are known as Student Management Systems, or Learning Management Systems. These may be applications which learners never interact with – being used primarily for record keeping, results recording, enrolment, financial information and so on. An LMS may not be involved in the delivery of training material at all. Of course, many LMS's serve both back-end and front-end functions – with the delivery of training being tracked and monitored, and results collected.

Moodle is therefore perhaps more correctly termed a CMS – or a web-based Course Management System. The primary function of Moodle is to provide an environment for learning. Of course Moodle facilitates many of the back-endLMS functions too – tracking progress, recording results, etc.

It is also important to distinguish the function of the LMS or CMS from what can be broadly termed 'content development tools'. There is a whole industry that has grown up for creating learning content or learning objects. As with many LMS's Moodle is able to incorporate learning objects created with external specialist software. A common example might a software application that allows teachers to record their screen and narrate or annotate this, and publish as a movie.

These objects such as screen movies can be embedded in courses and used alongside the in-built learning tools provided by Moodle. This is quite different to the majority of proprietary e-learning systems which tend to be closed, and not allow the inclusion of external content.

It is also worth drawing attention to the fact that because Moodle is an open source application, the data within it can be easily imported and exported, and accessed by other applications such as a finance system or student administration system. This avoids one of the most costly mistakes made when selecting an LMS - getting locked-in to the support fees and limited support capability of a proprietary application provider.

Why should an SME use Moodle?

One of the main problems for a small to medium enterprise at first is to really understand how and why to use Moodle. In a commercial setting these decisions should be tightly focused on the business requirement of organisation. There is nothing in that decision that excludes taking the educational best-practice from education, and applying these in an appropriate way to the business scenario.

So, a business may use Moodle for:

- Moodle for training
- Moodle for introducing new employees,
- Moodle als collaborative working environment
- Moodle as internal community plattform
- Moodle for client trainings,
- Moodle for client support.

Is Moodle right for you?

The purpose of this book is not to 'sell Moodle to you'. It is squarely aimed at helping you get up-and-running once your decision is made. However, how do you choose your LMS, and is Moodle the best choice for you?

Your decision should be based on a number of factors such as;

- Cost
- Reliability
- Scaleability
- Security
- Flexibility
- Support

Cost

If you have invested your time in reading this book you will probably know by now that Moodle is a completely free piece of software. This means anyone is able to download, install, and run Moodle without paying for the software, or any type of license fee.

As you are a business person, you will probably have heard the phrase "There's no such thing as a free lunch", which generally means "You don't get something for nothing!" However the software Open Source movement is an area that has started to change this.

Although Moodle is free, it does have a license. It is released under a GPL license (more about this later). But as an end-user you, or your organisation are able to use the Moodle software freely. There are costs involved though. If you are hosting a Moodle site yourself there is the cost of the computer hardware. If you have a specialist hosting your Moodle site you will probably have monthly hosting fees. There are also costs that are somewhat hidden such as the time it takes to manage your site, and an appropriate professional development plan and training for staff.

So the true cost of operating a Moodle site may be a few hundred dollars a year, to many thousands if you are a large organisation. We will discuss hosting options and costs in more detail later, but essentially it will probably cost you a couple of thousand dollars a year to run a Moodle site, which is considerable less than most other LMS's.

Scalability

Scaleability is about whether your Moodle site will grow with your needs. You will probably start small, with one or two courses and a relatively small number of learners. In fact, this is often a very wise decision rather than trying for a 'big bang' approach which could have a major impact on your time. Like many other aspects of business, it's often best to start small, get things right, and then build up capability, and enrolments and/or sales.

The ability of Moodle to support large numbers of courses and users has been long proven now, and some of the largest Moodle sites have many hundreds of thousands of users, one of the biggest being The Open University in the United Kingdom, which has more than 650,000 users and 5,000 courses. Moodle.org is the Moodle community website and of course uses Moodle – and in late 2010 passed the one million registered users mark.

So even though you may be starting small, and hoping to grow, Moodle will happily grow with your needs.

The open source nature of Moodle means that developers and programmers can even create new functionality and add this to your Moodle site! There are getting on for almost a thousand 2rd party plugins, which allow you to extend what Moodle does. Some are integration with other applications, some add new functionality to Moodle, some add new types of quiz questions, and so on.

