

PHASE 2

Considerations

Analysis of priorities and criteria

This phase offers a series of statements and prompts designed to help you to consider and assess some of the purposes (learning resources, learning processes, learning organisation, administration, and technical) of a learning management system (LMS) and determine a list of priority **features** required to best suit your local interests and needs.

You are encouraged to work through each category and to summarise and prioritise your findings on the sheets provided. By completing this analysis process, you will build up a set of criteria to use when assessing and comparing the vendor matrix of features and technical specifications.

Background

The information and questions are designed to assist schools who may be considering the adoption or adaptation of an LMS for their school. These guidelines have been developed by the Ministry of Education with the assistance of an advisory group and school representatives. They suggest a process of discussion that will help schools to make informed choices about the products and services (**tools**, resources, and **software applications**) that are increasingly available in this area. They aim to encourage schools to consider the type of LMS they might need and where it might fit within the bigger picture: the development of a managed online learning environment (OLE).

As every school will make choices that best match their learners' needs, these guidelines are not intended to provide a full set of answers.

Rather, they prompt a process of exploration and discussion to assist schools in establishing priorities for the selection of a “best fit” learning management system. As this is a rapidly changing area, information provided reflects current understandings of software applications and tools.

Five areas of comparison are provided:

1. Learning with a focus on creating and managing resources and content
2. Learning with a focus on processes to support communication, collaboration, and reflection
3. Learning with a focus on the organisation and management of learning
4. Administration with a focus on organisational, management, and administration issues within the school
5. Technical with a focus on the technical and infrastructure requirements and support needed.

As you work through the list, it is suggested that you give a priority rating to each of the features to indicate the rating identifying highest priority (must have), medium priority (could have), to lowest priority (might have) to assist with LMS comparisons.

1. Learning: Focus on creating and managing resources and content

Requirements	Features and Functionality	Priority	Notes
We'd like to create materials that can be made available in the web environment.	<p>1.1. We want to be able to create web pages easily and quickly by filling in online forms.</p> <ul style="list-style-type: none">• Are online forms accessible to all users?• Does the form offer features that speed up the completion of forms?• Can users work intuitively through the form?• Are users prompted when they haven't entered essential information?• Are users given the opportunity to review and modify the information after submitting it?• Can users add extra information like images, links, and tables?• Do the forms have a time limit? If so, can this be modified for slower users?• Can users enhance their web pages by adding things like forums and attachments?		
	<p>1.2. We'd like to have a text editor available for creating, editing, and modifying online text and layout.</p> <ul style="list-style-type: none">• Will our students be able to create images and text?• Are integrated utilities such as a dictionary, spellcheck, thesaurus, copy-and-paste function, font choices, and styling (for example, bold, underscore, and italics) available?• Can our teachers and students create and publish their own learning materials?		

Requirements	Features and Functionality	Priority	Notes
	<p>1.3 We'd like to be able to import different file formats to have a variety of content available.</p> <ul style="list-style-type: none"> • Could we assign learning materials/sequences to students using data from our SMS? • Could we use data from the asTTle system with this LMS? • Could we import/upload content files and learning materials from other systems easily and in any format? • What content file formats are supported, for example: <ul style="list-style-type: none"> – Microsoft Office, including Word, Excel, and Powerpoint? – Multimedia files, including Flash and Shockwave? 		
	<p>1.4 We'd like to be able to upload multimedia files to our website, including digital images, video, and audio files.</p> <ul style="list-style-type: none"> • What content file formats are supported, for example: <ul style="list-style-type: none"> – Audio and video files such as Windows media, Quicktime, Real Media, WAV files, and MP3 files? – Image files such as jpeg, gif, and tif? 		
	<p>1.5 We'd like to be able to adapt resources "on-the-fly" without having to use other software or programs.</p> <ul style="list-style-type: none"> • Does the presentation of content employ an XML and style sheets approach? • Can we leave items in draft, to return to at a later date? • Can we insert existing material? • Can we add forums, quizzes, and surveys? • Can we prepare material in advance, hiding it to appear when needed? • Can other users add to work in progress? 		

Requirements	Features and Functionality	Priority	Notes
We'd like to access materials from a variety of sources and incorporate them into the learning environment.	1.6 We'd like to be able to create links to web pages and other resources from within our LMS. <ul style="list-style-type: none"> • Can users easily add links to external content within their web pages? • Can the way external links open be easily controlled by users, e.g., in the current browser window, in a new window, in a frame? 		
	1.7 We'd want to make some of the content in an LMS available on our other websites Can content be exported into, for example: <ul style="list-style-type: none"> – our school website? – our school intranet? – a personal computer? – another space? 		
	1.8 We want our environment to handle descriptive information about objects and resources (metadata) so that we can find these resources easily in future.		
	1.9 We'd like to be able to search simultaneously across different databases of resources (federated search), presenting an integrated result.		
	1.10 Other		

