

# A Survey on How Blackboard is Assisting Educational Institutions around the World and the Future Trends

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**Abstract**— The advancement in technology has been changing the way of teaching as well as learning since late 1990s. Recent statistic show that the use of web-based instruction as a supplement to face-to-face instruction or full online course has increased rapidly. This is apparently because, students in online learning conditions perform better than those receiving face-to-face instruction, on average. Blended conditions often include additional learning time and instructional elements not received by students in control conditions. This paper, surveys how Blackboard, the most common web-based learning management system (LMS), is assisting educational institutions around the world in their educational endeavours. It also attempts to predict future evolvement of LMS based on usage trends and technology advancement.

**Keywords**— Blackboard, LMS, Learning Management System, Blackboard Usage, WebCT

## I. INTRODUCTION

The advancement in technology has been changing the way of teaching as well as learning since late 1990s. Recent statistic show that the use of web-based instruction as a supplement to face-to-face instruction or full online course has increased rapidly. This is apparently because, students in online learning conditions perform better than those receiving face-to-face instruction, on average. Blended conditions often include additional learning time and instructional elements not available to students in control conditions.

Online learning overlaps with the broader category of distance learning, which encompasses earlier technologies such as correspondence courses, educational television and videoconferencing. Earlier studies of distance learning concluded that these technologies were not significantly different from regular classroom learning in terms of effectiveness. Policy-makers reasoned that if online instruction is no worse than traditional instruction in terms of student outcomes, then online education initiatives could be justified on the basis of cost efficiency or need to provide access to learners in settings where face-to-face instruction is not feasible. The question of the relative efficacy of online and face-to-face instruction needs to be revisited, however, in light of today's online learning applications such as the Blackboard, which takes advantage of a wide range of Web

resources, including not only multimedia but also web-based applications, mobile and new collaboration technologies. These forms of online learning which use software for delivering, tracking and managing lectures are a far cry from the televised broadcasts and videoconferencing that characterized earlier generations of distance education. Today, LMS have become an integral component of the education systems in most universities and interest in hybrid approaches that blend in-class and online activities, is increasing [1]. Accordingly, 91% of the approximately 4800 universities in the US have installed LMS.

## II. AIRMING

In this research, we focus investigating the current usage of Blackboard learning system and the way that it helps various educational institutions around the world. Result of this study may help us achieve the following goals:

- a. Gain an understanding of Blackboard Learning System profiles.
- b. Gain an overview of LMS market segment.
- c. Explore how Blackboard is helping educational institutions around the world.
- d. Analyze and study the trend of Virtual Learning Environment (VLE).

To maintain the quality of this report, most of market share reference data had been taken from The Instructional Technology Council. The council has a large number of member colleges and universities over USA and publishes official LMS survey report annually. Other valuable data sources are delta initiative, U.S. Department of Education and Blackboard case studies [1-6].

## III. SURVEYS

### A. Blackboard LMS

Blackboard learning management system, also defined as a virtual learning environment is developed and maintained by Blackboard Inc [7]. It is a software product that enables educational institutions to create Internet-based learning programs. It has customizable open architecture and a scalable design that allows integrating with student information systems and authentication protocols. The software connects teachers, students, parents, and administrators via the Web, enabling Internet-based assignments, class web sites, and online

collaboration with classmates. The software also assists instructors with course administration and includes a content management system for creating and managing digital course content. Lecture notes, additional materials in note form, reading assignments, and library materials are distributed through the Blackboard. The Blackboard is also used to administer examination, conduct course evaluation and submit students' grade, among many other things [8].

### B. Blackboard Share in the LMS Market

As can be observed from Figure 1, most of the LMS products have been created in late 1990s and are rapidly growing. Blackboard, despite having the biggest share among the market player acquired Prometheus in 2001, WebCT in February 2006 and Angel Learning in May 2009. It now dominates the LMS market; having around 80% share among US universities and over 50% among all the universities around the world.