This concept of extending Moodle through non-standard modules is a fundamental benefit of choosing an open source application. We will explore the world of non-standard Moodle 'mods' in it's own chapter later.

Reliability

A learning management system is a little like your car, in that no matter how much or how little it costs you want it to be reliable! Reliability is something you need from your LMS – you want to go to sleep at night confident in the knowledge that your e-learning courses will be available twenty four hours a day, seven days a week.

This is one of the reasons your 'Moodle host' or installation options should be carefully chosen.

Moodle is usually installed on a Linux server. Linux is an Operating System (or 'OS') just like you have on your home computer – something like Microsoft Windows, or Apple Mac OSX. The ease of use of Linux distributions such as Ubuntu (distributions are a little bit like different versions) has meant in recent years the more technically minded computer user can install a linux desktop operating system environment on their home computer or laptop. Linux is

traditionally the best Operating System for use on servers because it is very fast, extremely secure, and highly efficient at serving files to users.

Moodle can be installed on other Operating Systems including Microsoft Windows and Apple Mac OSX, but is in general slower and/or less secure. This is largely because Moodle is developed (created) for a linux environment – because most of the internet servers in the world use linux. Later on we will discuss the options you have for installing Moodle on your own home computer. Although you would never use a home computer as your main Moode site, it can be useful for experimenting (without any risk of harming your main site!) and also it can be an indispensable self-training resource.

In the professional IT world Linux is well known to be the best solution, and the vast majority of servers you access on the internet everyday use Linux. This knowledge will be useful later on when you decide how to 'host' your Moodle site.

Although it is possible to download and install Moodle on your own computer, even your laptop, to make your Moodle site available for your learners and the wider world, you would need to have the site 'hosted' on a server which is connected permanently to the internet. This is where Moodle Partners and other hosting providers come into play. We will discuss hosting options later, but for now it's enough to realise that you will want to have your site 'hosted', and this is probably going to involve a hosting provider, or ISP (Internet Service Provider).

If you are intending to use your Moodle site solely for onsite training for your internal staff you may want to host the server yourself internally. However, if you envisage staff accessing your courses from home, or remote sites, or that your courses will be delivered to your external clients outside your main office then an external hosting option may be better.

Security

The world of computer and network security is a specialism all of it's own! If you think about your own computer you will almost certainly have a number of security process in place. These might include; Logins with secure passwords, a virus checker program, a pop-up blocker for reducing unwanted advertising, a firewall for blocking unwanted access to your computer when you are connected to the internet, a spam filter for getting rid of unwanted emails, and automated software security updates.

On servers we have much the same considerations. By placing your Moodle site with a Moodle Partner or ISP you are effectively passing the majority of server security to them – great! This is one of the reasons you should select your hosting provider carefully.

However, there are also some aspects of Moodle security that you yourself need to consider. Luckily all of these can be addressed by carefully selecting the most appropriate settings in your Site Administration, and by applying logical best-practice in your use of Moodle.

- Moodle has an ability to set passwords that are secure.

  If you are reading this, and realise that your password is in fact fairly insecure, then you should stop now and go and fix it! Easy to guess passwords are one of the biggest security risks you can have. But given that it is very easy to avoid this security risk you should certainly apply best-practice from now on.

- Moodle has an option to use a virus checker to check every file that is uploaded to your site. This applies equally to files that are uploaded as course resources by teachers, and to files that might be uploaded by students as part of an assignment for example. But it is for the Moodle Administrator (not your site host) to check this.

The key point here is that a Moodle site that is well set-up and maintained is a secure site. By the same definition, a Moodle site that is not set-up correctly, and not actively maintained with security updates may be insecure. This is true of any server application on the internet.

Security updates

Moodle, like most other actively developed software, has updated versions released from time to time. Sometimes these releases are because small bugs (undesired behaviour of the application) have been fixed. Sometimes it's because new features are being introduced. And sometimes it's because there are security risks that have been identified, and developers have made updates to the program code to fix these.

Security updates are something your Moodle host should take care of, because you need server access to update Moodle itself. Security fixes should always be applied in a timely manner when released to ensure your Moodle site continues to operate with minimum threat from people who might wish to compromise your site in some way.