2. Learning: Focus on processes to support communication, collaboration, and reflection

Requirements	Features and Functionality	Priority	Notes
We'd like a wide range of tools to be available for communication, collaboration, and reflection and to publish in the web environment.	<p>2.1 We'd like a range of synchronous conversation tools readily available (for example, chat, instant messaging, and video conferencing).</p> <ul style="list-style-type: none"> Will our LMS include: <ul style="list-style-type: none"> a chat function? self-authoring functions? a whiteboard? drawing tools? instant messenger? video conferencing? 		
	<p>2.2 We'd like a range of asynchronous conversation tools available (for example, forums and discussion boards).</p> <ul style="list-style-type: none"> Can forums for asynchronous conversations be created easily? Can they be accessed in the context of the learning activity? Will our LMS include: <ul style="list-style-type: none"> a forum / message board? a collaborative content development suite (mapping input)? a calendar? voting and surveying tools? email groups? tools using existing email accounts? mailing lists? 		

Requirements	Features and Functionality	Priority	Notes
	<p>2.3 We'd like to have tools available that support personal publishing to the web environment.</p> <ul style="list-style-type: none"> Will our LMS include: <ul style="list-style-type: none"> A collaborative content development suite (mapping input)? A blogging function? A Wiki function? Will our students be able to create images and text? Can our teachers and students use the LMS to create and publish their own learning materials? 		
	<p>2.4 We'd like an environment that contains tools for reflection and personal record keeping (for example, an e-portfolio).</p> <ul style="list-style-type: none"> Can the LMS enable teachers and students to create and see their personal portfolios of work? How could materials be exported and imported into these portfolios? Will materials published be able to be viewed in flexible ways? What activity logs can be viewed? Are individual usage reports available? Are the reports exported from the system? Are summaries available for different areas, for example, file type and data volumes? Can a learners' progression through content, for example, a learning object or sequence, be monitored? 		

Requirements	Features and Functionality	Priority	Notes
	<p>2.5 We'd like to incorporate other collaborative tools that are currently available or may become available in the future.</p> <ul style="list-style-type: none"> • Does the LMS enable <ul style="list-style-type: none"> – school-wide viewing/interaction? – syndicate viewing/interaction? – group viewing/interaction? – individual viewing/interaction? – parent/whānau viewing/interaction? 		
	<p>2.6 We'd like to be able to access tools “on-the-fly” rather than having to wait for a technical expert to do the integration for us.</p> <ul style="list-style-type: none"> • How will teachers and students be able to create learning materials offline and upload them to the system? • Is the environment web-based to facilitate this? • What firewall and security considerations have to be taken into account to achieve this, for example, in the area of opening standard ports and using hosted headers? 		

3. Learning: Focus on the organisation and management of learning

Requirements	Features and Functionality	Priority	Notes
We'd like an LMS that will help us to manage our students' learning.	<p>3.1 We'd like an environment that has the potential to support innovative teaching practice as well as existing effective practice.</p> <ul style="list-style-type: none"> • Can the LMS help us to engage our learners and support the learning outcomes we want to achieve as a school? • Can functions and features be added to the LMS later? • Can some functions and features be hidden until we need them? • Can administrators/teachers select different combinations of features for different user groups? • Can the interface be modified easily to meet learner's diverse needs? 		
	<p>3.2 We'd like an environment in which content and activities can be structured sequentially.</p> <ul style="list-style-type: none"> • Can teachers and learners sequence content in different ways for delivery and viewing? • Can the content be presented in different ways for different users? • How can we get more content storage space if we need it? • Can a learner's progression through content, for example, a learning object or sequence, be monitored? • Could we assign learning materials/sequences to students using data from our SMS? 		

Requirements	Features and Functionality	Priority	Notes
	<p>3.3 We'd like an environment in which content and activities can be structured hierarchically.</p> <ul style="list-style-type: none"> • How is content created? • What file formats can be used to create content? • Can learners locate content easily? • Can content authors tag or index their content to help online discovery? • Can IMS packages, for example, The Le@rning Federation's readymade learning objects, be imported? • Can teachers/administrators add new terms to metadata vocabulary lists to support local needs? 		
We'd like an LMS that will help us manage our learners.	<p>3.4 We'd like to be able to assign activities and resources to individuals and groups.</p> <ul style="list-style-type: none"> • Can administrators/teachers select different combinations of features for different user groups? • Are additional costs involved if we add more users? • Is there a limit on how many users can be licensed to access the environment? • Is there a limit on the number of concurrent users at any one time? 		
	<p>3.5 We'd like an environment that enables teachers to create subgroups.</p> <ul style="list-style-type: none"> • Can administrators and teachers easily create groups of users, for example: <ul style="list-style-type: none"> – year groups? – class groups? – community of interest groups? – individual users? – random groups? • Can administrators/teachers select different combinations of features for different user groups? 		

