IBM

Partnering with IBM, Borders knows no bounds in e-business.

Backed by a powerful e-business partnership and an unrivaled retail infrastructure, Borders Books and Music is writing a new chapter in the history of what has become a $2.6 billion business. Borders' new online store, located at *www.borders.com*, offers ten million books, audio books, CDs, cassettes and videos – all available to ship from stock to any home or business.

"We've proven that we can take Net.Commerce, together with other IBM software, hardware and consulting services and, in a few months, produce a competitive e-commerce site in the toughest electronic retail segment on the Net."

– Rick Vanzura, Vice President, E-commerce and Fulfillment, Borders

"We're the only online bookstore that couples a dominant selection with guaranteed back-end fulfillment," says Borders Senior Vice President for E-commerce and Fulfillment Rick Vanzura. "When we say a book is in stock, you can be sure it is, because of

our realtime inventory checks. No other online bookseller can offer that. And it's all part of one integrated application."

Developed and deployed in less than nine months, in conjunction with IBM Interactive & New Media and e-business solutions experts at IBM, Borders.com is driven by a complete e-business solution based on the IBM Net.Commerce suite of products. "With IBM, you get the integration of the individual applications to form an overall business solution," Vanzura asserts. "And you get a strong focus on customer satisfaction."

Noting that Borders' ambitious foray into the online bookselling market is beginning to bear fruit, Vanzura claims that book and music enthusiasts have been quick to embrace Borders.com.

Borders.com integrates the convenience of online shopping with the dependability of its bricks-and-mortar fulfillment system.

Application	Online bookstore
Business Benefits	Increasing Web site traffic, sales and profits; excellent position to compete against major online competitors
Software	IBM® Net.Commerce IBM Net.Data® IBM eNetwork™ Firewall IBM DB2® for AIX® IBM DB2 Text Extender IBM MQSeries®
Hardware	IBM RS/6000® SP™ IBM RS/6000 S70
Services	IBM Interactive & New Media, IBM Global Services

"We would hit the radar screen among the highest traffic Web sites," he says. "And we have consistently been building every week on sales, orders and profits."

Vanzura stresses that building a long-term partnership was a key factor in Borders' satisfaction with IBM: "IBM has the resources and the commitment to e-business products that will help us get ahead of our curve," he says. "With IBM at our side, we can achieve significant returns on our site development investment."

e-business

It's about business, not just technology.

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DB2 and DB2 Text Extender offer smarter searching

The minute you enter the site, you recognize that this is no publisher's clearinghouse. More than just an online catalog, Borders.com is a place to browse, obtain recommendations, chat — in short, enjoy the true Borders book-store experience. The Web site's navigation model mimics a customer's typical browsing pattern — from department, to topic, to subtopic and then to specific authors and titles.

If you want to find a particular book, CD, audio cassette or video, Borders.com offers the next best thing to asking your friendly Borders sales associate: a search engine based on DB2 Text Extender that rapidly returns the results you want — and only the results you want — in a format most conducive to making a purchasing decision.

As simple as they may seem to the user, these searches are no trivial feat for a relational database system. Just searching for a specific title takes 3 queries to 3 different database tables, each of which has about 20 million rows. But thanks to a unique database design and DB2 Text Extender's innovative indexing scheme, the Borders search engine can return results for most searches in about four tenths of a second.

DB2 — an integral part of the Net.Commerce suite of products — stores information on all of the items offered on the site, as well as customer registration, order, inventory, shipping and other information required to manage the online store. "DB2 obviously is one of the benchmark databases out there — one of the industry standards," Vanzura comments. Net.Data Web and database connectivity software enables Net.Commerce to access the database from the Web server.

Technical features aside, what Vanzura is particularly proud of is the speed and cost-efficiency with which Borders was able to bring to market such a high-level online offering. "We've proven that we can take Net.Commerce, together with other IBM software, hardware and consulting services and, in a few months, produce a competitive e-commerce site in the toughest electronic retail segment on the Net."

Hard-hitting hardware

Hosted by IBM Global Services at its facilities in Schaumburg, Illinois, the Web site runs on a cluster of IBM RS/6000 servers. Expecting a rapid increase in traffic on the site, Borders started with four IBM RS/6000 SP servers. "We're already taking advantage of the scalability of the RS/6000 now," Vanzura notes. "IBM did a very good job of getting the infrastructure ready in time to handle the volume we expected at the site's public preview in May 1998."

To guard against downtime, Borders chose the High Availability Cluster MultiProcessing (HACMP) option on the RS/6000. "On the Internet you must be accessible 24 hours a day, 7 days a week," Vanzura explains, "so, unless you're going to have two separate sites, I don't know how you can ensure 100 percent availability without HACMP."