Even if you are hosted externally this is definitely something you need to understand though. It is fairly easy for you to check which version of Moodle you are using. So you can easily check if your hosting provider is keeping your site up-to-date. If not, it's time to look for a different hosting provider, because security is something that we should never underestimate or shortcut.

It's possibly worth mentioning that Moodle has an internal security team, and

that Moodle Partners get security updates around two weeks before they become available to other Moodle administrators. This gives admins a chance to upgrade their sites before the security update details are announced to the general public.

Flexibility

Moodle cannot fulfil every single unique need for every unique user in the world, no single application every could. However, Moodle has a level of sophistication and ease of customisation that means individual Moodle sites can look different, and work quite differently, depending on the intended use.

It is for example quite easy to make your Moodle site appear as a large catalogue of courses – and this might be exactly what you want. Equally, you could make your Moodle site look more like your business website, and many small organisations use Moodle as their 'public face'. You could even make your Moodle site look and work more like a Web 2.0 community orientated site, with videos, RSS feeds, Blogs, Wikis and interactive community driven content. Some organisations use Moodle as their intranet solution (in simple terms an intranet is a central repository for everyone in the organisation). Using Moodle in this way it is relatively easy for staff to access common files from work or home for example.

We will discuss the way your front page looks further on. However, it's good to recognise that this is a very important aspect of Moodle, and how the front page looks when your existing learners and/or potential clients arrive can easily be controlled by you. You could have a long list of courses, or categories for example. Or you might use large friendly images and link to courses. You can have a minimal and uncluttered front page, or a exciting, colourful, dynamic front page. It depends on what you are trying to achieve, and matching the design of the front page with the needs of your learners.

It's also worth mentioning here that the way Moodle looks can be controlled through the use of Themes. There are a number of different Themes available in the standard installation, and others can be downloaded, or designed to exactly match your other business websites. We discuss Moodle Themes in detail in the chapter on branding.

Support

Like any aspect of your business the support structures you have in place for your Moodle site may be a critical success factor. Moodle is a very sophisticated piece of software, with well over a million lines of computer code.

It may be that you wish to enjoy the challenge of setting up and hosting a Moodle site, providing you have the hardware, time, and technical skills to do so. Many people do this. Or, you may elect to have your site hosted by an IT

specialist, so you do not have to worry so much about the technical side. This is a very popular and appropriate decision for many SME's. However, you should not under-estimate the benefit of working with an organisation that really can support your use of Moodle. Just like you may use accounting software that is supported by a specialist in that software application, or you have your company website hosted and designed by a specialist, it can really pay dividends in working with a knowledgeable Moodle support provider to help ensure your Moodle support is effective.

So what should you be looking for in terms of support? The main criteria is finding a host and support provider that fits with the way you want to work. Do you expect fast helpdesk support? A freephone contact number? Onsite meetings? Do you want to talk to technologists or educationalists? Is the support free, within the contract price, or is it an extra? If extra, can you purchase a set amount of hours for an agreed hourly fee in advance? It's a good idea to list out your most important requirements, as you see them, and have a clear documented overview of these – an onsite meeting or teleconference to work through these essentials with possible providers might be a good idea.

As we have mentioned already 'word of mouth' recommendations can often be one of the best decision-making factors. Talking to people who are existing clients will often tell you much more than reading through slick marketing material and surfing through impressive websites.

Ask potential hosts/support providers if they can give you a client reference for another organisation of a similar size or type. If the provider is a quality provider they will be more than happy to do this, because they understand how valuable this is within your decision-making process.

Your own development

It is really important to take accept that it will take you time to learn Moodle.

Moodle is a large sophisticated application, and realistically you cannot master it in just a few days, or even weeks. In fact, many users only use a small number of the functionality at first. As your experience builds you will investigate new areas and activities. But remember there is a lot to learn! And Moodle is flexible, so it can be used in many different ways.

To get the best out of Moodle, you should seriously consider becoming an active member of the user community on www.moodle.org

Members of the community range from technical gurus and programmers, to primary school teachers, and everything inbetween. Many of these members have been through the same learning curves that now confront you, and many are happy to help through the numerous discussion forums.

Moodle as a piece of software

If you glance at the About Moodle link http://docs.moodle.org/en/About_Moodle from the front page of www.moodle.org you will read that Moodle is a software package for producing internet-based courses and web sites. So, as I'm sure you know by now, it's a software application that is installed on a web server to allow teachers and learners to create and access learning materials.