Requirements	Features and Functionality	Priority	Notes
	<p>3.6 We'd like to be able to change membership "on-the-fly".</p> <ul style="list-style-type: none"> • Can we change in bulk? • Can we view a database of all newly enrolled members? 		
We'd like an OLE that will assist our learners' self-management and organisation of learning.	<p>3.7 We'd like an environment where learners can administer and access tools as required to create their own learning activities with their peers.</p> <ul style="list-style-type: none"> • Are there document-sharing facilities? • Can they view and modify activities with each other? • Can they give feedback to each other as individuals and as groups? • Can they view documents and interact at the same time? • Do they have 24/7 access to their work? • Can they upload work designed in, for example, Flash, Word, or Powerpoint? 		
	<p>3.8 We'd like to have available portfolio-building tools that learners have full management rights to.</p> <ul style="list-style-type: none"> • Can they design their own portfolios? • Can learners easily create and locate content? • Can content authors tag or index their content to help online discovery? • Can information about the author be added to learning materials by both the learner themselves and their teacher? • Can this information include digital rights information? • Can authors add this information themselves? • What will be needed to update parent permission forms? • New permission forms? • Will the use of an LMS affect our Internet safety policy? • Will it affect our health and safety policy? • What rights/plagiarism management processes will we need to adopt? 		

Requirements	Features and Functionality	Priority	Notes
	<p>3.9 We need portfolio artifacts that are capable of being imported from and exported to other systems.</p> <ul style="list-style-type: none"> • Is the LMS able to talk to the school's School Management System? • Can we export and import data to tools such as asTTle and the NZQA Record of Learning? 		
	<p>3.10 We'd like a portfolio tool that allows different views to be presented for different purposes.</p> <ul style="list-style-type: none"> • Can the LMS enable individual teachers and learners to create and view personal portfolios of work? • Can materials be easily imported and exported? • Can templates be modified and created from new for publishing and presentation using different design styles and languages? • Can the interface be modified easily to meet the diverse needs of learners? 		
	<p>3.11 We'd like our learners to be able to form their own groups for collaborative work.</p> <ul style="list-style-type: none"> • Can learners enter themselves into particular learning activities? • Can special areas be created for interschool collaboration work? • Can learners create forums for discussion independently? • Can interactive chat be saved and later be seen by absent members or displayed for review? • Can learners invite guests to participate? What are their user name protocols? • Can work be saved, archived, and viewed after a period of collaboration has finished? • Can collaborative work be integrated with several learning activities? 		

Requirements	Features and Functionality	Priority	Notes
	3.12 We'd like our learners to be able to locate people with similar interests. <ul style="list-style-type: none"> • Are search facilities offered? • Can learners create their own profiles? 		
	3.13 We'd like our users to have a private space for storing, drafting, and redrafting work. <ul style="list-style-type: none"> • Can they have 24/7 access? • Can they use their own file management strategies? • Can they independently migrate items from draft to published environments? 		