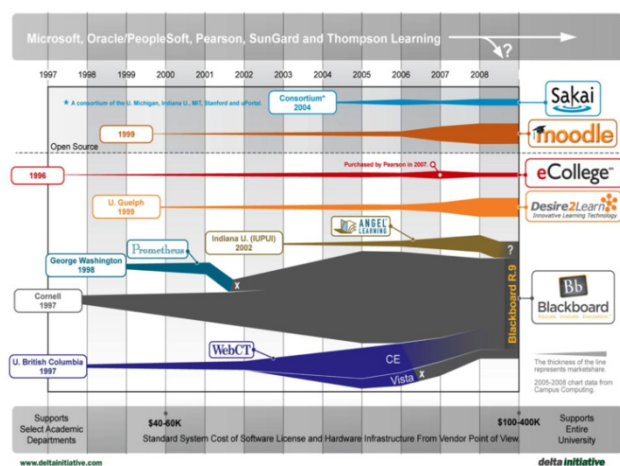


Figure 1. LMS Market

### C. How Blackboard is Assisting Educational Institutions around the World

There are many survey results on Blackboard some of which compares it with other LMS products like Moodle [9]. As Blackboard has grown into a huge web-based LMS product and combined other LMS products, it has turned out to become a complex system with many different functions. Consequently, it has a steep learning curve and many complain about it [10, 11]. However, numerous case studies and marketing research of Blackboard Inc show that their product is assisting many educational institutions in various aspects [12, 13], a summary of which is given in this section.

**1) Arcadia University (Glenside, PA, USA):** A Blackboard client since 2001 uses Blackboard to connect and engage their students in their unique program called the First Year Study Abroad Experience (FYSAE), in which students begin their first year of college abroad. As students of such program have never stepped foot on Arcadia's campus, Arcadia uses Blackboard to connect and engage them with

the campus so that they feel a part of the university. Students communicate through discussion boards about coursework and what to expect while overseas. Parents use discussion boards of their own to exchange information and discuss concerns about safety.

**2) Cal Poly Pomona (Pomona, CA, USA):** A Blackboard client since 2003 believes that Blackboard should be used inside and outside the class. The University President is advocating a procedural usage of Blackboard to include agendas, minutes, documents, organizations. Administrative and Student organizations are managed within Blackboard. All administrative groups use Blackboard to communicate; they see Blackboard as the central vessel to contain communities, communications and content. They use Blackboard to manage course content – minimizing number of copies of documents stored and encourage collaboration amongst academic staff.

**3) Central Texas College (Killeen, Texas, USA):** A Blackboard client since 2004 uses Blackboard as a tool to increase distance learning enrolment. According, they have increased their enrolment by about 277% in five years [12].

**4) Embry-Riddle Aeronautical University (Daytona Beach, FL, USA):** A Blackboard client since 2000 uses Blackboard for their ERAU Online, a complete portal and online learning environment. ERAU believes Blackboard Managed Hosting is a cost effective approach of managing their system.

**5) Kettering University (Flint, Michigan, FL, USA):** A Blackboard client since 2000 uses Blackboard to meet the high expectation of their tech-savvy students while making their academic staff more efficient. They rely on Blackboard for their 24x7 operational needs.

**6) IDEAL-NM (New Mexico, USA):** The Innovative Digital Education and Learning in New Mexico (IDEAL-NM) partnered with Blackboard to replace 22 different technology systems with a statewide integrated implementation of Blackboard Learn in 2008 to support and expand the educational collaboration and capacity of the state's schools, colleges, universities, and government agencies (Press Release, July 2008).

**7) The University of Cincinnati (Cincinnati, Ohio, USA):** A Blackboard client since 1999 uses Blackboard's open platform to help engage academic staff. They have created a student photo roster that ports student photos from the Student ID system into the Blackboard system. As a result, when instructors receive their class roster through the Blackboard system, they also receive a picture of each student. For their grade integration efforts, they have created a building block so that this data would automatically flow from Blackboard to the end-of-term grading system, eliminating the reentry of the grades by academic staff.

