Key Issues to Consider in Assessing the Digital Content Landscape

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Higher education administrators and decision makers devote increasing attention to e-learning and the ability of technology to supplement, enhance, and transform the learning experience. Although a great deal of attention has focused on the technology that enables learning, a focus on digital learning content is critical.

While instructional content is typically thought of as the printed textbook, kernels of digital content will play an increasingly important role in the educational experience. Instructional content is becoming more fluid, modular, interactive, and customized. Despite the excitement surrounding the concept of the digital textbook over the past few years, publishers have seen little traction in 2001 and early 2002 with e-textbook offerings. However, electronic course packs and other more modular and customized forms of content—frequently offered in coordination with course management system providers—have exceeded forecasts and expectations in their rapid adoption.

The last few years have seen an evolving market differentiation among providers, technologies, and product offerings (see Figure 1).

Figure 1. Digital Content Market Evolution

- In the mid-1990s, publishers pursued their own technology infrastructure solutions for course management and content delivery.
- Approximately two years ago, an environment existed that tightly aligned the leading postsecondary educational publishers with preferred and/or exclusive partners for digital content products.
- Today, publishers are working through a number of vendors as a distribution channel. The market is becoming more open, driven by both technology standards and dialogue.
Content is core to instruction. As such, content and all the issues related to the acquisition and usage of content, digital or otherwise, are critical to the mission of higher education. While continuing to build a technological e-learning infrastructure, institutions must prepare for the next phase of marketplace evolution, when content dominates. It is critical for institutions to consider approaching digital content decisions from an enterprise-wide perspective.

Historically, the publisher-to-institution distribution channel was straightforward. However, technology has allowed the number of channels, suppliers, and products for content to multiply, as illustrated in Figure 2. As buyers in the digital content market, institutions of higher education need to be concerned about their relationships and interactions with content suppliers (publishers) and a number of new intermediaries. The purchasing decision point for content is shifting in the same way that e-learning technology decisions have moved. The locus of control is less on individual faculty and administrators, moving to entire institutions and consortia.

![Figure 2. Distribution Channel Evolution](image)

As buyers with perhaps the greatest power in the marketplace, higher education institutions need to make well-informed decisions about the purchase and integration of content. This Research Bulletin provides a critical tool for informing a digital content strategy by examining three key categories of issues with regard to digital, publisher-provided, course-centric content, particularly in the context of course management systems as a channel.

**Highlights of the Digital Content Landscape**

As the market develops and the offerings of publisher/suppliers evolve, institutions will need to formulate a digital content strategy. Institutions should consider three fundamental categories in the digital content landscape:
• Economic issues that concern marketplace transactions
• Technology issues relating to systems integration and a technology infrastructure for digital content
• Policy issues encompassing strategic and tactical issues for high-level institutional decision makers

**Economic Issues**

Economic issues encompass both broad marketplace concerns and specific issues associated with the pricing and distribution of digital content. Economic issues are an important foundation for any discussion of digital content, as the fundamental question in the digital content market is not one of technology but of economics. The question, in effect, is this:

What is the underlying business model that will enable the efficient and profitable distribution of content to the customer in a form desired by the institution, at a fair market value, and with all the controls in place to collect revenue and maintain protections on intellectual property?

**Toward an Institutional Subscription Model?**

Digital course content providers may be headed toward an institutional subscription model, much like the model used by library-focused publishers and institutions subscribing to their electronic resources and online journals. In this type of model, institutions purchase a license to access content for all relevant constituents. Students are the consumers of textbooks (through their purchases as the end users at the college or university bookstore). Institutions are the key decision makers in the purchase process; they dictate the textbooks that students must buy for their courses.

In the current model for electronic course packs (content modules that supplement a textbook in a course management system) students often purchase personal identification numbers (PINs) for content access through the traditional channel: the bookstore. More and more courses are using course management systems and digital content, leading publishers to make textbook (and other) content accessible as smaller digital learning objects. As this trend progresses, an institution-wide purchase model may make the most economic sense. After all, students do not individually purchase subscriptions to academic journals and electronic library resources. One of the key benefits of an institutional subscription model is that the integration of content with course management systems allows publishers to track the usage of content and simplifies purchasing and digital rights management issues.

