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Introduction

This strategic white paper presents an overview of key issues and implications deriving from the convergence of e-Education and managed Application Services within higher education. Our commentary is intended to serve as a road map to help administrators and decision-makers in education to better understand the Application Service Provider (ASP) landscape—and to become familiar with Blackboard ASP Solutions.

Though e-Education is still in its nascent stages, it is very clear that it has become a competitive, strategic, and pedagogical imperative for institutions seeking to enhance the classroom experience and to provide distance learning. As educators, administrators, and decision-makers ponder the role of IT infrastructure and services, they are increasingly faced with buy vs. lease decisions. These decisions are spurred by a variety of factors that include: speed to market and implementation; total cost of ownership; predictability in budgeting; service and support personnel; and rapid growth of platform usage. As a result, more and more clients opt to manage the e-Education environment by using Blackboard ASP Solutions.

What Is An Application Service Provider?

Application Service Providers deliver and manage applications and computer services across a wide area network or via the Internet, from central data centers. Behind the ASP marketplace is a broad movement of software applications from individual desktop PCs or company mainframes toward network-centric servers connected to the Internet, extranet, or Intranets. ASP Solutions are managed from a central location rather than at each client’s site, with clients accessing applications remotely. ASP Solutions also incorporate tasks that would normally be performed by an institution’s Information Technology department, including managing application data storage, performing software upgrades, monitoring system security, and providing product support. Through economies of scale, ASPs can offer services and benefits at a lower cost than an individual organization would spend purchasing hardware and software separately, and hiring and training IT staff to manage the application.

ASP have become increasingly important to the success of e-Education initiatives for many college campuses and businesses. They offer clients access to emerging technologies and best-of-breed applications without making up-front investments in hardware, IT staff, and other resources. The ASP is responsible for delivering on the client contract, ensuring that the application service is provided as promised, for upgrading applications as needed and provided for in the clients’ underlying license agreements. This saves clients the research and staff training time necessary to keep up with rapidly changing and increasingly complex technology. If a technical problem arises, the ASP is responsible for solving it, providing ASP clients with peace of mind.

Why Choose Blackboard As Your ASP?

Blackboard is the leading e-Education infrastructure company that develops, licenses, and supports enterprise software platforms for bringing the educational experience online. A Blackboard ASP Solution is implemented, supported, and maintained by the same professionals who helped to develop Blackboard’s industry-leading software, making the company uniquely qualified to offer ASP Solutions of its software. Blackboard offers a suite of applications including: Blackboard Learning System™, Blackboard Community Portal System™, and Blackboard Transaction System™. Blackboard provides an intuitive, easy-to-use product that can quickly be implemented to meet mission-critical e-Education needs. More than 2,300 academic institutions in the U.S. and abroad, K-12 school districts, businesses and associations currently use the Blackboard platform. Combining the Blackboard ASP Solution with the Blackboard e-Education platform provides clients with hardware and software, as well as the technological service
and support that is necessary to keep e-Education initiatives operational, competitive, and secure. This allows clients to focus on their core businesses, administrative objectives, and competencies.

A Blackboard ASP Solution is ideal for clients seeking the benefits of the Blackboard e-Education platform. Selecting any level of the Blackboard platform, and choosing a Blackboard ASP Solution, ensures the speed and managed implementation of e-Education initiatives by professionals with application-specific expertise, without relying solely on in-house IT staff that have other responsibilities.

For clients who think that implementing the Blackboard software platform is beyond their current budget, or for those considering upgrading their existing Blackboard platform, combining a Blackboard ASP Solution with the license of the platform may prove more affordable and manageable, minimizing the total cost of ownership. A recent ASP consortium survey found that ASP Solutions, such as those offered by Blackboard, save clients 33–53% over the total cost of outsourcing applications to either establish or advance e-Education initiatives. A single purchase of hardware alone typically requires the budget and personnel to configure, integrate, support, and maintain it before implementation is set to begin. And, what if an organization loses IT staff that normally performs those functions? A Blackboard ASP Solution can prove invaluable for clients during a time of distress.

What Makes A Blackboard ASP Solution Unique?