**8) University of Maryland – Baltimore County (Baltimore, Maryland, USA):** A Blackboard client since 1999 uses Blackboard for activities like University Placement Exams, Campus-wide Communication, Job Searches and Tenure Evaluations, Research Sites New Student Orientation, Training,

Fraternities and Sororities, Student Government and Student Voting.

**9) University of North Carolina at Greensboro (Greensboro, NC, USA):** A Blackboard client since 2000 uses Blackboard as a tool to provide tailored library content to students in a way that enables the library to control the access. In their system, when students logs into Blackboard, they see a tab for Library Reserves. On this page, the student sees 1) all library resources pertinent to their major and 2) all corresponding eReserves for each course they are enrolled.

**10) City of Sunderland College (UK):** A Blackboard client since 2001 uses Blackboard as a tool to address the challenge of retention and pass rates. Accordingly, they have achieved success rates well above the national average, by embedding Blackboard in all of their subjects and pedagogy. Apparently, such efforts has brought high-quality, accessible learning that enables learners to reach their full potential.

**11) City University of Hong Kong (Kowloon, Hong Kong):** A Blackboard client since 2002, in their efforts to engage all students regardless of location and as quickly as possible, replaced their multiple eLearning solutions with Blackboard to meet new course delivery, content management and community engagement requirements. Accordingly, the replacement has been helping their student exchange program and first year student education.

**12) Durham University (Durham, UK):** A Blackboard client since 2000 uses the Blackboard as a centralized means of access to their students and new staff for finding relevant information. In their “duo” Durham University Online, Blackboard helps each of their 16 colleges to maintain its own distinct flavour and culture while being able to communicate with their students.

**13) Osaka University (Osaka, Japan):** A Blackboard client since 2007 uses the Blackboard to enhance their face-to-face lectures and increase student engagement through a centralized location for classroom information.

**14) Ritsumeikan Asia Pacific University (Beppu, Japan):** A WebCT/Blackboard client since 2000 also uses the Blackboard to enhance their face-to-face education, particularly in language courses where there are many sections of the same course and in classes that have large student population [15]. Furthermore, when classes were disrupted for a week due to H1N1 flu, faculty members found Blackboard a useful tool for distance education. Since then the University has adapted the Blackboard as the main communication tool with students during emergencies.

**15) Sheffield Hallam University (Sheffield, UK):** A Blackboard client since 2001 uses the Blackboard to enhance formal programs of study for improving a boarder program experience.

**16) University of Dundee (Dundee, Scotland):** A Blackboard client since 2001, uses the Blackboard for

managing Intellectual Property Rights by controlling and limiting access to licensed content.

**17) University of Manchester (UK):** A Blackboard client since 2003, worked with Blackboard consultant to develop scalable business processes and a plan to drive eLearning adoption. They aim to become one of the top 25 universities in the world by 2015, need to ensure excellence in teaching and learning.

**18) University of Salzburg (Salzburg, Austria):** A Blackboard client since 2001 uses the Blackboard to support their “Flexible Learning Initiative.” Their students use Blackboard to attend tutorials and seminars, access reference material, and submit assignments online.

**19) Servicio Nacional de Aprendizaje (SENA) (Colombia, South America):** A Blackboard client since 2003 uses the Blackboard fulfilling their obligation of providing access to education for all Colombians regardless of geographic location. They use the system for their face to face, hybrid and fully online courses.

#### IV. CURRENT STATUS AND FUTURE TRENDS

##### A. Blackboard Learn 9.0

Early this year, Blackboard Inc released Learn 9.0, the next version of its Academic Suite Platform [19]. This version, not only has enhanced existing features, but has also heavily focused on implementing new web technologies, social and collaborative learning tools. It includes recently developed Sakai and Moodle connectors (within the company’s Building Blocks platform) which allow easier access to materials between Blackboard and the open-source systems. It also includes Web 2.0 and enhanced social learning capabilities including blogs, journals, group tools, and notification alerts. The Learn Suite also includes the company’s Learning, Content, Community, and Outcomes System. It appears that focus of the Blackboard at this time has been on improved usability, staying current with the web standards and addressing of users’ needs.