Of course, subscriptions can restrict choices and lock consumers into one or two publishers. Ultimately, the digital content distribution channel may evolve into a type of flexible subscription or access to a clearinghouse of information—a “pay-per-view” model—where institutions pick and choose the pieces of content they desire. With technology standards in place, this might enable individual professors to assemble online courses with content objects from hundreds of publishers.
Many major publishers report having evaluated institutional sales models; many are considering this business model as the foundation of their digital content strategy in the years to come. However, wide-scale adoption of institutional subscriptions is likely years away due to the many marketplace issues that must be resolved, ranging from pricing to digital rights management to standards.

Uncertainty for the Bookstore

While bookstores do play a role in the digital content marketplace, it is unclear how that role will evolve. According to publishers and vendors, bookstores continue to grapple with their role in a distribution channel where physical inventory and shelf space is slowly being replaced by digital assets. However, bookstores are still critical as a customer service “face” to the student and as a product purchase point. To date, strategies for digital content sales have revolved around selling a textbook and bundling a PIN for online access; a supplementary publisher-designed Web site; or a CD-ROM with the text. A near-term challenge for the market is to move away from this model and toward a more direct distribution model that might not involve the bookstore.

Note that few suggest bookstores will be entirely disintermediated, but clearly a new channel for sale of academic content has opened up through course management system providers, as publishers focus on providing content via these tools. It is also clear that an infrastructure for distributing and marketing print textbooks will perhaps always be necessary, and it will be some time before digital content garners a sufficient percentage of all course materials to fundamentally change the bookstore’s role as a distribution center.

The E-Commerce Infrastructure

Many publishers complain that today’s e-commerce infrastructure is not set up for purchasing individual digital content resources. For their digital rights management concerns to be satisfied, and for a solid business model to be developed, an infrastructure for purchasing digital content must be in place. Some vendors, such as Blackboard, have focused on transaction systems and integration with course management and bookstore systems. Most technology vendors and publishers share a vision of streamlined purchasing, and there is much excitement around the concept of Web services in the consumer and business markets. Undoubtedly, an infrastructure for transactions is important in the development of any marketplace. The vision of e-commerce and Web services links to the technology concern of authentication and single-point access to digital resources.

Technology Issues

The benefits of digital content are predicated on effective integration among digital content, technology architectures, and other campus technologies.

Authentication, Integration, and Everything in One Place

Authentication grants access rights to content, through a log-on process. Campus stakeholders often have a variety of accounts and passwords for multiple systems.
Institutions can streamline this by developing a central user identity and a "single sign-on." This process is often discussed in the context of enterprise portals or intranets that link all campus systems together. This linking also implies technical integration among systems, which, if achieved, has a number of benefits for digital content beyond behind-the-scenes technology simplification.

From the perspective of many faculty, technology administrators, and others on campus, an important goal for the use of digital content is the ability to integrate course-centric content and course management systems with online library resources as well as other institutional content resources and databases. To date, much of the focus on integration of campus systems has been on linking course management systems with administrative systems that process financial transactions and student information. The next phase of integration may be in the content arena, allowing an institution's purchased electronic library resources to link more directly into online courses, inserting content where relevant. Presumably, this ease of access to online library resources would drive greater student and faculty usage. Because library subscriptions are often with a different set of publishers and vendors from those that provide course-centric content, the question of standards and interoperability arises (see Policy Issues below).

Integrating technology architectures and content resources may cause institutions to develop and deploy a "content repository," where all publisher content—whatever the source or purpose—could reside and be accessed.

Where the Content Lives

It remains to be seen whether institutions will prefer to host their content on campus servers or access it via the Web at a site maintained by publishers or another third party. In the publisher-hosted (or application service provider, ASP) model, as content becomes more interactive and graphics-rich, bandwidth (network traffic and congestion) may become a significant issue. However, the majority of publishers lack the infrastructure to host and serve digital content; most content is being hosted on campus servers running course management systems.

