

Industry:
Consulting Services

Organization:
A leading global systems integrator

Description:
AU-System is Sweden's largest independent software development and consulting firm for wireless software solutions, systems integration, and intranet and Internet solutions. Founded in 1974, the firm has more than 670 employees.

Business Problem:
AU-System was asked by MeritaNordbanken, one of Scandinavia's largest banking groups, to develop, test, and implement a secure, reliable Internet-based payment system for its commercial and private customers. The solution had to provide a secure means of payment over the Internet without the use of credit cards. It also had to interface smoothly with commonly-used browsers and the Bank's leg-acy UNIX mainframe system. An "Internet-speed" three month development time frame was further shortened by the Swedish summer holiday season which found many project workers taking their entitled 4 week vacation.

Solution:
The Rational Unified Process (RUP) and Rational Rose

Key Benefits:
Provided flexibility for making total design changes in the middle of the project and for quickly integrating new people into the team

Iterative approach minimized risks from project inception

Rational software

AU-System Creates Secure e-Commerce Payment Solution with the Rational Unified Process

Beyond Credit Cards — Internet Commerce from MeritaNordbanken, Sweden

Many consumers in Sweden are uncomfortable using personal credit cards for Internet purchases. Their reluctance, shared by people in other Scandinavian countries, has hindered the growth of e-commerce in this region when compared to other parts of Europe and the United States. After all, credit cards have become the most widely used payment method for Internet transactions between merchants and consumers.

MeritaNordbanken, one of Scandinavia's leading banking groups with 6.5 million private customers and 400,000 commercial customers, sought to remedy this situation by establishing an e-commerce payment system based on secure account transfers instead of credit cards. Faced with an ever-increasing, international demand for such a service, the Bank deemed it a high priority to bring an easy-to-use e-commerce payment system on-line as quickly and securely as possible.

AU-System Supplies Needed Expertise

MeritaNordbanken contracted with the Swedish firm AU-System, headquartered in Stockholm, to design and implement the software for this system. Founded in 1974, AU-System is Sweden's largest independent software consulting company, specializing in wireless software solutions and a complete range of Internet and intranet solutions. AU-System also has considerable experience in information technology security and smart cards. This combination of services and expertise made AU-System the ideal resource for developing MeritaNordbanken's new e-commerce system.

Internet Banking

The approach the Bank had in mind was quite straightforward: both merchants and consumers would have access to their respective

MeritaNordbanken accounts over the Internet. To make a purchase, buyers would enter their password-protected account and transfer the appropriate amount of money into the merchant's account via a user-friendly and familiar interface on the browser. The buyer could thus make payment without placing any sensitive information onto the Internet and the Bank would guarantee payment to the merchant. It was a simple approach providing security for all parties involved.

Integrating the Internet with Mainframe Systems

Implementing such a system, however, was not so simple. The Bank handed AU-System a formidable list of project specs including: a very simple user interface for buyers and sellers that would work with all common Internet browsers, a smooth integration with the Bank's legacy mainframe systems, robust security through encryption and other Internet security techniques, and an accelerated schedule that called for development, testing and roll-out within a three month time frame.



AU-System consultants used the Rational Unified Process to develop a secure, reliable e-commerce payment system for MeritaNordbanken.

IBM®

“The Rational Unified Process made it very easy for people to be introduced to the code, get a logical view of its development and then start developing new code quite quickly.”

“In one direction we had to present a simple and secure interface out to the Internet while in the other direction we had to define and develop communications channels to the Bank’s existing mainframe,” said Karl-Gustav Niska, software developer and project manager at AU-System. “The back-end integration was much more difficult than usual because of the limited access we were granted to sensitive and secure areas of the Bank’s computer systems. The limited access was due to the fact that the development took place during the same period as the bank was securing their data systems for Y2K,” Niska noted.

The Rational Unified Process Provides Speed, Flexibility and Coordination

Niska’s team also had to deal with the Swedish summer holiday season falling right in the middle of the software development schedule. With many workers taking their entitled four-week vacation, meeting the project delivery date required that new engineers be introduced and brought up to speed in very short order. Fortunately Niska and his group were guided by the Rational Unified Process® (RUP®), the industry-leading software development process from Rational Software.

“In this particular project one of the prime benefits that we obtained from RUP was the flexibility it provided for making total design changes right in the middle of the project and for introducing new people into the team,” Niska said. “RUP made it very easy for people to be introduced to the code, get a logical view of its development and then start developing new code quite quickly. On this project we saw that even with key people leaving on month-long holidays we could maintain our client’s schedule by quickly phasing-in new people, all because of RUP.”

