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Chameleons in our Midst: How Scholarly and Professional Roles are Changing Due to Technology

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information service era are a matter of course: technology is constantly on the go. "What was hot today," says **Chris Beckett**, **CatchWord**'s director of Sales and Marketing, "is lukewarm tomorrow and consequently that is an endemic challenge for any company that is grounded, initially, as a technology company."[1]

Proprietary technologies designed to display, deliver, and offer navigational routes to scholarly and academic content were at the heart of **CatchWord**'s original development. But the company faced deployment challenges as well as market resistance to helper application installations, particularly at large universities. Beckett says that on a technology and company culture front, one of their biggest challenges was accepting, humbly, that the market preferred more extensively marketed technologies to their own. People were prepared to live with products that had greater technical limitations, such as **Adobe Acrobat** at the time, but which enjoyed huge market penetration and acceptance.

"The larger and more interesting role challenges that we've had to adapt to have been in the areas of pure business relationships and dealing with uncertainty," Beckett says. Although he points out that this industry has not been revolutionized by technology, it has certainly seen a period of accelerated evolution. On the one hand, the company saw its intermediary role as one that tried to diminish the uncertainty for both publishers and librarians through their understanding of technology then and in the future.

On the other hand, **CatchWord** had to clarify its role on the basis of day-to-day electronic content provision, access control, and distribution. Its major change has been in carving out a niche as a distribution hub. "Once we were able to convey that our job was taking content and making sure that it was available wherever the readership was, then it became much easier to define our relationships with all the other players in the information chain," adds Beckett.

Had they succumbed to competitive pressures a year and a half ago to become a scholarly gateway, they would have moved from being a content supplier to being a competitor to gateways. Hence, the very distribution partnerships they've developed with 17 partners and 21 more in the making would have not have been possible.

"We had always thought it was more sensible, commercially, to adopt a position of neutrality in the scrap for desktop share that goes on between gateways, A&I services and subject portals," says Beckett.

Instead, **CatchWord** finds itself in the position of being able to make the publisher's content available wherever the publisher wishes to see it, while building the necessary distribution business relationships on behalf of the publisher. "This is part of the value we add," says Beckett, "which is much better understood and appreciated now than it was a year or two ago."

But as we've seen, the changes emerging as a result of technology hardly end with vendors. It has equally infiltrated the librarian arena. According to **Helene Williams**, English Studies Librarian at the **University of Washington** Libraries, virtually every aspect of how libraries conduct business has changed. For one, libraries are having to accept that owning resources isn't possible all the time due to financial and space limitations. She adds that libraries are also being forced to accept that the provision of access regardless of format—be it subscription, databases, or document delivery—will in essence meet the needs of the user.[2]

Williams believes that one of the ongoing challenges is the implementation costs associated with changes in technology. "Providing up-to-date hardware is not the only financial change: there's the cost of software and content as well," she says. "Libraries now must pay ongoing fees for electronic data which, in the print version, was often available for a one-time charge. The issue of duplication of information in multiple formats—and the complicated pricing structures—is also a challenge."

She also points to the increased rate of change within libraries as another major challenge courtesy of technology. Formal training comes in handy, she says, but it's not easy to provide or have time to attend and learn when there are so many changes in software, interfaces, and even printer parts.

But there is good news on the opportunities emerging as a result of these very technological developments. Thanks to technology, says Williams, there has been increased awareness and implementation of "just in time" practices vs. the more traditional "just in case" school of thought toward ownership of materials.

Williams points out that the automation of processes and access to resources on the Internet have encouraged greater collaboration between library units, such as between technical and public services,

and amongst libraries, faculty, publishers, and end users. "The wired world has done much to highlight the librarian's role on campus and in the community," says Williams. "We often see and use the new technology before other groups, and we can provide training and mediation not available from the producer."

The ability to reach the end user, whether on campus or remotely, says Williams, has been given a big boost by technology. The boundaries of time and geographic location are no longer obstacles. Whether the end user needs data from collections, instruction, or related services, it's possible to provide these regardless of location. "Our interaction with distance education students is one obvious way we are taking advantage of the new wired world-without-walls," she says. "An international example of collaboration is the **Collaborative Digital Reference Service** project (CDRS), spearheaded by the **Library of Congress**, which will provide value-added anytime, anywhere reference service."

With the advent of technology, particularly the development of the Web, **ISI** indicates that there are three areas that have presented the most challenging changes and required adaptation: content, customer service, and product enhancements.[3]

Helen Atkins, director of Database Development for **ISI**, explains that in terms of content, **ISI** has expanded its already existing traditional sources of information, namely print journals, books, and proceedings, to Web-based content. They have offered e-journals (both born digitally and converted from print) for some time, and the primary challenges have been in revising and improving their internal systems to

effectively manage diverse electronic source materials.

