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# Den Danske Bank Web-enabled for customer convenience.

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| **Application** | Online banking; online real-estate agency |
| **Business Benefits** | Eliminated client software distribution costs; effective use of legacy applications; improved customer satisfaction; faster and less costly deployment of newly Web-enabled applications |
| **Software** | IBM CICS® for MVS/ESA™<br>IBM CICS Web Interface<br>IBM DB2® for OS/390®<br>IBM MQSeries® for OS/390<br>Lotus® Domino™<br>IBM HTTP Server |
| **Hardware** | IBM S/390® Parallel Enterprise Server™<br>IBM Integrated CMOS Cryptographic Coprocessor |

As part of a banking group serving two million customers, Den Danske Bank maintains a prime financial position in northern Europe and throughout the world's major financial centers. Wisely, the organization has been very quick to recognize that the Internet is transforming banking—more people want to bank online, at their convenience.

During the early 1980s, Den Danske implemented a form of online banking, enabling customers to connect to the bank's IBM CICS transaction environment over a private dial-up network. With the emerging acceptance of the Internet, the bank's information technology (IT) arm—Danske Data—realized Web-enablement was essential.

*"Choosing the S/390 server for our Web enablement projects made it possible for Den Danske Bank to take advantage of the classical S/390 strengths— availability, scalability and security—to reduce the time-to-market."*

*—Joergen Lundgaard, Deputy Director, Danske Data*

Needing a scalable solution that would be cost-efficient to manage, they chose IBM CICS Web Interface, together with



*Den Danske Bank powers NetBank with IBM e-business solutions.*

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IBM HTTP Server (formerly Domino Go Webserver™) for S/390 and IBM MQSeries. In addition, the bank uses IBM CICS for MVS/ESA Version 4.1 as the transaction server for all its online transaction processing applications and IBM DB2 for OS/390 as its standard data management system.

*"Using Web browsers as user interfaces has eliminated the costs associated with client software distribution."*

*—Arne Loecke, Deputy Director, Danske Data*

By implementing a Web-based infrastructure, Den Danske Bank can adjust to new customer demands much faster. Says Arne Loecke, deputy director at Danske Data, "The benefits of using CICS Web Interface included significantly better performance than a Common Gateway Interface (CGI) implementation as well as the ability to keep the number of platforms to a minimum, stay away from decentralized components and obtain a high-volume transaction system."

### New Web-enabled services
During the past two years, Danske Data has worked with Den Danske Bank to implement several Web-based solutions: DBTS, an online banking system for business customers who have high-volume transactions; NetBank, a home banking system that makes it possible for users to do their banking online from anywhere in the world; and DanskeBo, an online real-estate agency.

Each of these applications leverages data residing on the S/390. "Choosing S/390 for our Web enablement projects made it possible for Den Danske Bank to take advantage of the classical S/390 strengths—availability, scalability and security—to reduce the time-to-market," says Joergen Lundgaard, deputy director at Danske Data. In addition, as Loecke notes, "Using Web browsers as user interfaces has eliminated the costs associated with client software distribution."

### Adapting to an increasingly online world
According to Lundgaard, hosting the Web site on the S/390 was sensible because it allowed the bank to apply application mining and leverage its existing equipment and S/390 expertise.

Den Danske Bank has developed a standard set-up for Web-based solutions using IBM HTTP Server for proxy serving and static Web pages, CICS Web Interface for dynamic Web pages that link to CICS transactions and Lotus Domino for commercial Web pages. MQSeries is the message queuing software used to facilitate information transfers from the legacy systems to the Web pages. Security for the DBTS and NetBank is ensured with industry-standard, Secure Sockets Layer (SSL) encryption. To further enhance system security, the IT professionals deployed the IBM Integrated CMOS Cryptographic Coprocessor for S/390, which encrypts and decrypts data. By using the CMOS Cryptographic Coprocessor, Den Danske Bank enables a high volume of transactions with a high level of security.

Not only did Den Danske Bank have the foresight to launch online banking, it moved in the right direction for Web-enabling many other applications. Using powerful IBM e-business solutions, the bank's IT staff has ensured that busy customers can handle their banking needs from anywhere in the world, quickly and reliably.

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