4. Administration: Focus on organisational, management, and administration issues within the school

Requirements	Features and Functionality	Priority	Notes
We need an LMS that will provide support services for different user groups – learners, teachers, and administrators.	4.1 We'd like a range of support available. This might include in-school, email, telephone, frequently asked questions, online help manuals. Other considerations: <ul style="list-style-type: none"> • Is it easy to navigate through the system without help? • How easy is it for novice users to use? • Are the administration screens and the onscreen information and navigation easy to understand? • Are help information and built-in tutorials available online? • Are they easy for learners to understand and use? • Are the tutorials and help information updated when new features are added? • Is support available online? • Are the instructions written in plain English? • Is the interface suitable for our audiences? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.2 We'd like a system that allows us to create accounts on a web form and to reset passwords using email.</p> <ul style="list-style-type: none"> • What security processes exist? • How are passwords created and stored? Are these encrypted? • How are passwords issued to newcomers? • What happens if users forget their passwords? • Can schools easily add, modify, or delete passwords locally? • Can schools automate password processes, for example, by automatically moving student passwords each year and archiving old passwords? • Is the password system interoperable with the other systems running in the school? 		
	<p>4.3 We need to be able to create group lists easily and remove members from groups and add them to other groups individually or as a group.</p> <ul style="list-style-type: none"> • Can schools upload groups of users to create individual and group passwords? • Will an LDAP system be used for storing the library of users? • Is an individual user profile, with accompanying privileges, created and stored using the system? • Will we be able to use existing student ID numbers? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.4 We need to be able to assign different permissions for various groups and individuals.</p> <ul style="list-style-type: none"> • Can we create areas of the environment that remain private? • Will all teachers and students be given access? • What business rules will be needed for the following: <ul style="list-style-type: none"> – authoring materials? – quality assuring materials? – releasing/publishing materials? – providing passwords? – exporting and publishing materials to an intranet? – exporting and publishing materials to a website? • Is there a limit on the number of concurrent users that can access the system? • If so, what processes are available to monitor and manage access? 		
We need to be able to assess the resource implications of our chosen solution.	<p>4.5 We need options that allow us to assess maintenance contract costs against in-house maintenance costs.</p> <ul style="list-style-type: none"> • Will we need to install regular updates? • Will these be easy to install? • Does the provider manage the installation? • Will school staff need to be trained? • Is it a managed service model (that is, one hosted by a third party supplier)? • Will it be installed on a server in the school? • Can it be installed at our school's ISP? • Who will manage and be responsible for the ongoing maintenance and updating? • Are online monitoring processes involved? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.6 We need the system to integrate with existing software, hardware, and practices – it must be able to share data with our SMS.</p> <ul style="list-style-type: none"> • What are the initial set-up costs? • Is new hardware or software required? • Do these include back-up hardware and software? • Does each feature work in the same way, or are there different processes? • Are integrated utilities such as a dictionary, spellcheck, thesaurus, copy-and-paste function, font choices, and styling (for example bold, underscore, and italics) available? • Can the LMS support standard tools such as Microsoft Office, Word, Excel, and Open Office? 		
	<p>4.7 We need to assess the licensing costs and select the arrangement that best suits our needs (for example, one-off, annual, or per-user costs).</p> <ul style="list-style-type: none"> • What are the ongoing costs of ownership, for example, license fees, traffic fees, transaction-based charges, hosting fees, and managed services costs? • What are the initial set-up costs? • Is new hardware or software needed? • Do these requirements include back-up hardware and software? • What are the installation costs, or are the initial installation and training free? • Will we have to pay for future upgrades and versions? • Are there any “hidden” costs, such as personnel? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.8 We need to have appropriate training and support available for our staff.</p> <ul style="list-style-type: none"> • Who will train our staff? • How long will the training take? • Is online training available? • Does each function have in-built help files and explanations? If so, is this information searchable? • Will training be carried out in the school, or will it involve external locations? If so, where will that be? • If training, or additional training, is needed, what costs are involved? • What will the training involve? What type of school staff needs to attend? • Is there a difference between technical training and user group training? • Are user-friendly training materials available for our staff to use? • Will our staff need to be retrained on new features on a regular basis? • Are online collaborative communities who are familiar with this environment available? If so, how large are these, and what level of support might be available from them? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.9 We need to have server maintenance and management options that are appropriate to our school's needs available to us.</p> <ul style="list-style-type: none"> • Will regular updates need to be installed? • Will these be easy to install? • Who will manage and be responsible for the ongoing maintenance and updating? • Are online monitoring processes involved? 		
We need the users' experience of the platform to be intuitive and without significant barriers.	<p>4.10 We need the system to allow users to have an individual identity and presence on the platform and a strong sense of the identity of others.</p> <ul style="list-style-type: none"> • Can users upload images of themselves? • Can they independently modify such personal details as their email address? • Can they view lists of other learners in their online environment? • Does the system support private messaging facilities? • Does the system alert those receiving incoming personal messages? • Are authors named, for example, authors of discussion threads or work entries? • Can learners choose to add their image to specific discussion threads? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.11 We need the system to allow users to have a strong sense of the audience for their work when private, published in small groups, or published on the Web.</p> <ul style="list-style-type: none"> • Is the system learner-centred and flexible? • Does it foster flexible authoring? • Does it support collaboration and communication? • Does it allow learners to customise their work? • Is there a members' area? • Can learners provide feedback to each other? • Do they have open chat facilities to discuss work? • Is their work secure, or can other users modify it at will? • Can any modification rights that others have be monitored? 		
	<p>4.12 We need navigation around the platform to be simple and intuitive.</p> <ul style="list-style-type: none"> • How does the LMS support novice users? • Are the administration screens and the on-screen information and navigation easy to understand? • Are the instructions and documentation written in plain English? • Is the interface suitable for our audiences? • Does each feature work in the same way, or do they have different processes? 		
	<p>4.13 We need the system to meet the accessibility standards for learners with special educational needs.</p>		

Requirements	Features and Functionality	Priority	Notes
	<p>4.14 We need the system to be accessible using school intranets and also on the Web, for “anywhere, anytime” access.</p> <ul style="list-style-type: none"> • Is 24/7 support available in my region, and what is the cost? • Can the LMS be accessed using the school’s existing extranet? • If so, how will this be enabled? For example, can the same password be used? 		
	<p>4.15 We need the platform to offer different language options and support macrons.</p> <ul style="list-style-type: none"> • Does the platform support the use of special characters? • Is the LMS compliant with UTF.8? • Does it support the correct use of macrons for both content creation and searching? 		
	<p>4.16 We’d like the system to notify us of new content and contributions.</p> <ul style="list-style-type: none"> • Can users be alerted to new content and contributions via: <ul style="list-style-type: none"> – a single alerts page? – email? – rss? 		
	<p>4.17 We’d like the system to allow for searching and bookmarking of relevant items.</p> <ul style="list-style-type: none"> • Does the platform support federated searching? Is it reliable? • Does it allow for bookmark lists from external searches to be created? 		

Requirements	Features and Functionality	Priority	Notes
	<p>4.18 We'd need to be able to assess the options for hosting the system in light of our school's needs (that is, local hosting or third party hosting).</p> <ul style="list-style-type: none"> • What other systems does the LMS need to connect with, for example, the school's: <ul style="list-style-type: none"> – management system (SMS)? – planning and reporting tools? – assessment tools? – website? – intranet? – extranet? – library system? – timetabling system? – attendance recording system? – password management system? – resource booking system? – finance system? – library and information systems? – content management system? 		

