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Professors need to practice what they preach. Ecommerce is allowing businesses to recreate themselves and we should not only encourage this process, but take part in it as well. This month's column is about reinventing book publishing in the ecommerce world. Chris Westland and Ted Clark, a pair of Hong Kong University of Science & Technology faculty, began an ecommerce experiment by making their MIT Press textbook *Global Electronic Commerce: Theory and Case Studies* available free online at <http://global-ecom.org>, then invited faculty to "steal this book." So far, their highly successful download site has made more than 100,000 copies of this text available electronically. Despite being online, or more likely *because* it was available online, their book, now in hardcover, remains very popular. This column reviews the alternatives available in electronic publishing and describes how the authors now extend their challenge to the publishing industry by creating an alternative market for teaching notes, cases, and other support materials.

Global Electronic Commerce Central: A Real-Time Market for Ecommerce Teaching Resources

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include strategic information systems, microeconomics of information technology, the use of information systems in international securities markets and financial services firms, and international electronic markets for intermediate and end products and services. He received a BA in mathematics, and an MBA in accounting from Indiana University. He received his PhD in information systems from the University of Michigan. Dr. Westland has professional experience in the U.S. as a certified public accountant and as a consultant in information systems in the U.S., Europe, Latin America and Asia. He is currently a member of the editorial boards of several academic journals including *Management Science*, *International Journal of Electronic Commerce*, *Electronic Commerce Research Journal*, and *Information Systems Research*. He is active in several organizations—Hong Kong Society of Accountants, Mensa International, and regularly organizes seminars and workshops in the economics of information technology. In November 1999 he published the MIT Press book *Global Electronic Commerce* (with Ted Clark), which in its first two months has become the world's top-selling academic e-commerce book. He has been a frequent commentator on Hong Kong's technology policy.

<http://www.ismt.ust.hk/faculty/westland>
<http://global-ecom.org>

A Challenge to the Academic Publishing Industry

Free downloading of intellectual products has become routine in recent years. Most software is promoted with a demonstration version that allows potential buyers to inspect the product prior to purchase. For this approach to work, potential adopters must perceive the product to be worthwhile. Experience has repeatedly shown that this is a viable strategy, and in fact *increases* sales rather than cannibalizing them. Indeed, in the film industry, the emergence of videos in the early 1980s is credited with revitalizing the industry, despite complaints of wanton piracy.

Since releasing our book *Global Electronic Commerce: Theory and Case Studies* (Westland and Clark, 2000) in hard copy, we have updated our *Global Electronic Commerce Central* site to offer text updates and teaching materials, in addition to case studies, slides, software, real time news, readings, associated retailers, and other material for the electronic commerce class. The site provides a global repository for course materials in electronic commerce that allows faculty to exchange material through uploads and downloads via the Web.

Global Electronic Commerce Central enables a market for classroom materials through its "auction" features. Faculty, quite reasonably, are reluctant to simply give away the products of their labor in preparing a course. Still, there is unlikely to be a traditional publishers' market for their course support materials because of high printing and distribution costs. The problem is exacerbated in electronic commerce by rapid obsolescence of material—particularly when that material deals with products and markets in the rapidly changing field of e-commerce.

The site's auction market follows a modified reverse auction. In this model, instructors who have teaching materials that they wish to sell to other faculty may make that material available on the <http://global-ecom.org> server. In this way our website has bypassed physical networks of distributors, publishers, salespeople, and other market intermediaries, bringing products and services directly to the consumer. Web subscribers and servers continue to increase at phenomenal rates, dominating other Internet services in the process. Unfortunately, to this date, very little has been accomplished in the academic publishing sector.

Academic book publishing remains penurious and hidebound, afflicted with legal problems, low pay and slow turnaround. It has always been faced with the thankless job of addressing what Jeff Bezos, founder of the highly successful Amazon.com Internet bookstore, calls the 'hard middle'—products whose middling popularity make it difficult to make a profit. For example, mass-market publishers such as *USA Today* can profitably speak to an audience of 12 million, while consultants and corporate intelligence units profitably address an audience of 12; in between is the *hard middle*—hard to reach, hard to profit from, hard to satisfy. Academic publishers are uncomfortably but securely ensconced in the *hard middle* of the publishing industry.