A Blackboard ASP Solution allows clients to focus on their core business—developing and delivering the best online teaching and learning environment possible. A Blackboard ASP Solution offers:

COST CONTROL

With predictable costs and a simplified budgeting process, a Blackboard ASP Solution can save the direct and indirect costs of deploying and supporting the application, such as software, hardware and network costs, and personnel costs for implementation, maintenance, and training. A Blackboard ASP Solution utilizes economies of scale by leveraging a private delivery network to provide better service levels than most institutions can provide in-house. Additionally, utilizing a Blackboard ASP Solution helps improve the efficiency of the end-user’s internal resources by freeing IT staff to focus on internal applications. Blackboard simplifies the budgeting process for many organizations by providing predictable costs; the fee structure is all-inclusive. The annual fee includes:

- Ongoing application performance monitoring and tuning
- All software upgrades
- Routine maintenance of the server
- Security
- All network, database and application issues
- Connectivity
- Tape backups
- Twenty-four hour monitoring
- 10-20 GB of total storage space
- Climate control

Blackboard ASP Features

- Blackboard manages software installation
- 10GB to 20GB storage space*
- 256 kbps to 512 kbps of bandwidth measured on the 95th percentile scale delivered over a 100 Mbps Internet uplink*
- Redundant Internet connections through a minimum of three separate walls
- Managed Firewall Security Service
- Fully redundant and conditioned power
- Twenty-four hours a day, seven days a week monitoring
- Tape backups
- Secure facility

*Extra storage space and connectivity are available for an additional fee.
• Fire suppression systems
• Redundant Internet connections and power
• Managed firewall

MANAGED IMPLEMENTATION OF BLACKBOARD SOFTWARE

By using Blackboard ASP the time required to implement the Blackboard software is greatly reduced. Institutions selecting a Blackboard ASP Solution gain access to their application in less than seven business days. That is much less time than it would take to hire and train any additional IT staff to support the new software application, or to purchase and configure new hardware.

Blackboard ASP Hosting Center Facilities

Blackboard leverages the facilities of a world-class, state-of-the-art data center, to offer secure and reliable access to the application. These facilities offer:

• Secure, environmentally controlled facilities with extensive backup power
• First-rate fire detection and suppression systems
• Superior, reliable and redundant power systems
• Around the clock secured access, including on-site security personnel, and video monitoring

SECURITY

Blackboard understands that safeguarding student and course data is an essential part of a client’s online education program and is committed to providing a safe and secure e-Education environment for all ASP clients. Blackboard ASP security measures include physical, network, and application security.

• Physical Security. Blackboard along with our data center provider appreciate that both equipment and data security are vital to clients. With that in mind, comprehensive security systems include visitation access lists, identification badges, and security cameras. Seven days a week, around the clock, Blackboard data center facility security personnel superintend the operations center. A digital surveillance camera monitors all sections of the network center and all installed equipment to help ensure no unauthorized entry to protected areas. Single point of entry to the location is guarded twenty-four hours a day with access controlled by an access database and video surveillance. Guards monitor all areas within the location area and only those persons authorized by a client’s access list are allowed past a central point.

• Network Security. For network security, all remote administration is done via secure encrypted sessions (including SSH2 protocol). All ports on hosted servers unnecessary for the Blackboard product or for remote administration are closed. All connection attempts are logged at the server. All ASP clients have randomly generated passwords for administration accounts; no two servers have the same password.

MANAGED FIREWALL SERVICES

Blackboard provides a Managed Firewall Service to further ensure secure delivery of the Blackboard applications. With the Blackboard Managed Firewall Service, clients work with their existing security policy to specify and limit who may access their Blackboard installation. For example, it is possible to restrict the application so that it is only accessed from a client’s campus network during the day, and accessed from other network sources during the evening.

• Twenty-four hour a day protection. State of the art security management and firewall technology ensure that the client’s Internet application has the highest level of protection, around the clock.

“The Blackboard ASP Solution was important in our decision to adopt Blackboard. We could not devote someone internally to administer the system full-time—and with Blackboard’s application services we know that the system will always be up and our members will have a seamless experience. We would never give up this valuable service.”

—Dan Thoms
Senior Director of Educational Products and Services
Mortgage Bankers Association of America
**SIMPPLICITY**

Blackboard ASP Solutions provides technology solutions that lower the impact on a client’s operations and engineering staff by supplying a dedicated staff of developers and engineers, with application-specific expertise. This simplifies a client’s decision to expand the reach of the application and allows for scalability. Blackboard developers and engineers are available twenty-four hours a day, seven days a week, 365 days a year to maintain and monitor the client’s Blackboard application.

**FLEXIBILITY**

Choosing a Blackboard ASP Solution to support an e-Education platform is the same as if a client’s institution was hosting the application itself. All of the Blackboard platform customization tools are available to clients at anytime.