Another valuable benefit the AU-System team derived from RUP was the process’s iterative way of working. In the iterative approach, the overall problem is divided into a number of well-defined smaller problems. In each iteration, the top priority problems are defined, analyzed, implemented and tested, allowing the development team to stay focused on the most important tasks. End-users can evaluate the functional code derived from each iteration and provide valuable feedback throughout the development process. Problems are thus identified and addressed early-on in the project, shortening time-to-market and greatly reducing the risk and expense of fixing major bugs after release.



Using the iterative approach, problems are identified and addressed early-on in the project, with end-users providing valuable feedback through the development lifecycle.

RUP's iterative approach helped AU-System develop high quality e-commerce software for MeritaNordbanken quickly and efficiently. "The iterative approach is a very distinct way of working," Niska noted. "It helps the next person coming in to know exactly what has been done correctly and what needs to be done. RUP's iterative approach allowed us to minimize many risk factors from the project's very beginning."

Niska's team also found RUP's Use-Case-Driven approach to be a valuable tool. This approach, unique to RUP, describes software functionality from the end user's point-of-view. Use cases help software analysts, developers, and testers gain a clear understanding of project requirements and objectives. They ensure that such requirements are not only properly understood and documented, but also correctly implemented in the software and tested. "MeritaNordbanken and many of our clients accept use case models easily since it is a very humanistic way of describing functionality. Use cases helped us get all the desired functionality verified by all the right people," Niska said.

High Quality Demand + Fast Development Time = e-Software Paradox

Developing a high quality product like the MeritaNordbanken e-commerce solution within a short "Internet-speed" timeframe creates a common dilemma called the "e-software paradox." Many companies, including AU-System, have overcome the e-software paradox through RUP's iterative approach, expert knowledge base and industry best-practices. "RUP has helped us deal with this paradox very effectively," noted Niska. "Nowadays time-to-market is everything. If we can't keep up with our client's time-to-market requirement we just won't get the work. So it's essential that we meet quality and time demands and have a structured way of doing that. RUP provides us with that structure."

Confronting the m-Software Paradox

Mobile computing and Internet access through wireless handheld devices is a booming market in Scandinavia. There's even a section of Stockholm called "Mobile Valley" where



Meeting the project delivery date required that new engineers be introduced and brought up to speed in very short order.

mobile phone and "e-device" companies have clustered. AU-System actively participates in this market and has grown to become Sweden's leading software developer for these products.

Niska noted that developing mobile application software has mutated the e-software paradox into the "m-software paradox," with "m" standing for "mobile." "The development pace for mobile software is even more hectic than what we encounter with non-mobile these days," said Niska. "It's more emphasized because, for our clients, the payback times are even shorter in the mobile commerce products and services of today. They simply must be introduced in even shorter time frames. E-commerce and m-commerce are very closely connected to each other and both areas are crucial to AU-System. RUP and the other Rational tools we use, such as Rational Rose®, help us deal with the challenges in both markets," he observed.

e-Commerce Solution Successful

The e-commerce solution developed by AU-System for MeritaNordbanken had its commercial launch in April 1999. Over 150 merchants have already shown their appreciation for the secure and easy-to-use payment service and are now selling goods through the system. Each day several hundred transactions in Swedish kronor and the EU-currency euro take place smoothly and securely. Both MeritaNordbanken and its customers report high satisfaction with this easy-to-use, reliable and very secure e-commerce payment system.

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AU-System plans to strengthen its position as a leading e-commerce software provider, and Niska believes that the Rational Unified Process, as demonstrated on the recent MeritaNordbanken project, will play an ever increasing role. "We were on time and on budget, thanks to the fact that RUP gave us good control of project status," said Niska. "We had to deal with a lot of challenges on this project: the client changing requirements in the middle of the project, the Swedish vacation season and the personnel problems that created, the limited access we had to sections of the client's computer infrastructure, and the fast development schedule. But thanks to the RUP methodology, we could handle all these challenges successfully. We could even give the Bank an exact estimate of the cost for new requirements before they made a decision about those requirements."

About Rational

Rational provides a software development platform that improves the speed, quality, and predictability of software projects. This integrated, full life-cycle solution combines software engineering best practices, market-leading tools, and professional services. Ninety-six of the Fortune 100 rely on Rational tools and services to build better software, faster. This open platform is extended by partners who provide more than 500 complementary products and services.

IBM Rational software

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