LMS Consolidation for Dispersed Workforce Article

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Consolidating Learning Management Systems for a Dispersed Workforce

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As organizations move from a fragmented information culture, they need an enterprise learning management system (LMS) that will consolidate all learning initiatives and scale to meet the needs of large, widely dispersed learner communities. When selecting the application for LMS consolidation, scalability (the degree to which the LMS can handle an increase in the volume of instruction and the size of the student body and still function properly) becomes an essential consideration.

LMS consolidation can accomplish three important objectives:

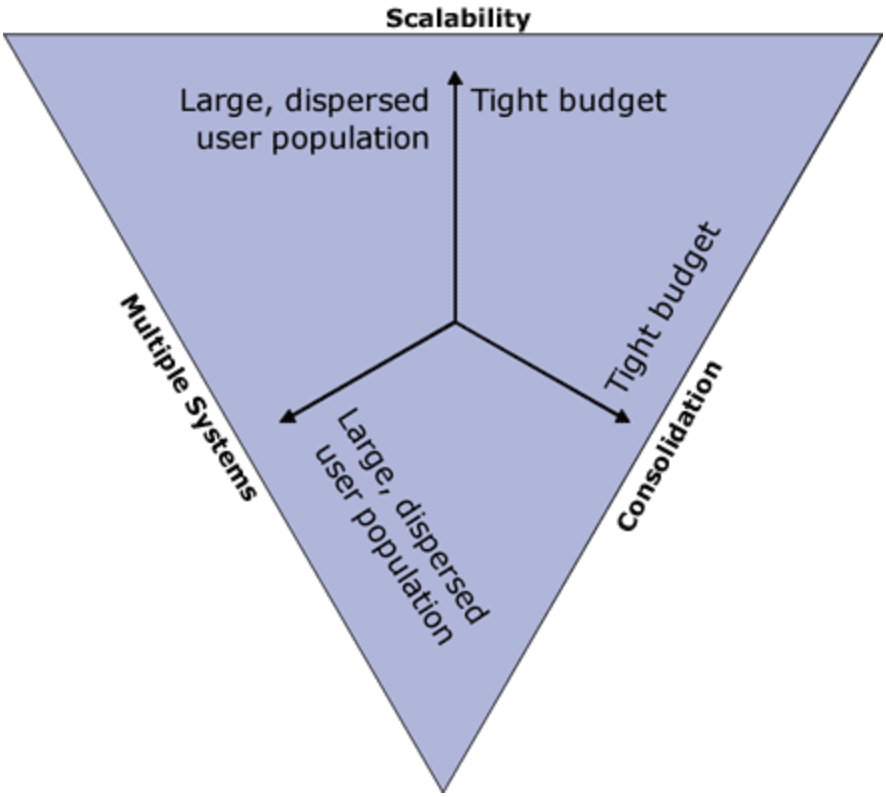
- Transition to other lower cost modes of learning (Web-based, blended learning);
- Reduce administrative costs; and
- Help demonstrate ROI.

By bringing training populations together under the best LMS for delivering training in all modes, more training can be brought online than before the consolidation. Shared corporate learning objectives (compliance issues, workplace safety, diversity training, etc.) can now be delivered to all staff in the lowest cost format, whether that format is a Web-based module, instructor-led, CD-based or virtual classroom. In some cases, maximum effectiveness and savings can be achieved by blending different modes together in a series. An LMS consolidation also provides a centralized location to share and manage external resources, such as informational Web sites, that can provide supplemental information.

A consolidated LMS can reduce administrative costs by centralizing learning management and eliminating duplicate processes and redundant effort. In addition, a single system can ensure that training best practices are shared and embedded in streamlined processes. With a consolidated LMS, it is easier to bridge skill gaps across departments or the organizational units. If different geographical regions or business units are managed under the same system, it would be more difficult to see at an organizational level, how the company is doing regarding customer service training, for example.

Scalability

As shown by the illustration in Figure 1, scalability becomes an important factor that can resolve the tension between addressing the needs of different learning populations and keeping under a tight training budget.



One response to a tight corporate training budget is consolidation of LMSs to reduce licensing, hosting, maintenance, and support costs, as well as streamline training processes in the organization. System consolidation brings different learning groups together - groups with different training needs. The LMS to which users are consolidated must have functional scalability so that the needs of the different learning groups are met as was the case with multiple LMSs, when each group's needs were met by a different, dedicated LMS.