**Benefits of Blackboard ASP**

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<th>Cost Control</th>
<th>Managed Implementation</th>
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<tbody>
<tr>
<td>All-inclusive annual fee offers</td>
<td>Get up and running on Blackboard software within seven days.</td>
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<td>low predictable costs and a</td>
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<td>simplified budget process.</td>
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<tr>
<th>Security</th>
<th>Simplicity</th>
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<tr>
<td>Student and course data is</td>
<td>Blackboard engineers and developers are experts on the Blackboard platform, so there is no need for the client IT staff to receive training on the platform.</td>
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<td>safeguarded three ways: physical</td>
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<td>security, network security, and</td>
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<td>application security.</td>
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**PRODUCT SUPPORT**

A dedicated ASP product support team is available to help Blackboard ASP clients, via email or telephone, twenty-four hours a day, seven days a week, 365 days a year.

**STABILITY AND RELIABILITY**

Blackboard delivers a proven e-Education infrastructure to deploy mission-critical applications, and provides network backup systems at all levels of the course environment. The Blackboard data centers provide uninterruptible power supplies, HVAC environmental control, fire suppression, and server monitoring to ensure the highest standards of reliability.

**What Does A Blackboard ASP Solution Include?**

**Blackboard Learning System—Basic Edition includes:**

- Dedicated server with failback, redundant connectivity, comprehensive backup, RAID fault protection, and four levels of power backup at a secured location with restricted access
- Managed Firewall Security Service
- 10 GB of storage space
- 256 kbps of bandwidth measured on the 95th percentile scale delivered over dual 100 MBPS Internet uplinks
- Twenty-four hours a day, seven day a week, 365 days a year monitoring by a dedicated, fully trained staff in a state-of-the-art data facility

**Blackboard Learning System and Blackboard Community Portal System includes:**

- Dedicated server with failback, redundant connectivity, comprehensive backup, RAID fault protection, and four levels of power backup at a secured location with restricted access
- Managed Firewall Security Service
- 20 GB of storage space
- 512 kbps of bandwidth measured on the 95th percentile scale delivered over dual 100 MBPS Internet uplinks
• Twenty-four hours a day, seven days a week, 365 days a year monitoring by a dedicated, fully trained staff in a state-of-the-art data facility

Additionally, institutions that the select Blackboard Learning System to enhance their e-Education platform have the option of choosing the Blackboard ASP Non-Production Test Environment Service. This new ASP Solution empowers institutions with the ability to test changes and new content development without impacting the mission-critical data on their current Blackboard production environment. The Blackboard Non-Production Test Environment Service provides:

• Limited secure access to a copy of the institution’s Blackboard Learning System
• Software installation managed by Blackboard
• 9 GB of storage space
• Twenty-four hours a day, seven days a week, 365 days per year monitoring for connectivity, disk, CPU, and memory utilization
• Tape backup

The options to purchase additional storage space and bandwidth are also available to all versions of Blackboard software.

Value-added Services

SECURE SOCKET LAYER

A security protocol that provides communications privacy over the Internet. The protocol allows client/server applications to communicate in a way that is designed to prevent eavesdropping, tampering or message forgery.

• Confirmation of a user’s identity using the same techniques used for server authentication.
• High degree of confidentiality of using trusted certificates of authority.

VIRTUAL PRIVATE NETWORK (Limited to Blackboard Learning System customers)

Provides a secure communications between a client’s SIS system and database server. A VPN is a method of providing secure network transmissions over a public network such as the Internet. VPN’s include encryption, strong authentication of remote users or hosts, and a mechanism for hiding or masking information about the private network topology from potential attackers in the public network.

• Client premise equipment configured and maintained by Blackboard
• Compliance with existing client security policies and procedures

Summary And Conclusion

As the leading e-Education infrastructure company, Blackboard constantly develops and deploys enterprise software solutions that make the online teaching and learning environment more valuable to clients and to end users. Blackboard is uniquely qualified to offer ASP Solutions that support its industry-leading software. Part of the Blackboard service mission is to provide a complete solution for clients, thereby offering a strategic and competitive advantage in an increasingly complex and security-sensitive technological landscape. A Blackboard ASP Solution ensures faster implementation, reduced total cost of ownership, reliable network security, and dependable technical service and support that today’s competitive academic marketplace demands.

For more information regarding Blackboard ASP Solutions please contact us at +1 (202) 463-4860 or (800) 424-9299 or visit www.blackboard.com