5. Technical: Focus on the technical and infrastructure requirements and support needed

Requirements	Features and Functionality	Priority	Notes
We need an LMS that will take account of our technical preferences.	5.1 We'd prefer our LMS to run on the server that already runs our SMS and/or intranet and/or email and/or website. <ul style="list-style-type: none"> • What server capacity is required? • What level of technical support will be necessary? • How are services such as back-up, firewalls, and external access handled? 		
	5.2 We'd prefer a hosted service contract. <ul style="list-style-type: none"> • What are the fixed/flexible costs of the hosted service? • Would the managed service provider look after the LMS as well? • Does it conflict with or duplicate the services already provided? • Are any problems likely to arise from mixing systems and providers? 		
	5.3 We want a reliable and cost-effective back-up and retrieval regime in place. <ul style="list-style-type: none"> • Does the disaster recovery plan include off-site back-up? • How long would the service be down if there were a problem? 		
	5.4 We would prefer (prioritise one): <ul style="list-style-type: none"> (a) an open source (b) a proprietary solution. • What level of technical support is available for this product? • How comfortable are we about the longevity of the product and the data stored within it? 		

Requirements	Features and Functionality	Priority	Notes
We need an LMS that will provide our chosen platform specifications.	5.5 Does the product use open standards ? <ul style="list-style-type: none"> Are there future-proofing processes we should consider? For example, will our LMS be accessible by mobile phones, smart phones, and PDAs? Do the standards used within the product conform to internationally recognised open standards that will allow for data to be exchanged with other products and will allow other tools or functions to be included as they become available? 		
	5.6 What protocols will be used by our LMS, for example: <ul style="list-style-type: none"> TCP.IP? SOAP? Active X? LDAP? 		
	5.7 Does the LMS support a range of multimedia formats, for example: <ul style="list-style-type: none"> image files like jpeg, tif, and gif? video files like Quicktime, Windows media, and Imovie? audio files like MP3, Quicktime, and WAV? interactive files like Flash and Shockwave? office files like Word, Excel, Adobe, and Powerpoint? open source office files such as Star Office files? html pages? other files from applications like Inspiration? How does the LMS handle streaming media files, webcasting, desktop video conferencing, and VOIP activity?		

Requirements	Features and Functionality	Priority	Notes
	<p>5.8 What searching tools are available?</p> <ul style="list-style-type: none"> Does it allow: <ul style="list-style-type: none"> free text searching? metadata-based searching? a blend of both? How is content tagged and indexed for retrieval? What flexibility is available in searching, for example, by heading, file type, level, and resource type? If metadata-based searching is possible, how is the metadata created and stored? Is the metadata standards-based, for example, Dublin Core, NZGLS, and LOM? 		
	<p>5.9 Can the product be customised to meet local/contextual needs?</p> <ul style="list-style-type: none"> Can changes to content/interface be made easily? What happens to the original version? Can it be retained? Can new versions be created without overwriting previous versions? Is a toolkit provided to add, amend, delete, and reversion the look and feel of the content/interface? 		
	<p>5.10 Is there a continual development plan?</p> <ul style="list-style-type: none"> How will new functions be decided? Does the provider invite feedback in this area? Is there an active web development community supporting work in this area? Does this reside in New Zealand and/or in another country? 		

Requirements	Features and Functionality	Priority	Notes
	<p>5.11 What is the upgrades plan?</p> <ul style="list-style-type: none"> • How often will upgrades be provided? • What processes exist for updates and patches? • How is information about updates provided? • Will updates remain backwardly compatible with older content and functions? • Will there be regular updates to install? If so, will these be easy to install? • Who will manage and be responsible for the ongoing maintenance and updating? • Are online monitoring processes involved? 		
	<p>5.12 What about scalability?</p> <ul style="list-style-type: none"> • Is there a limit on how many people can use the system simultaneously? • How many concurrent users can be supported? • Is information available about expected response times and performance times at different loads? • Are additional costs involved if more users are added? • If more content storage space is needed, how is this addressed? • Is there a limit on how many users can be licensed to access the environment? • Will accessing the environment from outside the school be slower? 		

Requirements	Features and Functionality	Priority	Notes
	<p>5.13 What about accessibility?</p> <ul style="list-style-type: none"> • What accessibility standards are required, for example: <ul style="list-style-type: none"> – W3C level compliance? – equality of access for low-vision students? – equality of access for those with older computers? – support for low-speed Internet access? – support for access by a range of browsers, including versions of Internet Explorer, Firefox, Safari, and Mac Internet Explorer? • Will the LMS be able to conform to our expectations in these areas, for example, will older browser baselines need to change? • Is it important that the LMS be SCORM compliant? If so, why? • Are standard plug-ins usable, for example, Flash, Shockwave, and Quicktime? • Is content searching and discovery supported by standards-based metadata? • If so, is this using Dublin Core metadata, NZGLS, or Learning Object metadata (LOM)? • Do schools need to consider any other standards when assessing the LMS? 		

