Bringing Education Online

CNI Presentation – Deploying "Enterprise" Scale Instructional Management Systems

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Harnessing the Power of the Internet

- Fastest growing mass market medium in the history of the world
- Strengths in content, communication and collaboration

- $240 billion industry
- Successful, but Middle Ages economic model
- Wired campuses and digital customers
Blackboard’s Mission

To harness the power of the Internet to improve quality, increase access and transform costs in the global education marketplace.

*The next big killer application for the Internet is going to be education...it is going to make email usage look like a rounding error.*

-- John Cambers, CEO of Cisco

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The Higher Education Landscape

**USERS**

- Students
- Instructors
- Administrators
- Alumni

**ORGANIZATIONS**

- Institutions
- Publishers
- Vendors
- Retail
Industry Pressures

- Serving a changing demographic and digital generation
- Respond to competition and generate new revenue
- Improve operational efficiencies
- Achieve ROI for network investments
- Meet enrollment growth
- Better cognitive design

The Teaching and Learning Enterprise

Integrated Online “Platform”

- Manage admissions?
- Manage financials?
- Manage HR?
- Manage alumni?
- Unify campus resources?
- Lower personnel costs?
- Reach more Student/Alum?
- Financial Systems & Student Info. Systems
- Course Management Systems
- System Level Software
- Hardware
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Evolution of the CMS Category

- “Cornell is Wired” 1994
  - Instructors build from templates Feb - May 1997
  - Mosaic is available 1995
- Enterprise-scale T&L application December 1998
- Full Academic Support Systems May 2000+
- Instructors code from scratch 1995
  - Institutions adopt introductory systems August 1997

Operating Environment
“Enterprise” – Market Definition

- Scalability
- Customization
- Integration
- System Management
- Shared Content Repositories
- IMS-based Modular Architecture

“Enterprise” -- Scalability

- Moving from 100 to 1,000 courses; from documents to full multimedia; and from course supplement to mission critical
- Ability to implement on redundant servers with common synchronization and database services
- Use of Enterprise databases and Web servers
- Not just technical, but support and usage too!
### “Enterprise” -- Customization

- “Engine inside” versus template editor
- UI separate from the core technology
- Student experience can vary from institution to institution despite common CMS
- Biggest demand among commercial education providers such as Kaplan, TPR, Academic Systems and others

### “Enterprise” -- Integration

- Leverage existing security and directory services
- Data integration with SIS and similar systems beyond batch upload – i.e. snapshot and event-driven
  - Two-way user data, courses, etc.
- Common user interface for single-login campus-wide experience
“Enterprise” – System Management

- Sophisticated system management capabilities that match scale of usage
  - Archiving
  - Templates
- Automation of manual processes
- Domains, roles, rights and privileges
- Extended database reporting

“Enterprise” – Content Library

- Central repository of online learning resources
  - Multimedia
  - Links
  - MS Office Documents
  - Assessments, etc.
- Encourages re-use
- Manage rights and permissions
“Enterprise” – IMS & Modularity

- Fundamental IMS adoption at the architecture level
- IMS-enabled modularity and tool options
- Other IMS benefits:
  - Metadata for easier discovery
  - Integration with standard interfaces
  - eCommerce
  - Profiles

“Enterprise” – Future Directions

- Constant innovation of the teaching and learning environment
  - Ease of use
  - Adaptive learning
- Opening the platform (developer’s network and Blackboard-enabled program)
- Leveraging the database and maturing into a full academic information system
- Transforming into a full learning “operating environment”
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    - “Platform”
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Blackboard CourseInfo Platform

- Brings academic, administrative and campus community services online
- First two-tier product line in the marketplace that allows institutions to grow from “standard” to “enterprise” needs
- Common user interface, identical course-level functionality and total commitment to IMS
- Designed for on-campus and distance learning
- 450 live institution-wide installations in every state, with 100 institution backlog
- 1,000+ additional institutions with smaller usage
- Reaches 5 million potential accounts, with 2.1 million active users
Blackboard Platform -- Partners

- **Oracle, PeopleSoft** and **Microsoft** all name Blackboard as their primary platform partner
- **Dell** and **Sun** both name Blackboard as their primary platform partner
- **KPMG Consulting**, the largest system integrator in higher education, named Blackboard its primary platform partner
- **Pearson Education, Houghton Mifflin, Archipelago, Norton Publishing** and others provide content for the Blackboard platform
- **NLII**, the original sponsor of IMS, tapped Blackboard to serve as primary contractor

