Swiss Railway's unforgettable Alpine trips start online and lead to savings

A journey through Switzerland by train is a breathtaking experience. Every year, 250 million passengers wind their way past sparkling mountain glaciers, over the trestles strung between towering snow-capped peaks, and through quaint villages nestled in lush green valleys. Almost as amazing as the scenery is the complexity of the Swiss Federal Railway's (SBB) network. A fleet of 1,070 locomotives, 17,000 freight carriers, and 4,500 passenger cars stop at more than 3,000 stations throughout the country with clockwork punctuality. And ticketing involves more than 100 different options including rebates, price reductions, special promotions, international monetary conversions, and even special discounts for avalanche-searching dogs.

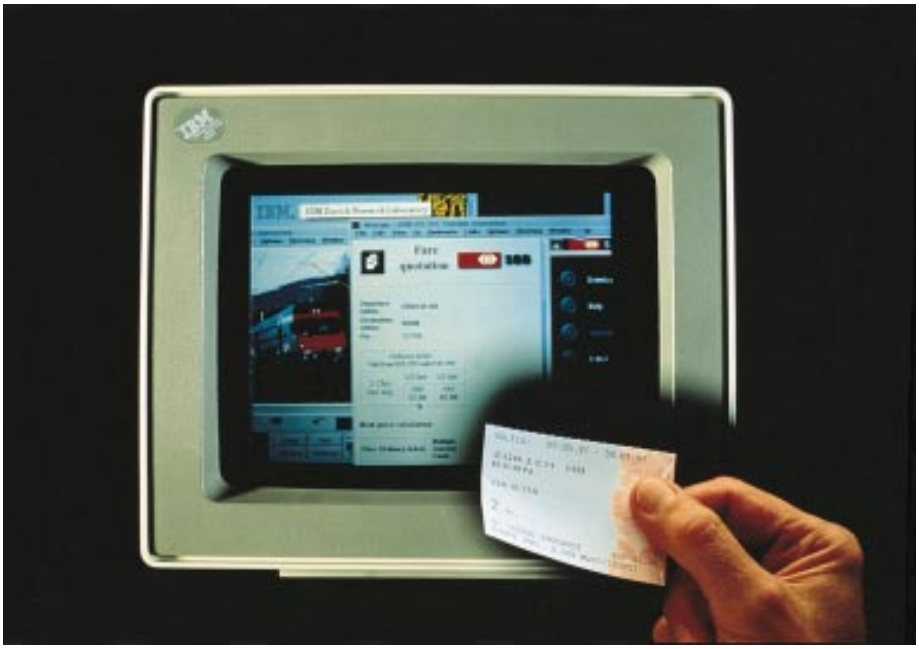
Maintaining this massive transportation machine can be both costly and cumbersome, but SBB was determined to uphold its reputation as the most modern railway in Europe. It looked to the Internet to help it transform itself into an e-business to reduce operating expenses, improve efficiency, and extend its reach to a worldwide tourist market. "Through the Internet, we can more quickly and effectively meet the specific needs of our customers and develop new promotional opportunities that will grow our business," says Paul Blumenthal, director of passenger services for SBB.

SBB isn't new to the Net. Since 1996, passengers have been able to access its online train schedules, a service that attracts more than

Application	Online ticketing, travel services, souvenir shop
Business Benefits	Reduced operating costs; new source of revenue; increased customer awareness
Software	IBM® Net.Commerce IBM DB2® IBM Net.Data™
Services	IBM e-commerce solution design and implementation

"By pioneering this form of ticketing, and by being the first to implement world-class technologies from IBM Research in the process, Swiss Railway is leading the industry into a new and more efficient way of conducting business."

–Paul Blumenthal, Director of Passenger Services, Swiss Federal Railway



With IBM Net.Commerce, PCs become virtual train stations.

e-business

15,000 users daily. But SBB's latest Web venture was much more ambitious. The railway conceived of an online system that would allow Internet users located anywhere to order train tickets, securely pay for them by credit card, and automatically receive them by mail.

Working with the IBM Global Travel and Transportation and IBM Research, SBB has achieved all this and more. The IBM team designed a comprehensive electronic commerce solution for SBB, based on IBM Net.Commerce. Today, the SBB site not only sells train tickets, but also provides information on lodging, ski resorts, sporting events, open-air concerts, and other attractions. There's even an online store, where travelers can shop at their leisure for Swiss souvenirs. And they can do it all in their language of choice—German, French, Italian, or English.

Connecting diverse systems

"One of the main challenges was integrating and interconnecting our diverse systems," says Jean-Claude Peng, Swiss Railway project leader. To make its commerce solutions work, SBB needed to enable the Web applications to access its business operations systems, such as a price calculation program, scheduling information, and accounting and communication gateways. These systems run on a variety of platforms, including MVS, Windows NT, and SINIX.

SBB was able to solve the integration problem with the IBM Net.Commerce electronic commerce solution. The back-end of the Net.Commerce storefront is comprised of IBM DB2 databases on Windows NT, which serve as repositories for information on products, special offerings, and customers, as well as data on transactions in progress and completed orders. Another component of Net.Commerce, IBM Net.Data, provides the Web/database connectivity that enables interactive access to the dynamic, up-to-date information in the databases.

Ensuring security

During the pilot phase, personal address and payment data are protected using the widely adopted Secure Sockets Layer (SSL) technology already built into most Web browsers. Swiss Railway will soon offer an even higher level of security for online payments by using Secure Electronic Transaction (SET), the emerging standard for Web-based transactions. Developed by IBM in conjunction with VISA, MasterCard, and others, SET encodes customer credit card numbers while keeping them hidden from all but the issuing bank.

SBB and IBM are also exploring ways to eliminate the need for paper tickets and manual order fulfillment through the use of electronic tickets. The service may be based on downloading encrypted information to *smart* cards.

Adding cargo and real estate services

SBB is finding other areas in which Net.Commerce can benefit its business. In addition to providing passenger service, SBB is also the country's major cargo carrier, transporting nearly 44 million tons of freight each year. The railway is also the second largest land owner in Switzerland. "With Net.Commerce, we will be able to publish our cargo container shipping costs on the Web and schedule pick up and delivery," says Peng. "We can even rent flats and buildings via our Web site. The possibilities are endless because our e-business solution allows many extensions that will continue to improve the product and expand the applications."

SBB's property rental and sales information are currently available on static Web pages. The Net.Data component of Net.Commerce will allow access to these *dynamic* data sources, thus eliminating the need for manual HTML coding to keep the Web pages up to date.

The railway of the future

In 1997, Swiss Federal Railway celebrated a historic event—150 years since the first scheduled train ran from Zurich to Baden. More than 500 railway station parties and festivals marked the anniversary, and a special exhibit train wound its way through Switzerland carrying the message of "Zukunftsbahn und Bahnzukunft" (Railway of the Future and Future of the Railway).

Swiss Federal Railway's commitment to improve its customer service through electronic commerce solutions such as IBM Net.Commerce helps ensure that rail transportation has a bright future in Switzerland. Paul Blumenthal adds: "By pioneering this form of ticketing, and by being the first to implement world-class technologies from IBM Research in the process, Swiss Railway is leading the industry into a new and more efficient way of conducting business."

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