Requirements	Features and Functionality	Priority	Notes
	<p>5.14 Is there interoperability?</p> <p>We currently use a database in our school to hold such information as student records, timetabling, and assessment information.</p> <ul style="list-style-type: none"> • Will this be interoperable with the LMS? • Could they share the same database system, for example: <ul style="list-style-type: none"> – SQL Server? – Oracle? – MySQL? – Other? <p>If the LMS does not work with our current server system or our databases, what can we do to avoid having to manage multiple systems?</p> <ul style="list-style-type: none"> • What processes could the school follow to explore interoperability? • Is special programming available to connect systems? • Is the LMS service web-based to support interoperability? • What information is available about applications that are compatible? 		
	<p>5.15 Can we transfer content to another system?</p> <ul style="list-style-type: none"> • Is the content within the system stored in XML format? • Does the system recognize SCORM-created content? 		

Requirements	Features and Functionality	Priority	Notes
	<p>5.16 What about server administration?</p> <ul style="list-style-type: none"> • Can we use our existing server to hold the LMS and the associated content? • Will a larger server be needed? • Is a special server needed? If so, what platform will this be, for example: <ul style="list-style-type: none"> – Windows? – Linux? – Unix server? – MacOSX? – Other? • Is the LMS software cross-platform? • Will our IT person need to learn new skills? 		
	<p>5.17 What about security and firewalls?</p> <ul style="list-style-type: none"> • Will changes be needed to the school's firewall and anti-virus systems? • Does the system use standardised ports and hosted headers? • What new risks will a web-based LMS introduce? 		
	<p>5.18 Can we use and present the Māori language correctly online?</p> <ul style="list-style-type: none"> • Does the system support the correct display of macrons? • Is it UTF.8 compliant? • Can content be searched with and without using a macron? 		

GLOSSARY

Active X

A system developed by Microsoft that transfers data between different applications and is also commonly used by web designers to embed multimedia files in web pages. Active X is the original name for Object Linking and Embedding (OLE)

Acrobat Reader

The former name of Adobe Reader (See below)

Adobe

A software company that provides a range of products for creating digital media as well as editing, multimedia authoring, and web development. It is probably best known for Adobe Acrobat, Adobe Flash and, more recently, Breeze, which it has acquired from Macromedia (See the definitions below)

Adobe Reader

A free application distributed by Adobe Systems that allows you to read PDF files

Application

The term often used to refer to a computing program that is designed to fulfil a particular purpose (for example, a word processor, which is an application for creating written documents)

asTTle

Assessment Tools for Teaching and Learning - an educational resource for assessing literacy and numeracy (in both English and Māori) developed for the Ministry of Education by the University of Auckland

Blog

A personal online journal that is frequently updated and is intended for general public consumption (also called a weblog). Blogs are defined by their format: a series of entries posted to a single page in reverse chronological order. They generally represent the personality of the author or reflect the purpose of the website that hosts them

Blogging function

The characteristics of a blog that can be incorporated within other web applications (such as the ability to comment on entries, to archive, and to tag)

Bookmarking

Marking one's place in an electronic document or using a pointer (primarily to an internet URL) in an internet web browser

Breeze (or Adobe Breeze)

A web conferencing system that can be customised to the user's needs, which may include video conferencing, chat functions, collaborative editing, and presentation software

Content management system/repository

A computer software system that will organise and facilitate the collaborative creation of documents and other content. It is sometimes a web application used for managing websites and web content, though many content management systems require special client software for editing and constructing articles

Digital resources/content

Any form of content/resource that is created and stored in a digital format. Digital resources include such items as:

- electronic books
- online journals
- audio files (such as wav and mp3)
- images (such as tiff and gif)
- movies (such as mpeg and Quicktime)
- reference texts (such as dictionaries and directories)

Dublin Core

An initiative to create a digital “library card catalogue” for the Web that is made up of 15 metadata (data that describes data) elements that offer expanded cataloguing information and improved document indexing for search engine programs

e-Learning Action Plan

A document released by the Ministry of Education in July 2006 that outlines the key outcomes and actions for e-learning in the New Zealand school sector for 2006-2010. It describes the goals for e-learning in schools and the projects, tools, and resources that are being developed to help schools to reach these goals

Encrypted

Converted into a coded form that cannot be interpreted without the secret method for interpretation, called the key. Software can be encrypted to protect it from being altered or pirated

EPIC

Electronic Products In Collaboration, a venture between New Zealand libraries and the Ministry of Education that gives schools free access to a range of electronic resources, including some New Zealand content. Designed to support teaching and learning, EPIC is available to all New Zealand schools

Excel

A spreadsheet program (full name Microsoft Office Excel) written and distributed for Apple Macs and PCs. It features an intuitive interface and capable calculation and graphing tools

Extranet

A private network that will securely share part of an organisation’s information or operations with suppliers, vendors, partners, customers, or other businesses: “a private internet over the Internet”

Feature

A specific “capability” or “tool” of a software program. Features within a word processing program, for example, include the ability to cut and paste, insert graphics, and insert tables

Firefox

A free, open-source, cross-platform web browser that is a popular alternative to Microsoft’s Internet Explorer and Apple’s Safari