To further boost processing power, Borders recently added an AIX-based IBM RS/6000 S70 to the server cluster.

Back-end integration key to competitive edge

Borders runs its back-end systems – such as accounting, inventory and fulfillment – on a variety of databases and hardware platforms. IBM MQSeries manages the regular updates between the DB2 database and the back-end systems. This enables Borders.com to perform realtime inventory checks and realtime ordering from suppliers – something not available at any other online bookstore.

Such integration may seem obvious, but Vanzura emphasizes the complexity of developing a Web site that truly operates like a physical retail store. "There are a lot of places where the front end touches the back end," he says, "and there needs to be an awareness of what is going on with the back end when you're designing the site. We have a project executive from IBM on site to ensure that."

Net.Commerce add-ons promote sales

For Borders, as for any retailer, a sales transaction is the most desirable outcome of the online shopping experience. Using Net.Commerce application programming interfaces (APIs), IBM Interactive & New Media enhanced the site with several features designed to maximize the likelihood that customers would complete their order during their online visit. One example is Borders' Quick Checkout, which allows registered users – those who have already entered their name, address and credit card information – to select a product and then click one button to complete the ordering process. This saves customers time by eliminating the online "checkout" stage, which typically involves waiting for two or more additional Web pages to load in order to confirm payment and shipping terms.
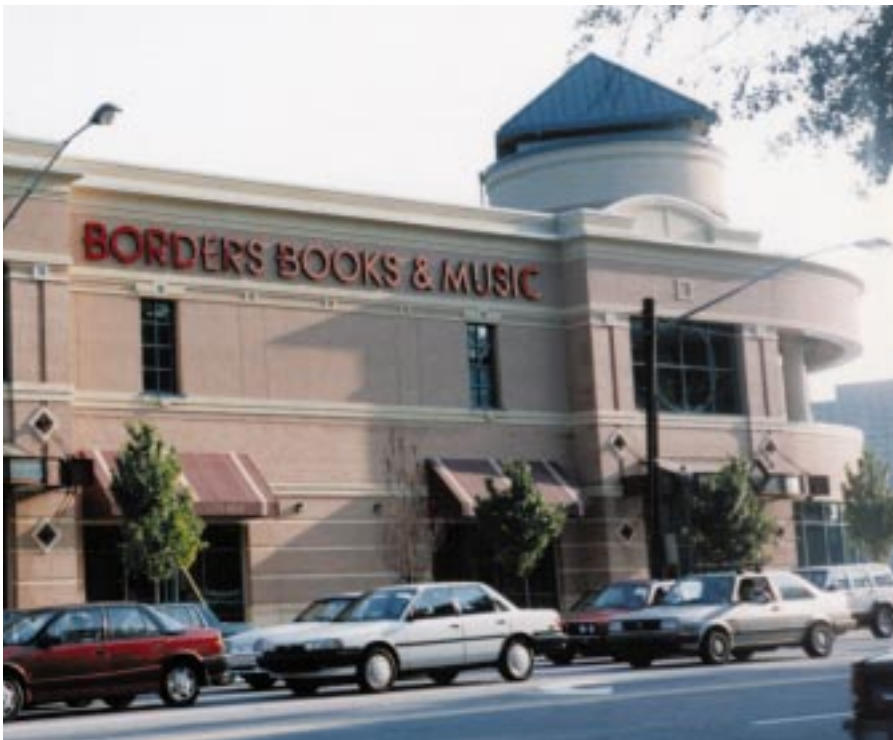
"We would hit the radar screen among the highest traffic Web sites. And we have consistently been building every week on sales, orders and profits."

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To enhance interest in its online store, Borders.com is building on one of the key elements in the success of its bricks-and-mortar shops: the helpful advice of its staff, each of whom is an expert in a particular field of literature, music or film. Thus, the books, CDs and videos displayed on Borders.com are accompanied by reviews written by Borders' employees around the globe. The site also offers live chats and interviews with leading authors and artists.

The next step: information mining

The information that Borders collects from its online customers not only helps expedite the ordering process, but also provides an important long-term benefit. "Information mining will become critical," Vanzura says. "I think one of the areas in which the Web can offer a huge advantage to the customer is this one-to-one marketing capability — I would say that it's a pretty big part of the future of retailing. And, if you can't data mine, you can't do that. We're very much looking forward to IBM's forthcoming solutions in this area."

In its bid for a premium stake in the online entertainment market, Borders is pitting itself against some high-profile rivals. But it can take comfort in the players on its side. "There are a lot of predictions regarding the Internet I know I will be wrong about," Vanzura says. "But one I will bet heavily on is that at least 80 percent of the vendors that have called on me in the last six months will be out of business within the next two and a half years. IBM won't. That's a big part of the bet — having someone you know is going to be there for you when you need them."

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