Beyond the more traditional journals, they've been working to identify, index, and provide access to scholarly Web sites through **Current Contents Connect**.™ To make this work effectively, it required new editorial criteria and the addition of staff with the appropriate skills. **Web of Science**™ has been another development effort related to content expansion through Web links. They've worked out numerous arrangements with publishers to be able to link out from a **Web of Science** record to the corresponding full text article, for example. Some of the other linking arrangements they've worked on have included agreements with other publishers of databases, periodical directories, and patent information.

Atkins says that in the customer service arena, technology has enabled **ISI** to become more responsive to inquiries by customers, offer field training at customer locations internationally, and provide enhanced support activities through the Web regardless of international location or time zone. Additionally, **ISI** expects to offer product-training programs through the Web in the near future.

In terms of product enhancements, Atkins says being able to issue software and data updates through the Internet is a less cumbersome process than before. The distribution of various media—CD or disk as part of the updates—to thousands of customers worldwide was very costly. While developing the enhancements and upgrades to software remains highly time and labor intensive, says Atkins, the process of "distributing" such upgrades through the Web is less intense, allowing them to turn out software and data upgrades faster.

"The most interesting opportunity I see is that of increasing user autonomy, providing products that allow users to make choices," adds Atkins. "The fact that more and more resources that are complementary to ours are being provided on the Web means more opportunities for **ISI** to enter into partnerships."

Beckett also sees some interesting opportunities hovering in the scholarly information horizon as a result of this computer and technology-rich environment in which we find ourselves. "Small companies who focus on a niche application will become an essential part of the information chain," he says.[4]

The area of customer identification is also bound to offer some engaging prospects, according to Beckett. "It's clear

that the Internet and the e-commerce world offer the opportunity for very close profiling, personalization, and customization of information products to be delivered to match the needs of a personal profile. The idea of mass customization is a very powerful one."

"But there are dangers in the concept of 'mass'—people have to experience these personalized software tools as personal. And depending on the type of information you are seeking to personalize, the process is not without difficulties. But I do believe that it's going to be the ability to deliver just what people want to the desktop that will offer some considerable opportunities."

CatchWord sees itself continuing to sell content to individuals in flexible quantities. As a result of a publisher client's request, **CatchWord** has made it possible for the individual user to buy complete issues, volumes, or even full subscriptions electronically. It's a trend they see continuing. Other opportunity areas for the industry, says Beckett, are in the access and authorization arena as witnessed by the reference linking movement, even though it hasn't been embraced fully yet by some of the players.

Beckett sees two other challenging areas emerging, particularly in light of the technological implications. "The countervailing pressure to all transaction based delivery in the scholarly and academic market is the institutional move toward consortial purchasing," he says. "It seems clear to me, and I think there's evidence from **OhioLINK** and elsewhere, that large-scale deployment of a wide selection of content, freely available at the desktop, is likely to reduce the requirements from inside those institutions for transactional based delivery, whether it be ILL or pay-per-view," adds Beckett. His last observation on challenges sounds easier said than done. "Probably at the top of the list, which represents both a challenge and an opportunity," says Beckett, "is for companies to stay nimble and to keep their customers and their teams pumped up and focused."

Chameleons

The advent of technology has for some time now permeated the way we conduct business today. It continues to influence our strategies for the future, whether the environment is a physical library, the desktop of a re-

mote end user, a publishing house, or a vendor facility.

More than ever before, the roles we have traditionally played in the various organizational circles are in flux as we evaluate what we've done, what we need to adjust to today, and how best to prepare our institutions and interests for an exciting future where we're developing the models as we go. Fortunately, we work in an environment where thought and process are openly encouraged and expected, as is the exchange of ideas.

We must be willing to change and reconstruct our respective roles in productive ways that take advantage of the developments brought to us by technology. If we stay still amidst the change, we run the risk of organizational atrophy. If we thrash from one technological innovation to the next without having a solid foundation or a clear understanding of the implications of such actions, we run a similar risk. Indeed, the trick is learning to become like chameleons that adapt gradually to their new environments without bringing the inappropriate colors, or extra baggage, from before. 🐢

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— *Helen Atkins*
ISI's Director of Database Development

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2. Williams, Helene. December 12, 2000. Email interview.
3. Atkins, Helen. December 12, 2000. Email interview.
4. See 1.