Flash

An application for adding animation and interactivity to web pages that is commonly used to create animation, adverts, and various web page components, to integrate video into web pages, and, more recently, to develop rich internet applications such as portals. It is also referred to as Adobe Flash

Gif

A format for representing photographs and animations that uses up to 256 colours. It is often used to make small animations and short, low-resolution films for web pages and remains the only format that supports transparent images in almost all web browsers (See also Jpeg)

ICT

Information and Communications Technology, a broad subject area concerned with technology and other aspects of managing and processing information

iMovie

A video editing software application created by Apple Computers that allows users to edit their own home movies

IMS (or IMS/GLC)

An international consortium working to develop specifications for e-learning/online learning applications. Its formal name is IMS Global Learning Consortium, Inc., also sometimes referred to as IMS/GLC. The original name, when IMS first started in 1997, was the Instructional Management Systems (IMS) project

INNZ

Index New Zealand, an index that lists information about articles published in about 300 New Zealand newspapers, magazines, and journals, mainly since 1987

Interface

The way in which a computer application is represented to the user on screen

Internet Explorer

An internet web browser, often abbreviated as IE, that was developed by Microsoft Corporation

Interoperability

The ability of two or more systems or components to exchange information and to use the information that has been exchanged

ISP

An Internet Service Provider such as Xtra, Clear, or Paradise

Jpeg

Short for Joint Photographic Experts Group, a commonly used standard format for compressing photographic images (See also Gif)

LDAP

Lightweight Directory Access Protocol, a software protocol for enabling anyone to locate organisations, individuals, and such other resources as files and devices in a network, whether on the public Internet or on a corporate intranet. Because LDAP is an open protocol, applications need not worry about the type of server hosting the directory

Learning Management System (LMS)

A software package to manage and deliver learning content and resources to students, usually comprising a variety of applications amalgamated as an “integrated” package and used within a managed OLE (See also VLE)

Learning object

Variously defined as:

- Any entity, digital or non-digital, that may be used for learning, education, or training
- Self-contained, reusable, digital content used to support learning
- Web-based interactive chunks of e-learning designed to explain a stand-alone learning objective

Linux

A Unix derivative, available in both “free software” and commercial versions, which is increasingly used as an alternative to proprietary operating systems

LOM

Learning Object Metadata, the attributes required to fully/adequately describe a learning object and make it discoverable within a content management system

Mac Internet Explorer

A version of Microsoft Internet Explorer developed for the Mac operating system. It is no longer in active development and is now seldom used on Apple computers

MacOSX

The operating system for Apple Computers. It is the successor to the original Mac OS, which had been Apple’s primary operating system since 1984

Metadata

The term used to describe data about data, such as who collects the data, what the data contains, where (and how) the data is stored, when (and how often) the data is collected and why

Microsoft Office

A suite of computer applications, including Word, Powerpoint, and Excel, that was developed by Microsoft for use on PCs or Macs

MP3 files

A recording format for audio files that is easily shared on the Internet

MySQL

An open source relational database management system (See also SQL)

NZGLS

The New Zealand Government Locator Service, the metadata standard that is the official New Zealand government standard for creating discovery-level metadata

NZQA Record of Learning (ROL)

A recording system whereby a learner enrolling in a programme has their details and registration fee forwarded to NZQA. They are registered on the NQF for a Record of Learning and given a unique learner identification number called a National Student Number (NSN). Learners can accumulate Framework credits over a number of years and from many providers to complete a qualification. An ROL provides an employer with a profile of a learner's achievements

On-the-fly

In relation to computer technology, a phrase to describe activities that develop or occur dynamically rather than as the result of something that is statically predefined. For example, the content of a page sent to you from a website can be developed (and varied) on-the-fly, based on dynamic factors such as the time of day, what pages the user has looked at previously, and specific user input

Open Office

A suite of applications that consists of a word processor, a spreadsheet, a presentation programme, a graphics editor, and a database. It intended to be a compatible, free alternative to Microsoft Office

Open Source Software (OSS)

Software for which the source code is publicly available and free of charge

Open standards

Sometimes referred to as open formats, the process of establishing a technical standard among competing entities in a market where this will bring benefits without hurting competition. Open standards can be implemented by anyone, without royalties or other restrictions

Operating system

A software programme that manages the hardware and software resources of a computer

Oracle

The Oracle Corporation, founded in 1977, which is an American-based company with offices in more than 145 countries around the world and is one of the major companies developing database management systems

PDA

A Personal Diary Assistant, sometimes known as a Personal Digital Assistant

PDF

Portable Document Format, a file format developed by Adobe Systems. It captures formatting information from a variety of desktop publishing applications, making it possible to send formatted documents and have them appear on the recipient's monitor or printer as they were intended. To view a file in PDF format, you need Adobe Reader, a free application distributed by Adobe Systems

Platform

Used in relation to the framework on which applications may be run

Powerpoint

Presentation software developed by Microsoft as part of the Office suite

Proprietary

In information technology, a technology or product that is owned exclusively by a single company, which carefully protects its knowledge about the technology or the product's inner workings