The About Moodle page then goes on to mention that *it is a global development project designed to support a social constructionist framework of education*. There are two points here that are little more difficult to understand, but in fact incredibly important. Firstly, the phrase *global development project*. All this really means is that the software is an ongoing (growing) piece of software, and that there are contributors from all around the world. So, although the Moodle Headquarters is located in Perth, Western Australia, there are many developers (programmers) that are able to contribute to the project to improve it. That's one of the revolutions around Open Source Software, often abbreviated to OSS, that anyone (with the skills) can develop code for Moodle. But more about this later.

The second part of this very brief, but very important statement, is that Moodle is *designed to support a social constructionist framework of education.* This also takes a little bit of explanation. Unlike many Learning Management Systems (which are often the product of database gurus and clever marketing) Moodle is fundamentally designed around a theory of effective learning called social constructivism.

Constructivism, in very simple terms suggests that people learn best when they are constructing something for someone else. This makes sense, and if you think about the old saying "If you want to learn something really well, then teach it to others!" we all know this anyway. Preparing to teach someone else some knowledge really does help ensure you know your stuff backwards!

Social constructivism extends the constructivism idea into social settings. So for example, groups may construct knowledge for one another, collaboratively creating a collection of knowledge. To see this in action, just think about ways people use Forums. Someone may ask a question, another may answer, and third may ask for clarification, a fourth may offer an alternative solution, the first poster may now have a different question, the second may re-evaluate their contribution and change their opinion, and so on. And all the people in the Forum that are not posting can still read and reflect on this discussion (although it's more beneficial if they get involved).

Another example of social constructivism in action within a course could be giving small groups an individual task, and having them share their findings – perhaps with a PowerPoint or Presenter show they have collaborated on, and

some links to appropriate resources. Maybe they even create a Quiz for the others to test their knowledge!

The Moodle license

Moodle is provided freely as Open Source software (under the GNU Public License). You can read more about what Open Source Software means at http://opensource.org/docs/osd and you can read more about the GPL license at, http://www.gnu.org/copyleft/gpl.html but you probably don't need to unless you are a developer. Basically the GPL license means Moodle is copyrighted, but that you have additional freedoms to a standard copyright. The GNU General Public License is intended to guarantee your freedom to share and change all versions of a program - to make sure it remains free software for all its users. For example, you are allowed to copy, use and modify Moodle provided that you agree to:

- Provide the source (underlying code) to others.
  This is so others can alter and further improve the code if they wish to.

- Not modify or remove the original license and copyrights.
  This ensures other users understand they inherit the same rights that you did.

- Apply this same license to any derivative work.
  This means an organisation cannot package and sell Moodle to others (for a fee) and pretend they 'own' the copyright. Although they can package and sell Moodle if they wish.

You can read the license for full details (it's included when you install Moodle) and contact the copyright holder directly if you have any questions. If you are unsure you can also ask questions in the appropriate Forum on Moodle.org.

The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment, which is mostly useful to programmers and education theorists. Moodle is also a verb that describes the process of lazily meandering through something, doing things as it occurs to you to do them, that might lead to insight and creativity. As such it applies both to the way Moodle was developed, and to the way a student or teacher might approach studying or teaching an online course.

Some people who use Moodle identify themselves as a Moodler, and Moodle conferences are often called Moodle Moots (a Moot in this sense is derived from an old European word for a meeting).

Hosting your site

Moodle can be installed on any computer that can run PHP (a simple programming language used to make web pages more interactive), and can support an SQL type database (for example MySQL). It can be run on Windows and Apple Mac operating systems and many flavours of Linux (such as Red Hat, Ubuntu and Suse).

When it comes to hosting your Moodle site so it is always accessible to your users you effectively have four options.

- Moodle Partners hosting

- Other hosting providers

- Hosting your site yourself

- Free hosting

Let's consider each of these different options, because you should understand the benefits and limitations of each.

Moodle Partner hosting

Moodle Partners are organisations that have been identified by Moodle Headquarters as providing the highest standard of Moodle support. However, Moodle Partners are not like McDonalds – which aims to provide a consistent and largely identical product whichever branch you visit. Moodle Partners are generally companies that were successful in their own right long before becoming a Moodle Partner, most often in the areas of web hosting, supporting learning management systems, or educational design and consultancy.