By supporting three major web browsers: Microsoft Internet Explorer (IE), Safari from Apple and Mozilla Firefox [16], it has addressed the much complained weak browser compatibility issue of the past [16]. By eliminating the annoying Java applets problem, another much complained issue has been remedied [20]. There is also a promise of better support for the traditional WebCT users in its forthcoming upgrade (version 9.1) which is scheduled for early next year. Other highlighted features of Blackboard 9.0 include [19]:

- Facebook integration, which lets user access course information and receive announcement within the Facebook.
- SafeAssign, which comes handy for plagiarism detection and prevention.
- iGoogle like user interface, which uses AJAX technology to arrange components according to user interest.
- New navigation capabilities.
- Ease of integratability with other systems.

- Richer information at its homepage rather than the mere announcements of its predecessors [20].

Consequently and due to the fact that the company sells annual subscriptions, it is foreseen that all clients will eventually upgrade to the new versions. Management remains confident that the new versions will be a solid revenue driver in 2009 and 2010 by generating additional interest in the product as well as enticing current clients to upgrade from basic to enterprise edition products.

### B. Future Trends

The launch of Blackboard 9.0 has resulted in a significant improvement in communication between users and system, learners and learners, learners and instructor(s). As LMS has turned out to become a communication tool assisting educational endeavors, it is anticipated that advancement of collaborative tools and web services will continue further in the future.

Another potential area is the integration of LMS with mobile technology. With an array of smart phones and netbook releases, the number of mobile devices that can access internet has tremendously increased during the last 2 years. A remarkable device is iPhone from Apple Inc which has now become a standard smart phone and supported by Blackboard Learn 9.0. Netbooks on the other hand, which are also known as mini notebooks or subnotebooks, are light and inexpensive laptop computers suited for general computing and accessing web-based applications. Since their focus has been on wireless connection capability and strong web browsing support, they will have tremendous effects on LMS market. It is interesting to note that these devices, which started appearing in the market in late 2007, have been having an amazing sales growth. Accordingly, a less than 1 million units of sale by end of 2007 was increased to about 11.4 million units by the end of 2008. The projected sale for 2009 is about 35 million units with an eventual increase to 139 million units by 2013 [20-21].

Other LMS providers are also aware of the importance LSM services via mobile devices. For instance, Desire2Learn Inc ("D2L"), a global provider of enterprise eLearning solutions, has also developed a mobile learning application called "Desire2Learn 2GO" which allows users to access course information from a BlackBerry mobile device. Moodle has also started supporting mobile devices, including all Japanese mobiles, iPhone, and iPod touch since 2009.

According to The Instructional Technology Council [3-5], the top 5 areas which will grow in LMS segment are:

- Online student organization and web service.
- Online counselling and advising.
- Online plagiarism evaluation.
- Online Audio\Video streaming.
- Online textbook sales.

### V. CONCLUSIONS

It can therefore be concluded that Blackboard is indeed assisting educational institutions around the world in many different ways, including in face to face, hybrid and online

education. Considering that online instruction is no worse than traditional instruction in terms of student outcomes and the fact that interest in hybrid approaches increases, Blackboard will continue to dominate LMS market. It will continue to evolve in a similar way that Microsoft Office Application has evolved. Users will eventually adjust to its steep learning curve and it will remain as the choice LMS product, especially for institutions that can afford its annual license cost. Open source LMS products like Moodle will continue to co-exist in a similar way that Open Office Application does, and may stay popular among cost conscious institutions or those that possess in house development and maintenance capabilities. Advancement of technology during the last decade has led to the establishment of active learning approach, allowing people to collaborate with each other in an effective fashion. There is no doubt that in near future, LMS will become an essential tool for modern education. It will function as a portal for information and services, enabling people to stay connected and provide them with necessary materials in a real time fashion.

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