The *Global Electronic Commerce Central* site offer the potential to make the *hard middle* timely, attractive, and profitable by reengineering the traditional publishing business model. Combining the Web with publishing tools such as *Office*, *Acrobat*, *FrameMaker*, and *PDF Merchant*, it is possible for authors to write as well as publish; only the distribution channels remain to be conquered. In the vertical markets of academe, where one's audience may consist of perhaps 100 to 10,000 Web-connected researchers worldwide, this is a relatively modest barrier to entry. It can easily be breached by WebBots targeted towards faculty Web pages.

Adobe's vision of this model, supported by *PDF Merchant*, is reflected in the schematic in Figure 1. In this business model, the author should easily be able to incorporate the roles of publisher, distributor and retailer.

Jeff Bezos suggests that such a restructuring of publishing is inevitable:

There are quantitative changes so profound that they become qualitative. For example, e-mail is much the same as regular mail but faster. However, it is so much faster that it has the power to reshape companies, create communities, eliminate geography and revitalize the art of letter writing in a generation that had been thought to have been rendered incapable of it by television. That is a qualitative change. Now think of Internet publishing as the e-mail equivalent of traditional publishing's surface post.

Physical mailing could be outsourced to book warehouses such as Ingram's. But

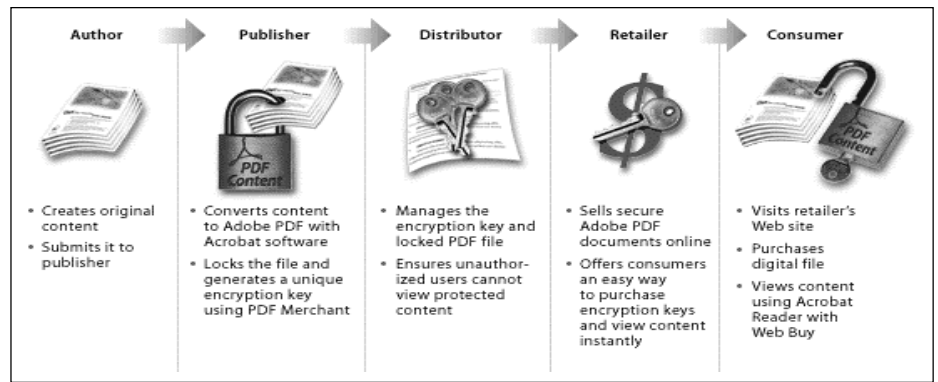


Figure 1: Adobe's vision of Web publishing (Source: <http://www.adobe.com>).

there is an even better solution on the horizon. Electronic books, or *eBooks*, are portable pieces of hardware with a large storage capacity (1,500 to 500,000 pages) and the ability to download new titles instantly (or as fast your network connection allows, anyway). Currently *Adobe*, *Fatbrain.com*, *Everybook*, *Glassbook*, *SoftBook*, and *NuvoMedia* provide their own models of *eBooks*.

Skeptics have suggested that consumers will never choose to curl up with an *eBook*. The reader hardware is expensive (US\$199 to US\$1,600), e-titles cost about the same as their print counterparts, and ink and paper are still easier to read and handle. But with any new technology you are likely to find a similar debate. Popular acceptance is often as much a function of technology as it is of marketing—and *eBooks* are no exception. Adobe has estimated the market for *eBook* titles and other electronic documents will be around US\$70 million within five years, and has positioned its software to compete in this arena.

Cost reduction is only one reason for the expected popularity of *eBooks*. Adobe points out that other things make the medium attractive:

Speed of delivery. FedEx is nothing compared to the speed of the Internet. Just log on, download your book, and start reading. It's Amazon.com to the extreme, which makes updating textbooks and professional libraries (such as legal or medical ones) quick and easy.

Portability. Even large books are small when they're *eBooks*. And it doesn't matter if you're carrying four 500-page manuals or one; they take up the same amount of space.

Personal editions. With *eBooks*, authors can self-publish. Companies can gather and update strategic information in one compact file for sales staff. Teachers can compile customized class readers at a reasonable price, without infringing copyrights. And there's no such thing as an out-of-print text.

Infinite user possibilities. Lawyers with complete, up-to-date, fully linked case opinions. Doctors with entire medical archives available bedside. Students with multiple textbooks in one easy-to-carry reader. The applications are limitless.