So, Moodle Partners each have a different set of experience and skills, and bring different specialisms to the Moodle project.

- Some Moodle Partners focus heavily on industry standard high-availability multi-cluster hosting, essential for large and international companies using Moodle.

- Some Moodle Partners have a 'development' offering, which means they have programmers on staff that can develop code for specific requirements – for example integrating Moodle with an in-house accounting system.

- Some Moodle Partners will be more orientated towards training and content development, and consultancy around how to best use Moodle within your organisation.

Even though each Moodle Partner will have a different emphasis, all will provide 'hosting packages' to run your Moodle site. Usually they will also provide training (onsite, online, or both) and Moodle Course Creator Certificate (MCCC) to get you, and your teachers up-to-speed with Moodle in an efficient and cost-effective way.

Hosting your site with a Moodle Partner has numerous advantages:

- Moodle Partners are on the 'inside track' of Moodle development and involved on a day to day basis with each other and Moodle HQ.

- Partners have an existing client base and 'tried and tested' solutions.

- Moodle Partners have access to code and security updates before they are released to the general public, or even other administrators.

- Requests from Moodle Partners are prioritised with the Moodle development roadmap, e.g. new feature requests or bug fixes.

It's probably true to say that Moodle Partners are not necessarily able to provide the cheapest option for hosting (largely because they have invested in hardware infrastructure and recruiting quality staff). But the slightly high costs need to be balanced against the considerable advantages hosting with a Moodle Partner will give you.

Other hosting

There are now many independent IT companies that can host Moodle for you. Like with any free market situation there is a huge variety in the quality and service levels you can expect, so you should do your homework before entrusting your Moodle site to an external hosting provider.

Some of the things to consider are:

- **Cost**

  There can be a wide range of pricing options, and there is no doubt that some hosting providers will offer significantly lower hosting fees than Moodle Partners for example. Of course, some will be more expensive. So, it can be useful to 'shop around' and compare offerings, bearing in mind that the hosting fee is just one specific part of your decision.

  Some hosting contracts will specify the maximum number of users you can have, or the amount of disk space, or the amount of traffic allowed to and from the server. Of course, it's difficult for you to accurately estimate exactly what you will need, so you should look for a contract that gives you some room to grow, without up-selling you to a level of service you don't really require.

  The number of users is a broadly indicative figure that will help providers understand the scale of your site. If there are 100-200 users then traffic is likely to be lighter than if there are 1,000-2,000 users. To be fair, this is only a general guide to site activity because a smaller site that is used constantly by a small number of users can be much busier than a site that has thousands of users registered, when in fact only a small number of these use Moodle on a regular basis.

  Disc space is often used in calculations for hosting. For small to medium enterprises often 5Gb (gigabytes) is often sufficient. This does not sound like much when you consider that USB memory sticks are now widely available in 8Gb and 16Gb sizes. And even a basic laptop computer these days usually has a hard drive of 80Gb or more. However, server disk space is very different. Hard drives on servers are constantly working away, and even a modest server disk will operate 4 to 8 times faster than your laptop (so it can 'serve' multiple 'files' to multiple users quickly and efficiently.

  Servers often use what is called a RAID system, which has a number of definitions, but usually stands for Redundant Array of Independent Disks. This 'bank' of disks means your data is copied and shared between multiple drives – and if one fails it can be replaced without affecting your

site. Another advantage is that the server can read files from perhaps 2 or 4 different drives, which means more files can be served more quickly at the same time. You can ignore the technicalities, but it is certainly worth knowing if you Moodle host uses RAID servers for your site.

- **Knowledge of Moodle**

As with pricing, this is a critical part of your selection process and should be uppermost in your mind during your research phase. Although some hosting providers may be expert in hosting websites, and provide highly reliable hosting, they will generally know *absolutely nothing* about Moodle at all. And that can have a significant impact on your Moodle site.

We have often seen Moodle sites that are not kept up-to-date, which is a major security risk to your courses and student information. This may be because the hosting company does not know about updates, or simply expects you to do this. Similarly, functions such as spell check, language packs, and updating third party modules may be left uninstalled or incorrectly configured.

