



Instant access to scientific research: Springer-Verlag takes journals online

Springer-Verlag, an international publisher of scientific journals, supplies over 400,000 subscribers with key scientific and medical journals and supplements. In the last decade, libraries, universities, institutes, and scientific groups around the world have come to depend on Springer-Verlag for access to the latest scientific research.

“IBM helps to make LINK easy to navigate and manage. LINK makes the journals we publish much more visible around the world. Together, we are successfully addressing a dynamic market with enormous potential.”

—Dr. Thomas Rakow, Project Manager, Electronic Publishing, Springer-Verlag

Delivering this research as rapidly as possible is a key element of Springer-Verlag’s competitive edge. Dr. Thomas Rakow, Springer-Verlag’s electronic publishing project manager, explains, “In the past, a researcher would go to the university library to read the printed version of the journal. If a copy wasn’t available in print or on microfiche, the librarian had to obtain one

through a document delivery service—a process which could take weeks.”

Faster information delivery

With the help of IBM Deutschland’s network computing experts, Springer has implemented LINK, an electronic publishing service that provides complete online access to over 200 of the most prominent journals on the Web. “With LINK, we can have the electronic journal article in the researcher’s hands weeks before the corresponding journal issue is printed,” Rakow says. The company expects to have all 400 of its journals, as well as its electronic books, published on LINK at *link.springer.de* and *link.springer-ny.com* by the end of this year. Using IBM products and services, Springer has established the foundation that will ensure its scientific material is easy to manage, secure,

Application	Electronic publishing, online access to scientific and medical documents
Business Benefits	Reduced time to market, additional source of revenue
Software	IBM® ADSM IBM Firewall IBM TechExplorer
Hardware	IBM RS/6000™
Services	IBM business model development and systems integration

LINK feeds the need for scientific information. IBM helped make the online service flexible, easily accessible, and secure.

and delivered quickly and reliably to subscribers everywhere.

LINK presents multimedia content

In the electronic editions of its journals, Springer offers access to current issues, back issues, and supplementary color images, sound, video, datasets (such as 3-D models for molecular modeling), and software. According to Rakow, multimedia content is one of the most important features of Springer's electronic publications. "When a researcher reads a journal article on molecular modeling, he wants to be able to see that activity as he reads the text," Rakow says.

This sheer volume of data requires a new organizational and technological concept that goes well beyond the existing publishing infrastructure. In addition, publishing journals on the Web has prompted Springer to rethink its business model. For example, it has compelled the company to look carefully at the type of content customers require and determine what services will add the most value.

Adapting print publication to online environment

Even without multimedia, converting complex formulas and graphics for online publication is a challenging task. IBM took advantage of the fact that many university scientists use the TeX typesetting system to create their formulas. It developed a Web browser plug-in called TechExplorer, which enables Springer to send TeX documents directly over the Internet. TechExplorer provides better display capability, faster transmission speeds, and smaller file sizes than comparable HTML documents. TechExplorer is available on IBM's AlphaWorks™ Web site at www4.alphaworks.ibm.com/formula.

When it came time to deliver the electronic journals, IBM helped Springer-Verlag expedite its production process by creating a new online preparation interface to link the online and print production environments. Springer manages online data storage with IBM ADSTAR® Distributed Storage Management (ADSM)—no small task considering that 200 journals require an estimated 200,000 pages, or 40 to 60 gigabytes of storage space per year.

To accommodate the online environment, Springer uses an IBM RS/6000 G40 as its high-level data management server and search engine. It has a storage capability of 288 gigabytes,

which is expandable to 2.4 terabytes. The LINK Web server sends requests to IBM Firewall, which acts as a *demilitarized zone*, separating the Web server from Springer's LAN to prevent unauthorized access. Any subscriber request on the Web server is tunneled through common gateway interface (CGI) scripts through the firewall. Requests are then executed on the data management server, and the results are returned to the Web server.

Springer-Verlag employs technology from a variety of vendors, including Sun, Oracle, OpenText, and Stuert Electronic Publishing. According to Rakow, "IBM is the vendor capable of integrating our multiple systems as a single platform."

IBM system controls access

Springer employs a trusted access management system developed by IBM for Springer-Verlag, which can potentially support many thousands of individual subscribers. This application, called Trusted Management Center (TMC), dynamically recognizes and authenticates subscribers by ID and password, or under certain conditions, by IP address. For individual subscribers, TMC can also use certificates issued by third parties to manage online subscriptions. Subscribers sign on with their IDs, passwords, and/or electronic certificates on their first visit to LINK. With each successive visit, the access management system dynamically recognizes and authenticates the user and provides a list of accessible titles. It also ensures that the agreed-upon number of concurrent online users for each subscribing institution is not exceeded.

"We incorporated TMC with our customer management center because it offers very flexible electronic licensing models," says Rakow. "With TMC we can control and monitor access to specific journals that are currently hot spots for information."

Now, Springer allows individual users to search and access a version of the full-text articles in journals that they subscribe to without additional charges. In the future, Springer will also provide special licensing arrangements for other journal publishers, scientific societies, and others wanting to publish or disseminate scientific information.

"IBM helps to make LINK easy to navigate and manage. LINK makes the journals we publish much more visible around the world. Together, we are successfully addressing a dynamic market with enormous potential," concludes Rakow.

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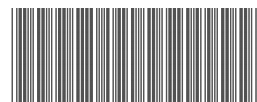
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