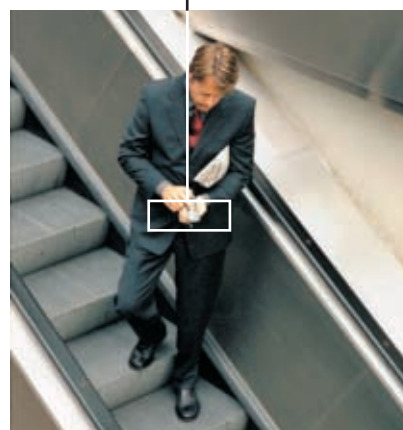


Nordea and the Nokia Wireless Application Protocol Solution



In October 1999, Nordea became the world's first financial institution to offer Wireless Application Protocol (WAP) banking services. Customers with WAP-enabled mobile phones can now conduct their banking regardless of time or location, worldwide, where access to a suitable network is available. Customers can track their account and credit card transactions, transfer funds between accounts, pay bills both domestically and abroad, trade equities, and read customer e-mail and short news items from the bank. The new service also allows customers to shop in Nordea's virtual marketplace, Solo Market.



Nordea's WAP services are supported by the Nokia WAP solution, including the Nokia Activ Server, related Nokia WAP products and consulting services. Data and transactions are protected by Nokia WAP security technology, which complies with worldwide security standards. In addition, Nordea is using Wireless Transport Layer Security (WTLS) in Nordbanken in Sweden and is now testing it in Finland.

Nordea – beyond the desktop

Nordea Group is the leading financial services Group in the Nordic and Baltic Sea region. The Group is a world leader in Internet banking with 2 million e-customers. Outside its home region the Group has operations in 18 countries. With Finland, Sweden, Denmark and Norway as its base, the Group develops and markets a broad range of financial products and services. The customer base comprises 10 million private customers and

700,000 business customers, which are serviced through 1,260 branches.

Pioneering mobile banking

Nordea is widely recognized for pioneering Internet banking in Europe. In 1982 the company broke new ground in network banking by offering automatic telephone payments and expanded that service to the PC in



1984. In the early 1990s the company was among the first to recognize the potential of GSM banking applications, followed by Internet banking in 1996. In October 1999, just after Nokia shipped the world's first WAP phone in Europe, Nordea became the world's first bank to extend itself beyond the desktop and into people's hands.

Using their WAP-enabled mobile handsets, Nordea customers can track their account and credit card transactions, transfer funds between accounts, pay bills both domestically and abroad, trade equities, and read customer mail and short news items from the bank. The new service also allows customers to shop in the Group's Solo Market, which is one of the biggest virtual marketplaces in Scandinavia.

Several thousand customers have used the new services and the bank anticipates that the user base will continue to grow rapidly throughout 2001.

Combining strategy and cooperation

Nordea's mobile commerce strategy centered on the idea of extending the group's established Solo Service from the desktop to the mobile phone. The only difference would be the medium used to facilitate a simple transaction such as account balance inquiry, bill payment to transferring funds between different accounts.

Ease-of-use was also key to the bank's strategy, which required that the services follow the same principles on which the desktop services were developed.

With the strategy in place, the project team then identified the services that would best adapt to a mobile environment. Nokia then worked with the bank to build the architecture needed to provide those services to WAP-enabled mobile phones. The user interface for WAP services was developed using the Nokia 7110 mobile phone.

Nokia chosen for WAP expertise and ability to execute

Nordea considered several alternatives in addition to the Nokia offering, including SMS-based services, dual chip and server-based solutions. As the world leader in Internet banking, Nordea saw the importance of teaming up with a company whose solution would support the most extensive selection of services, opportunities and a large user base.

According to Bo Harald, Executive Vice President of Nordea, Head of Network Banking and Payments, Nokia was the "natural choice" for a number of reasons. "Nokia is the world's leading manufacturer of mobile phones and it was the first to introduce a well-functioning WAP phone to the market. Our collaboration with Nokia has been long-standing and successful, and we were attracted by the company's advanced thinking on WAP and preparedness to forge ahead quickly."

Harald adds that Nokia executed the entire implementation in a way that simplified matters for the project team, which in turn enabled them to launch the services smoothly and with a short lead time.

The Nokia WAP solution offers end-to-end security option

The Nokia Activ Server allows Nordea to fully leverage the power and functionality of its new service offerings in a mobile environment. This open server platform for mobile applications enables the bank to maintain control over data access and customer traffic between the wireless network and its own Web site, thus extending its network while maintaining true end-to-end security.

The Nokia Activ Server complies with the WAP 1.1 specification, but goes one step further than competing servers by offering a security option, the first commercially available implementation of Wireless Transportation Layer Security (WTLS) and Secure Socket Layer (SSL). Since Nordea

operates the server, there is no need for third-party involvement – a significant advantage that further enhances the security of the new services.

"It is important that customers can safely use all Solo Services using the authentication mechanism based on their Solo codes and changing passwords," explains Harald. "This allows us to guarantee user authentication and safe use of the service. Nokia's solution was the only one that fulfilled those key criteria."

WAP services become necessity

Since the launch, Nordea's WAP services have received positive customer feedback. In particular, being able to bank irrespective of time and place is proving to be more than a novelty. In late June 2000, Nordea extended its WAP service to Sweden, further demonstrating its belief in mobile solutions as an important delivery channel for financial services in the 21st century.

For more information on WAP at work in business, visit www.nokia.com/corporate/wap

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