Moodle needs to be optimised to run well, and this means understanding and configuring services so they result in the best performance of your Moodle site. These settings are specific to Moodle, and do not apply to standard static websites. So configuring the Apache web server, the underlying SQL database, and the installation of PHP are all areas that require configuration to ensure your Moodle site is stable, fast, and secure. Only individuals or organisations with expert knowledge of Moodle and server administration skills can do this.

If your hosting provider does not understand these considerations, and ignores them, your Moodle site will not be running as well as it should, and could be compromised in terms of security.

- **Services**

One of the most critical aspects of your Moodle hosting is the support services you have available to you.

From time-to-time there may be technical issues you cannot resolve. A simple one might be that a Student uploads a document for an Assignment, but the file is corrupt. This could cause the Gradebook to freeze for that Student for example. If you need assistance with a technical issue such as this you should know whether your host has these skills and the hourly fee upfront for such work.

Do you have confidence in the host's knowledge of Moodle to feel

comfortable that they can assist you if things go wrong? Remember that no computer program is perfect, and problems do arise that need resolving.

- **Exit strategy**

  What if you reach a situation where you wish to move from your selected Moodle host? Perhaps you want to bring your Moodle site from being hosted externally to internally. Or perhaps you have not received a level of service you expect and/or require from the hosting company. Moving Moodle from one location to another involves a fair amount of work, but is usually a straight-forward task when performed by a knowledgeable expert. Does your terms and conditions agreement or contract allow you to do this? Will they charge you for it?

- **Upgrades and trouble-shooting**

  Moodle requires updating from time to time. Usually there is a new release of Moodle, with great new features, once a year. However there are smaller regular updates which are mainly bug-fixes and security updates. You should check to see how the host charges for this, it may be included within your monthly fee, or not. If not, you want to know the hourly rate for this type of work. A Moodle Partner will usually include these upgrades for free, including security upgrades, or within the agreed hosting and support fee.

Hosting your site yourself

Most smaller companies elect to host Moodle with a specialist hosting provider. However, there are cases where you might consider it better to host your Moodle site internally. Some of the factors might include:

- Do you have the IT infrastructure to do this effectively?

  This essentially comes down to three key areas: hardware and software, and network speed. As we have discussed earlier Moodle needs to be taken seriously in terms of it's server – installing Moodle on an old server with limited RAM that is also running email and print and file services is unlikely to deliver a great e-learning experience!

- Do you have the skills internally?

  Even if you have the hardware internally your IT support may be unfamiliar with linux (the preferred Operating System to run Moodle), MySQL, Apache and PHP.

  Whilst it is possible for someone to engage in the research and testing required to set-up and administer a Moodle system this will take time away from other duties. There can be quite a learning curve, even for IT staff.

- Do you have the time required?

  You should weigh up the options – and decide whether it is worth someone cutting back support in one area to give to another. And of course, you have to plan for a situation where this person may leave your organisation in the future.

- What about connectivity externally?

  Generally an internal network is faster than the internet. However, if you are planning to provide access to your Moodle site for people from remote locations such as home and work, your own network interface to the wider internet could create a bottleneck. Limited bandwidth will adversely affect the speed of Moodle externally, and create higher data traffic and reduce speed internally.

- If you outsource other aspects of IT such as your website and email services it might be best to apply this same logic and outsource Moodle hosting too, possibly to the same support provider, or an alternative specialist. If your company is not managing other IT services on a day-to-day basic then it possibly makes more sense to apply this same strategy to your Moodle site – effectively passing the technology headaches to someone else better placed to deal with them. This doesn't mean you abdicate responsibility, it just means you manage the provider relationship, and ensure they deliver the level of service you expect and require.

Free hosting

Since Moodle adoption around the world has grown so rapidly in the past few years the number of hosting providers, consultants, designers and so on has grown.

Some of these are excellent of course.

Recently there have been a number of websites and adverts offering free Moodle hosting. Naturally these catch the interest of the reader, and can seem like a great way to avoid hosting costs.

Whilst there may be some value in these services, it's best to ask yourself some serious questions before entrusting your Moodle site to this type of service. Once you have Students and Assessments online your Moodle site becomes a 'mission critical application' – if it stops working it can affect your business in terms of reputation, and financially.

- Why would an organisation provided free hosting?