Web-like interactivity and search capabilities. Searching a document, inserting a bookmark, and adding cross-referenced hyperlinks are easy tasks within *eBook* formats such as Adobe PDF. So is including sound, video, and animation—elements that analog (paper) books will never have.

Lower costs. Because there are no printing, storing, or shipping costs, publishers can reduce their overhead, thereby lowering costs to consumers.

Perhaps the most pervasive complaint about *eBooks* is their screen quality, a problem that is likely to be resolved within the next three to five years. The second generation of *eBooks* feature tiny, electrically charged microcapsules that appear as either black or white and display new text instantly when supplied with an electric signal. Products in development include *E Ink*, Xerox PARC's *Gyricon*, and ultralight LCDs made of plastic.

Lessons Learned

Even with these new publishing technologies on the horizon, there are compelling

reasons to adhere to the time-honored format popularized five centuries ago by Aldus Manutius—the printed text. Why? Digital media has yet to surpass the printed book in at least three ways.

First, computer screens have only around one one-hundredth of the resolution of the printed page. Thus reading requires significantly more visual effort on a computer screen. Second, the quality of computer screens tends to be proportional to their power requirements. This requirement at least intermittently tethers them to an electrical source, which is a detriment to portability. Third, computer screens, with the exception of extremely light laptops, are considerably heavier and bulkier than books, a further deterrent to carrying reading material around.

Industry structure presents an even more daunting impediment. The technologies of digital production and distribution has greatly outpaced the legal and economic framework in which those technologies operate. Despite years of experimentation by several large publishing houses, it is not yet clear how to properly package digital textbooks. Publishers suspect (perhaps rightly so) that digital texts will be even more prone to piracy than existing paper media.

Contracts and revenue streams for book publishing assume that the information for which consumers pay is indelibly inked into paper. It is the paper that is counted in determining the sales volume, and thus the book revenue. There are many *ad hoc* ways of modulating quality of information in a book—selection of authors, limits on length, audience and money. Yet publishers have not fully solved the problem of charging for the utility of the information rather than the quantity of the paper.

The greatest novelty of the Web is its worldwide traffic in information unbound to any particular medium—paper, CD, or magnetic. Frictionless, spontaneous, and almost limitless flow of information on the Web can be called upon to bolster arguments, flexibly demonstrate points, and expand on issues raised in the text. Still authors will be anxious to integrate features of the Web's hypertext medium into a book—hyperlinking, interactive chat and paging, colorful graphics, sound, multimedia objects, and so forth.

Our Web site at <http://global-ecom.org> will be used to experiment with new formats for presentation and distribution of material over the coming years as ways of extending the utility of our text.

No one particular medium can convey everything appropriate to a classroom. In fact, the best teachers will continue to favor a mixture of modes in the classroom—videos, Web displays, classroom discussion, software and corporate visits—to support discussion of the rich set of ideas presented in electronic commerce. In our classes we encourage students to experiment, to take time out to explore the Web sites referenced in the text, and then to follow the hyperlinks to broaden their horizons.

Reference

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more rapidly changing product. That requires strong emphasis on supply chain integration with a particular focus on speed. This appears now to directly apply to the education world. The online research institute, while bringing together research academics and the sponsoring community and promising a better research environment, can also contribute directly to the quality of online course provision. This will enable more rapid update of courses in response to developments in research understanding, an understanding generated by the closely collaborative research process described above, ultimately as courses are delivered. An electronic relationship between research institute activity and online courses is possible in which automatic update of subject content might take place as new material is identified by the researchers, based on immediate developments in the real world.

It is currently often argued that the effectiveness of electronic supply chain integration will be the differentiating factor in business—it is also clear now that this will be the case in education: electronic integration of the education supply chain. It is conceivable that technology can create a vibrant, integrated online learning community that will provide the environment necessary for strong, valid Ph.D. work.

As this article was being written last month, we at Athabasca University agreed on a substantial research contract that will form the basis of our first online research institute—a large scale annual study of Information Technology Management in Canada. Our discussions with the corporate community indicate a high degree of interest in the model that is outlined here, which confirms our confidence in our ability to make it a reality. Development of a mainly online, high quality university busi-

ness school that exploits technology to enable us to conduct better research, deliver better courses, and participate more fully in the business community we serve is truly an exciting vision. ■

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