Hosting content on campus servers presents another series of challenges. Managing a library of digital content or individual content modules can be an arduous task for IT organizations, particularly with the server space that the large files require. Provisions for determining access rights also arise.

However, underlying this issue of where the content lives is an economic and digital rights management question. Publishers may prefer to host the content on their servers if they feel that they can maintain greater control and monitor its access and usage. While publishers generally do not see themselves as technology providers (and most would prefer to keep it that way), a publisher-hosted model, perhaps through a third-party vendor (as in the example of e-learning provider eCollege’s hosted content and courses), might best satisfy the concerns both of institutions worried about storage capacity and of publishers concerned with the control and tracking of their intellectual property.
Policy Issues

The economic issues underlying the digital content market and the technology issues associated with digital content itself culminate in institutional policy concerns. Policy is integral to the development of a digital content strategy.

Centralizing Purchasing and Strategy

As e-learning has become mission-critical to institutions, higher education has seen the rise of cross-functional teams charged with formulating and managing an institution’s e-learning strategy. While these teams have often focused on technology issues, it is important to recognize that the participants need to move beyond technology and include those on campus concerned with digital content, which could encompass department heads, faculty, directors of academic libraries, and bookstore administrators. Future purchase decisions on digital content may involve the IT organization. While CIOs are accustomed to managing relationships with technology vendors, they have not traditionally interacted with academic publishers. The evolving digital content marketplace demands more significant and regular interaction with publishers by these key technology decision makers.

Support in the Distribution Channel

As Figure 2 illustrates, the digital content distribution channel is far more complex than the previous publisher-bookstore-institution path. As a result, it may be more difficult to ascertain which provider (the textbook publisher, course management software vendor, or e-content technology platform supplier) is responsible for supporting installations of digital content. Support and customer service are critical issues for suppliers and intermediaries to resolve. Institutions must demand clarity of them, as well.

Institutions, publishers, and course management system providers will need to continue to collaborate on simplifying the distribution of digital content, to avoid confusion among the campus IT department, bookstore, and outside vendors involved in purchasing and deployment.

Faculty Awareness, Involvement, and Efficiency

There is a market perception that many faculty aren’t aware of digital content options; a fair amount of education still has to be done. Faculty will drive the demand and usage of digital content. Unless faculty use digital content materials in their courses and require that the content be used (in the same way that they require a textbook for a given course), students are unlikely to take advantage of supplemental digital content.

Digital content and online course materials and tools create opportunities for enhanced learning as well as potential efficiencies. As content-focused e-learning vendor WebCT notes, efficiencies may be particularly important at institutions facing staffing and/or budget challenges. With the ability to share learning objects, use course templates for design, and even share whole online courses, adjunct faculty will be able to teach content developed by others, in the same way that different sections of a course may revolve around a shared textbook and syllabus. In the case of online content within the
context of a course management system, an entire shell, or learning path, of a course can be shared and reused around a specific set of learning objects.

The Significance and Challenge of Standards

Higher education institutions are in a position to help drive the necessary dialogue around standards and interoperability, resulting in acceptable standards for digital content. Part of the problem to date has been that standards are addressed only at a technical level and not from an institutional policy perspective. Because standards are so critical to the development of e-learning and the digital content market, institutions must concern themselves with standards and help foster interoperability and transportability for content and technology.

Today’s standards for course management systems and content focus primarily on importing and exporting content among systems rather than a common standard for content development, deployment, and interchange at the publisher-to-institution level. Publishers develop their content in a variety of competing formats for use with different course management systems and content platforms. Some suggest that publishers will ultimately determine standards, recognizing that it doesn’t make economic sense to develop content for competing formats and platforms.

Ultimately, it is the acceptance of common and open standards that will drive an explosion of use in digital content. In such an environment, content can be purchased, integrated, accessed, and shared on a range of technology platforms by a variety of constituents. Also, institutions will not face the burden of high switching costs nor will they be wary of investing in non-standardized content. Before the content repository becomes a reality, a set of firm standards for technology architecture and digital content is required.