Quicktime

A multimedia framework developed by Apple Computers that is capable of handling various forms of digital video, media clips, sound, text, animation, and music

RDF

Resource Description Framework, a general framework for describing a website's metadata, that is, the information about the information on the site

Real Media

The term used to describe the digital media formats used by the Real company. RealAudio and RealVideo formats are collectively called RealMedia

Repository/content management system

A computer software system for organising and facilitating the collaborative creation of documents and other content. It is sometimes a web application used for managing websites and web content, though many content management systems need special client software for editing and constructing articles

Resource assets

The individual elements contained within an online resource or learning object (that is, the separate text, image, audio or video elements)

RSS

RDF Site Summary or Rich Site Summary, an XML format for syndicating web content. A website that wants to allow other sites to publish some of its content creates an RSS document and registers the document with an RSS publisher. A user that can read RSS-distributed content can then use the content on a different site

Safari

A web browser developed by Apple Computers

SCORM

Sharable Content Object Reference Model, a collection of standards and specifications for web-based e-learning. It defines communications between client side content and a host system called the run-time environment (commonly a function of a learning management system). SCORM also defines how content may be packaged into a transferable ZIP file

Shockwave

A multimedia player that preceded Adobe Flash, originally called Macromedia Flash. Although Shockwave was designed for making a wide variety of online movies and animations, its actual use has become concentrated in the area of game development

Single sign-on / log-on

A specialised form of software authentication that enables a user to authenticate once and gain access to the resources of multiple software systems

SMS

A Student Management System, which is administration software that schools use for such functions as registration and enrolment, tracking attendance, and recording marks

SOAP

A Simple Object Access Protocol, which provides a way for applications to communicate with each other over the Internet, independent of platform

Social software

The networking and communications software that people use to collaborate online, such as blogs, wikis, or instant messaging. It is often referred to as Web 2.0 applications or social networking software

Software

The programmes and other operating information used by a computer

SQL Server

Structured Query Language, a language used to interrogate and process data in a relational database

Star Office

An office suite software package developed by Sun Microsystems. It is the proprietary version of the open source Open Office with some additional features. The program includes a word processor, a spreadsheet, presentation software, a drawing tool, and a database

Style sheet

A definition of a document's appearance in terms of such elements as the default typeface, the size and colour for headings, and the body text

TCP/IP

A set of protocols (including TCP) developed for the Internet to get data from one network device to another

The Le@rning Federation

An initiative that is a result of an agreement between all education Ministers in Australia and New Zealand to collaborate in developing online curriculum content for Australian and New Zealand schools and to deliver it electronically for the period 2001–2006

Tif

Tagged Image File Format, a file format for storing images, including photographs and line art. It is a popular format for high-colour-depth images, along with JPEG and PNG

Tool

A software feature that carries out a particular function
(See feature)

Unix

The most popular multi-user computer Operating System (OS) in use today, originally developed at AT&T Bell Labs

Unix Server

A medium-to-large-scale computer system in a network that runs under Unix

UTF- 8

Eight-bit Unicode Transformation Format variable-length character encoding for Unicode, which uses groups of bytes to represent the Unicode standard for the alphabets of many of the world's languages

Video conferencing

A set of interactive telecommunication technologies that allows two or more locations to interact via two-way video and audio transmissions simultaneously

Virtual learning environment (VLE)

A set of teaching and learning tools designed to assist teachers in the management of courses for their students, especially by helping teachers and learners with course administration. The terms VLE and LMS are often used interchangeably

VLN

The Virtual Learning Network, a web-based brokerage service established in 2002 by the Ministry of Education's Tertiary (e)Learning team to facilitate the sharing of information about courses provided by educational organisations, using video conferencing facilities

VOIP

Voice Over Internet Protocol, which is any technology that provides voice telephony services over the Internet or any other IP-based network. The major advantage of VOIP is the lower cost, because it does not use dedicated voice circuits

W3C

World Wide Web Consortium, an industry consortium that seeks to promote standards for the evolution of the Web and interoperability between web products by producing specifications and reference software

WAV files

A common abbreviation for Waveform, which refers to an audio file format designed to store audio recordings

Web2.0

A collective term for a variety of design patterns and business models for the next generation of software. It is most closely associated with those applications that promote or enable participation, collaboration, social networking, and user determination and control

Web services

A software system designed to support interoperable machine-to-machine interaction over a network

Web tools

Software that is either web-based or desktop and is designed for the purpose of automating and/or enhancing webmaster related tasks such as website design

Wiki

A website or similar online resource that allows users to add and edit content collectively (for example, Wikipedia)

Wiki function

The characteristics of a wiki that can be incorporated within other web applications (such as collaborative content development)

Windows

A family of operating systems by Microsoft, which currently dominates the PC market (See Operating system)

Windows media

A multimedia framework for media creation and distribution for Microsoft Windows. WMV (Windows Media Video) files are one of the most popular ways of sharing videos on the Internet

Word

Microsoft Word or Microsoft Office Word, which is Microsoft's flagship word processing software

XML

Extensible Markup Language, a flexible way to create common information formats, which allow documents to be easily interchanged on the Web