   Usually it is a weakly veiled marketing ploy because they expect to bring clients in and then sell them additional services such as training, Theme design etc.

   As a business-minded person you will know that there *must* be a pay-back for these providers somewhere along the line, because just like you and I they need to eat, pay their mortgage etc.

- What is your position if something goes wrong with your site?

   Are the providers going to charge you huge amounts to fix it?

   Some of the providers know nothing about Moodle at all, and are simply selling 'disk space' on huge computer clusters.

- If your site is free, but unacceptably slow for example because it is on a server running lots of other busy Moodle sites, you can't say "Improve the speed of our site or we won't pay you," - because you don't have that bargaining chip.

- If you are not paying for a service what do the contracts say regarding the security of your content? Remember, your intellectual property is priceless.

- What would happen if the free hosting provider was not very successful, and suddenly disappeared overnight? Well, you haven't lost any money, but how on earth would you get your site up and running again? And what about your Students the next day!

All this said, a free hosting provider *may* give you a cost-effective opportunity to run a small Moodle site for evaluation. This means you can expose staff and management to Moodle, and get a feel for how your real site might work. However, given the points above you should approach any free hosting service with a very critical eye indeed, and weigh up the benefits and drawbacks as they apply to your specific situation.

Local testing site

One of the options that free and open source software (FOSS) gives you is an ability to download and try the application for no fee. There are a number of reasons you might like to use a local testing site:

- It allows you to have an actual working Moodle site without having to pay for hosting
- It can be useful for developing courses offline, and perhaps transferring them to the main site later
- You can practice administration skills that you would not be able to do on a live site (e.g. changing major settings)
- You can do a lot of experimentation and learning on your local site, without any danger to your real Moodle site!

One thing to bear in mind with local Moodle testing sites is that you should use the same version (or earlier) than your actual server. This is because while it is always possible to move courses from one version to a later version, it is not possible to move courses from a later version of Moodle to an earlier one! This makes sense of course because later versions will have new functionality which didn't even exist in earlier versions.

A local testing site requires you to install a web server application on your computer. This is not overly difficult, but you do need Administrator access to your computer (to install applications) and a reasonably faster computer. Trying to run a web server and Moodle site on an old computer with limited RAM and a low-end CPU may lead to a very frustrating experience.

In computer terms this local installation of a web server is called a 'localhost'.

In fact, once the server is installed and running you will be able to navigate to the start page of your localhost by type the URL http://localhost

This is in effect exactly like connecting to any other web server on the internet, aside from you don't need to set-up a domain name, and you don't need an internet connection.

Microsoft Windows

Microsoft Windows is the dominant PC desktop environment in business today, and has been for some time. Many small organisations may have a Microsoft Windows server that handles file sharing, printing, and email within the company. Given this, it is possible to install Moodle on a Windows server, although this is known to be slower and less secure and robust than Linux for example.

Although most commercial hosting companies will use Linux servers, it is relatively easy to have your own local testing Moodle installation on a Windows PC or even a powerful laptop. Up-to-date information can be accessed at http://docs.moodle.org/en/Installing_Moodle_on_Windows_Vista.

There is a package available (http://download.moodle.org/windows/) that contains Moodle plus all the other software needed to make it run with Windows: Apache, MySQL and PHP. They are built using XAMPP (this is an acronym for cross-platform, Apache, MySQL, PHP, Perl). This Moodle for Windows package is quite easy to install with a nice control application and should work on Windows 2000, 2003, XP, and Vista.

If you have a Microsoft Server already running on your local computer, Moodle can also be installed using the Microsoft Web Platform installer at http://www.microsoft.com/web/gallery/Moodle.aspx.

Note: although this gives you a quick and easy way to setup a local Moodle testing site, you should not use this for your actual operational site. Running a secure and robust Moodle site for your business requires more than XAMPP is able to provide.

Apple Mac

Moodle4Mac is designed for experimenting and testing locally on an Apple computer, however it is **not** secure enough for use on the internet as your main Moodle server, so please bear this in mind! Repeat: do not use this Moodle4Mac local testing site option to run a public Moodle site.

If you have an Apple Mac computer then running a test Moodle site is very easy. You would need a relatively modern Apple such as an iMac, Mac mini, MacBook, or MacBook Pro. For reasonable performance the processor should be an Intel Core 2 Duo (G4, G5) with 512 megabytes of RAM or more, and at least 500Mb free disk space.