What makes an LMS functionally scalable? When selecting an LMS for a company-wide enterprise implementation, an organization must consider both functional and performance of scalability. Performance scalability is measured by response times given a number of concurrent users and a given hardware configuration. Evaluating functional scalability requires a more subjective approach that measures the effort, time and cost to administer learning for an additional number of users or a new group of users.

Functional Scalability

To the extent that a consolidated LMS can handle a larger number of disparate learner populations without increasing administrative costs, the LMS can be considered functionally scalable. For example, if a manager would like to identify the training needs of a large number of staff at several different corporate locations, is there an interface or function in the LMS that allows the manager to accomplish this easily? An LMS that allows that manager to group or organize the staff in many different ways in a single view to see skill or competency gaps that exist at an organizational level is much more scalable than one that requires the manager to access several different views and run several different reports to put together a department-level training plan.

As the user population increases, limitations in software design begin to surface. Scrolling through a few pages of a user profile listing didn't seem so bad when there are a thousand similar users. When the number increases on the heels of an enterprise-wide LMS consolidation to 20,000 users that vary in their training and learning needs, then the limited scalability of the LMS to cope with this change increases administrative costs and effort. Even if response times for performing an action are still reasonable, the number of actions the administrator or manager must perform to accomplish a training objective has increased.

Maintaining data feeds from enterprise resource planning (ERP) applications, human resource information systems (HRIS) and different reporting tools to three or four different LMSs can require dozens of data feeds. By untangling the many-to-many data feed relationships among systems, an LMS consolidation can greatly reduce the overhead and system administration associated with these data feeds. If the consolidation can eliminate manual data feeds, from third-party vendors for example, substantial administrative costs can be eliminated.

Performance Scalability

To this point, we have discussed scalability from a software design perspective and its impact on enterprise-wide systems. However, the design of the LMS itself is as important as platform or architecture when considering how easy it will be to manage the learning requirements of the users.

When evaluating a potential LMS's scalability, it is important to understand what claims about supported users a vendor is making and what they mean. If they are talking about an implementation with 100,000 users, these are most likely named or active users, not concurrent. In many ways, however, even if a vendor claims that it supports 5,000 concurrent users, this metric does not provide a complete view of an LMS' true scalability.

Why does an organization care about performance scalability in the first place? Primarily, it requires that the LMS perform at a certain level. When a user registers for a course, or takes a Web-based course, or reviews course history, the LMS must respond in a reasonable time if users are to accept and get any value from the LMS. Several interacting factors impact performance. As mentioned, the LMS itself has a degree of scalability related to it. Platform and system architecture both impact scalability.

Greater performance scalability reduces the cost of hardware that would be required to maintain response times. Any significant increase in the number of active users will require an additional processor or two to preserve LMS performance. However, a less scalable system will need a more substantial increase in hardware to maintain the same level of performance for a comparable increase in the learner base.

A platform is scalable if it can maintain response time when user traffic increases by increasing hardware resources. A platform is less scalable if larger hardware resource increases support modest user traffic increases. Although industry analysts and LMS vendors may assert that either .NET or J2EE is more scalable than the other, the development platform is less relevant for scalability than the underlying software design or databases engine. A poorly architected J2EE LMS will probably perform worse than a better designed .NET LMS and vice versa. For example, DaimlerChrysler Academy Learning Center is a .NET-based LMS that manages learning for 250,000 (2,500 concurrent) corporate and dealership users.

How can a buyer tell how well an LMS has been architected? Understanding scalability can help. When scalability numbers are cited by a vendor, a buyer can ask questions to determine how much hardware power current clients of the vendor are using, what the number of concurrent users are for that client, and what response time they are getting. One way to arrive at a more apples-to-apples comparison between different clients of different vendors is to break down the hardware configurations and users into number of concurrent users per processor.

Scalability results primarily from a well-designed multitier architecture (see Figure 2).