Higher education may want to assume a role akin to corporations in e-learning content and technology purchasing. Savvy corporations have demanded that e-learning content conform to certain standards such as SCORM (Shareable Content Object Reference Model), a standard XML format, to ensure that content is transportable and shareable among systems. The U.S. Federal Government and forward-thinking states, provinces, and nations with e-learning content strategies have demanded standards compliance. With a clearly defined strategy, organizations can choose from a variety of content publishers, maximizing choice, minimizing costs, and opening up new opportunities.

Copyright and Fair Use

In the traditional sense of the term “policy,” copyright and fair use are perhaps most directly connected to institutional policy concerns. In addition to its status as the central economic concern for publishers, copyright is a key concern for institutional policy makers. As the use of digital content has grown alongside the boom in distance learning and e-learning, complications have arisen over copyright and fair use of digital content in the online environment.

In Section 107 of the U.S. Copyright Act of 1976, fair use exempts limited uses of copyrighted materials from infringement liabilities and applies to teaching, research, and
scholarship. However, this exemption was initially limited to the classroom. The Technology, Education, and Copyright Harmonization (TEACH) Act, currently under consideration, makes five important amendments to existing copyright law that are worthy of note:

- It eliminates the idea that the transmission of learning must be received in a physical classroom, allowing for the delivery of work to a student's computer.
- It facilitates asynchronous transmission by permitting the temporary storage of copyrighted material on servers.
- It allows the digitization of analog works if a digital version is not available to the institution or the digital version is subject to technological protection measures.
- It removes potential infringement for transient reproductions that occur automatically through the technical process of digital transmission.
- It expands the categories of works that can be performed from nondramatic literary and musical works to reasonable and limited portions of any other works.

Importantly, the TEACH Act also requires institutions to apply technological protection measures that prevent retention of copyrighted content for longer than the class session and unauthorized further dissemination of the work; limits the exception to lawfully made and acquired copies of works; and requires institutions to implement copyright policies and provide copyright compliance information to students, faculty, and staff members.

Thus, it is imperative for institutions to monitor compliance with copyright law as well as to monitor the changing legislative environment. However, it is still unclear exactly how compliance will be enforced and what types of technologies are available to do so.

What It Means to Higher Education

As e-learning continues to expand and digital content grows to represent a more significant portion of course materials, institutions will need to consider the issues outlined above and formulate a strategy to address relevant concerns. Perhaps most importantly, campus constituencies that have not worked closely together in the past need to be involved in this process.

Print textbooks will not be replaced overnight—and perhaps never entirely—but digital content is more than simply hype. It is a steadily growing mode of content delivery poised for an explosion in the years to come.

Key Questions to Ask

- Does our institution have a clearly articulated strategy for evaluating, purchasing, and using digital content? What constituencies participate in this process? Who is accountable for supporting and maintaining digital content installations and online course materials?
- How aware are faculty of digital options for course materials? How easy is it for faculty to use purchased or subscription-based digital content resources in their online courses?

- Are our library’s information systems integrated with our course management system? What instructional benefits could be achieved if they were?

- Are the strength of publisher relationships and digital content capabilities considered in the purchase of course management systems?

- Which constituencies are responsible for managing relationships with publishers of course content? Are the adoption and support processes for digital content streamlined?

- Does our institution have a position on technology and content standards?

- Does our institution have a plan for or an existing e-commerce infrastructure that enables students to purchase course materials online? What role does our bookstore currently play in the distribution of digital content on campus?

- Is our institution in compliance with legal copyright and fair use provisions for digital content? Is copyright compliance information provided to students, faculty, and staff members?

- What is our institution’s approach to authentication and single sign-on for various electronic content resources?

**Where to Learn More**


For information on the TEACH Act, see a PDF of the legislation at
<http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_cong_bills&docid=f:s487rs.txt.pdf>

Endnotes


3. E. Trask, “Copyright Issues Endanger the Promise of Distance Education,” The Education Industry Reports, Eduventures, February 2002.

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