Note that we are not talking here about running Moodle as a full public Moodle site on an X Server,. Just a local copy you can experiment with, and perhaps learn some basic administration skills for example.

The packages are available from Moodle.org downloads (http://download.moodle.org/macosx/) and contain Moodle plus all the other software needed to make it run: Apache, MySQL and PHP and were built by Ralf Krause using the distributions of XAMPP and MAMP. It is very easy to install with a simple control application. These complete install packages for Mac OS X are called Moodle4Mac.

Also, they include a special update script, so it's easy to update your local Moodle site without needing to download the whole package again and without reinstalling all your courses.

There are some excellent step-by-step instructions on how to install Moodle4Mac on the relevant Moodle Docs page (http://docs.moodle.org/en/Complete_Install_Packages_for_Mac_OS_X)

Basically you will download the zipped Moodle4Mac installation file, unzip it, double click on the Moodle4Mac.dmg to mount it, and drag it to your Applications folder. It's just like installing any other Mac application.

When you are ready to run it just navigate using Finder to the MAMP folder in Applications and double-click the MAMP icon to launch. You may need to start the Apache (web server) and MySQL (database server) by clicking on the Control buttons.

In your browser you can then visit your localhost site, simple enter the following in the address bar: http://localhost

You can keep your local Moodle4Mac site up to date by running the UpdateMoodle.sh script which is also in the MAMP folder.

Linux

Most commercial websites, ISP's and therefore Moodle Partners will run use the Apache HTTP Server. In fact most of the sites you visit on the internet will be running Apache, well over 100,000,000!

If you have a linux computer then installing a local Moodle test site is essentially the same as installing on a commercial web server.

Most linux distributions will easily let you install a LAMP (Linux, Apache, MySQL, PHP) set-up.

Some distributions will include the option to install Moodle from your package manager such as apt or YaST, but you should not use the version of Moodle supplied as it will be out-of-date.

As a linux user you will understand that you need to have the Apache web server working (e.g. you can access http://localhost), you have PHP installed, and can setup a database, either using the command line or an application such as phpmyadmin (http://www.phpmyadmin.net/).

Details for installing Moodle on linux can be found at Moodle Docs http://docs.moodle.org/en/Install and are very easy to follow for even a moderately experienced linux user.

As this is a local test site only you can realistically ignore settings related to optimising Apache and PHP, because you will be the only user on the system.

About the author

Stuart Mealor is Managing Director of Human Resource Development International Limited (HRDNZ). He has worked with Moodle since 2003 and guided HRDNZ to become a Moodle Partner in 2006.

After initially qualifying and working as a graphic designer Stuart moved into teaching design, computer graphics, and web design becoming a Certified Internet Webmaster and later teaching CIW courses.

Teaching for ten years at public educational providers in the UK allowed him to study for his BA(Hons) teaching qualification, and later, whist working as a tutor-counsellor with the Open University, his Certificate in Education.

Leaving to work in the private sector he set-up numerous training divisions and training centres for private IT companies and during this time completed his MBA in International Business.

Moving from England to New Zealand in 2001 Stuart started to concentrate on the use of technology in teaching and specifically e-learning, working with clients on a variety of e-learning platforms such as FirstClass, Blackboard and WebCT.

He holds a central role with Moodle as Certification Manager, guiding the development of the original Moodle Teacher Certificate, and the updated Moodle Course Creator Certificate (MCCC). He has coordinated the work of Moodle Partners around the world implementing Moodle certification.

Stuart is well known for his work on Moodle in Business, and also Moodle as a social networking environment. He has presented on the topics of certification, Moodle in business, and social-networking in New Zealand, Australia, Rome, Barcelona, Oman, San Francisco and many other locations, together with running advanced workshops around these themes.

He is an active member of the Moodle community on Moodle.org facilitating the Certification, Business Uses, and Database areas, and is rated as one of the top 100 PHM's (Particularly Helpful Moodler's).

In his spare time he plays tennis, cycles, watches science fiction films, maintains (and sometimes races) his classic 1967 MG, loves travelling to new places, and continues to enjoy learning about and using technology. Stuart can be contacted directly via email: stuart[AT]hrdnz.com