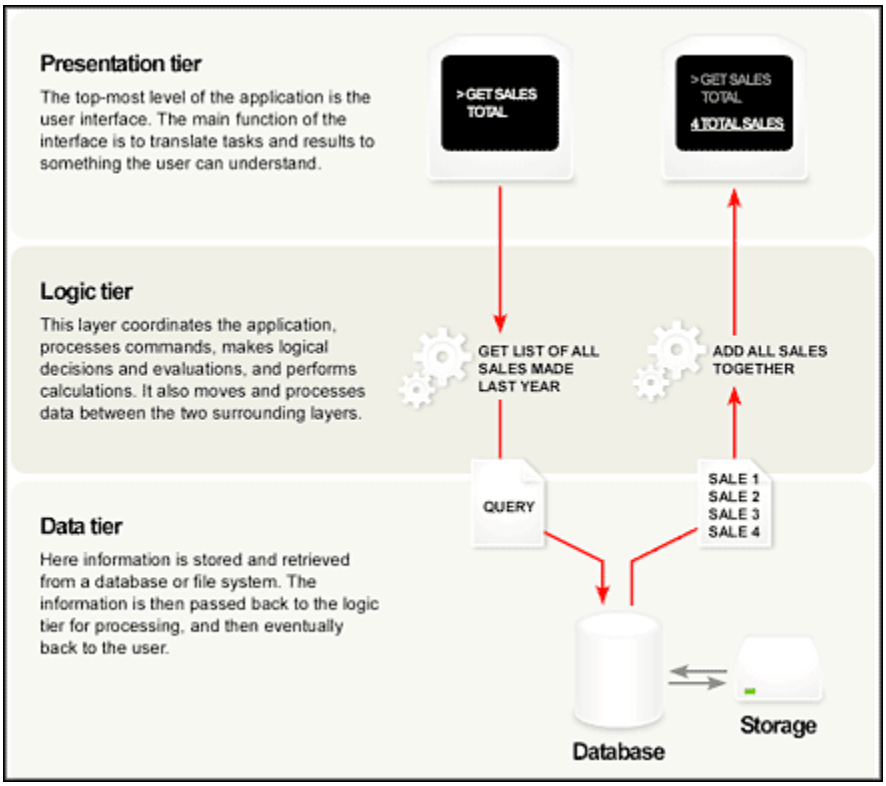


Figure 2: Well-Designed Multitier Architecture

For a Web-based system that can serve the widest range of client machines, a multitier architecture consists of Web browsers pointing to Web servers that present data (presentation tier) that application servers (logic tier) read from and write to databases (data tier). An organization can scale a well-designed LMS by adding computing power at any tier. A poorly designed LMS that, for example, makes logical decisions and calculations in the presentation tier instead of the business tier creates a performance bottleneck that adversely affects scalability.

Scalability and Concurrent Users

Frequently, scalability is given in terms of active (or named) and concurrent (or simultaneous) users. Are concurrent users those individuals that are currently logged onto the system? Stored in the system LMS user database? Often an LMS vendor and a prospect or client may have different ideas of what constitutes an active, concurrent, or simultaneous user. For scalability purposes, an active user is one that is stored in the database and whose record needs to be scanned (queried) when an operation is performed in the system. (e.g., an administrator wants to run a report of all users that have completed a particular course.) Concurrent users are performing some action in the LMS at the same time. One user may have just selected the submit button to register for a course while another user has just selected the start button to begin taking an online course while the system is in the process of reporting course history to another user and so on. At any given moment, all the users that the system is working for, doing something in response to a request, all of those users are concurrent at that moment in time. Methods of estimating concurrent users from the number of active users varies, but the number of concurrent users tends to be much lower (a hundredth, for example) than the number of active users.

Standardized Reporting Structure

Administrative and training delivery cost reductions as a result of LMS consolidation can positively affect the cost side of the ROI equation. LMS consolidation can also positively affect the revenue side of the equation.

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By consolidating the LMS and reducing the number of data feeds to the LMS, an organization can more easily adopt a cross-functional corporate reporting and data management strategy. A reporting structure with standardized data formats makes it much easier to combine training and nontraining data and align training results with performance results. A consolidated, comprehensive reporting system can track course completion, certification and assessment scores of the LMS with the evaluation and competency data in a performance management system. Likewise, reports can combine standardized LMS data with business results from other corporate systems.

LMS consolidation can reduce administrative costs of managing dispersed and large learner populations. Consolidation centralizes the learning management and eliminates duplicate processes and redundant effort. When selecting an LMS candidate for a consolidation initiative, both functional and performance scalability must be considered. When evaluating performance scalability in particular, an organization must be careful, question the vendor of the LMS candidate and ensure that the organization can afford the hardware or hosting solutions required to handle all learner populations.

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