Blackboard CourseInfo

- Originated at Cornell University in March 1997
- Released v1.0 June 1997 – (real world beta)
  - First release of Blackboard CourseInfo used to accumulate feedback
    - Cornell University
    - Morehead State University
    - UC Berkeley
    - University of Pittsburgh
- Release v1.5 November 1997
  - First “true” market release of Blackboard CourseInfo
  - First on relational database
- Released v2.0/2.1 1998 (NT Platform)
  - NT support and significant additional functionality
- Released v3.0 1999 (Quiz - Discussion Boards) (Active State)
  - Major focus on stability and assessment improvement
  - Supporting more than 14,000 students at the University of Pittsburgh
End-to-End Platform

Blackboard Platform -- Growth

Blackboard Platform Licenses

- Graph showing the growth of Blackboard Platform Licenses from 12/31/98 to 12/31/99.
Bb CourseInfo Enterprise Edition

- Began Development in June 1998 with code name “Campus” as next generation course management system
- Goal was advanced addition to Blackboard CourseInfo product line for highly scalable, integrated and customized online teaching and learning environments
- Driven by IMS and largest Blackboard CourseInfo customer requirements (Original IMS development team led design efforts)
- Sophisticated Java technology base and architecture
- Familiar and proven Blackboard CourseInfo user interface
- Completed Beta in December 1999
  - Florida State University, Georgetown University, Dallas Community College District, Boston University School of Management, and Mortgage Bankers Association of America

Bb CourseInfo Enterprise Edition

- Blackboard CourseInfo Enterprise Edition v1.0
- Beta Completed on Dec 15
- Release – December 20, 1999
- Blackboard CourseInfo Enterprise Edition v1.0 includes:
  - New Technologies
    • Server Side Java - IBM WebSphere Servlet Engine
    • Oracle and SQL Server database support
    • Standard SQL calls using JDBC Drivers
    • Multi-platform - UNIX/NT
  - Security (Creating a centralized login that allows students and faculty to have a single username and password.)
    • LDAP Layer, Kerberos
  - Integration
    • Course data and user data via batch and snapshot
  - Customization (UI is separate from core technology)
Near Term Growth Directions

- Push “Breadth and Depth!” Expand platform functionality and usage to drive traffic
- Launch Blackboard Certified ASP Program – i.e. NextEd.com
- Seed “Blackboard-Inside” Licensing Opportunities – i.e. Academic Systems
- Push hard on International expansion – Australia – Netherlands

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Bb CI Adoption @ Georgetown

- Choosing a product
- Implementation of standalone Blackboard CourseInfo
- Implementation of Blackboard CourseInfo Enterprise Edition (CIEE)
- Long Term Goals

Choosing a Product

- CAUSE, Dec. 1997 - determined the University’s need for courseware
- Spring 1998 - GUide Committee and faculty reviewed courseware
- Summer 1998 - chose Blackboard CourseInfo and deterred others at GU from using other courseware products
Why Blackboard?

- Full featured
- Excellent user interface
- Ease of use
- IMS developers
- Blackboard indicated that they planned to develop enterprise solutions
- Close proximity of company and ability to forge working relationship

CourseInfo Implementation

- Fall 1998- Blackboard CourseInfo first implemented and used by ~15 faculty
- Spring 1999- ~40 faculty and 1200 students
- Fall 1999- over 240 courses and 3600 users
- Spring 2000- over 360 courses and 6500 users
(CIEE): Identifying the Need

- Enterprise-wide solution
- Addresses maintenance difficulties of Blackboard CourseInfo standalone
- Integrated backend with SIS and with frontend Kerberos and LDAP
- Focus on pedagogy
- Customized “My Georgetown”
- IMS libraries of resources
CIEE Implementation

- Beta-tested Blackboard CourseInfo Enterprise Edition with 31 courses and 2 large, diverse organizations in fall 1999 (~600 users)
- Limited pilot of integrated Blackboard CourseInfo Enterprise Edition implementation with roughly the same users in spring 2000
- Full rollout for all credit and non-credit courses and extensive number of organizations planned for summer 2000

Long Term Goals for CIEE

- Greatly enhanced teaching, learning, and communication environments
- Full, rich IMS libraries of teaching and research materials
- Low maintenance system
- Fully integrated not only with SIS and Kerberos, but also with Access+ and data warehouse tools
- Complete portal services
Bringing Education Online

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