

## Skandia IT Delivers On-Time Thanks to Rational Unified Process

**F**acing fierce competition, Skandia IT decided to go with Rational® and Microsoft technology to enhance their software engineering capabilities. Skandia IT adopted the Rational Unified Process™, Rational Rose®, Microsoft Transaction Server, Visual C++, Visual Basic, Rational SoDA® and COM/DCOM.

In 1997 Skandia completed 10 projects using these technologies, all on time. The Gartner Group measured their in-house productivity increase to be 80% from 1996 to 1997, and cost productivity to be 40% better than Nordic average.

Today the competition in the insurance industry sharpens for each day. Time to market is essential, your systems have to be in place before your competitors. The developers at Skandia IT have proven that they can build large, modern, mission critical applications on time and budget. During 1997, nine large insurance systems were developed. On time. And in some cases even ahead of schedule.

At Skandia IT everybody is confident that this was possible thanks to their new software development process that is based on the Rational Unified Process.

While many companies today are busy thinking about how to lay out their software development processes, Skandia IT is thinking about how to adjust their process. But one thing is for sure: Skandia IT's new development process is based on the Rational Unified Process and uses tools such as Rational Rose for C++, Visual Basic, Java, COM, ActiveX, and encapsulation of legacy systems. The process has given Skandia IT a competitive advantage that they will not soon relinquish. And they

will continue to deliver on time with help of the Rational Unified Process.

There are two main reasons why Skandia IT invested in a new software development process. One was because they had the same problems as most software development organizations: lengthy delivery times, lack of guidelines and a process too dependent on individuals. The other reason was a big organizational change that also required big changes in the software.

Bengt Bolin, VD Skandia IT explains "Before, we had long delivery times and a lot of home cooked solutions. We sometimes had problems delivering what our customers wanted, it even happened that we missed the objective entirely."

Johan Plogfeldt, responsible for the architecture continues, "Time to market is the highest priority. To meet deadlines is very important to us. Before the development department decided the delivery time themselves. That's not the case anymore. With ever increasing competition, where insurance companies are not constrained by restrictions and borders between countries, we have to deliver systems when our customers need them. This was hard to handle with our previous process since it, among others, was very dependent on the individual."

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Johan Plogfeldt

“Everybody did things according to their way of thinking and had their own solution to most problems. If the developer in charge was a specialist on Excel, then we had an Excel solution. If he or she was a mainframe specialist we got a mainframe solution. Now we have a infrastructure in place that provides person independent solutions that will last for the future.

“A new process soup to nuts,” explains Plogfeldt.

“As you may understand we had big problems, especially with respect to the increasing competition. We simply had to improve. And fast. But we didn’t want to solve just the immediate pain, the easy solution. No, we went deeper than that, revamped the entire process, and doing that provided us with a development process to last for the future,” comments Bengt Bolin.

Johan Plogfeldt continues, “There were several reasons for why we changed the whole process. The most important was that we reorganized our entire business. We

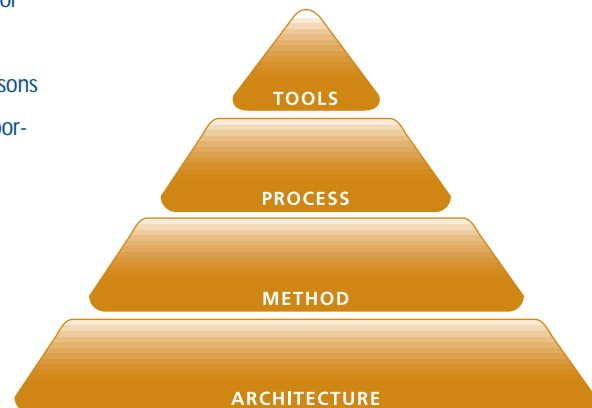
changed the development process in parallel to the change from a product oriented organization to a customer oriented organization. Do not misinterpret me now, we have always been caring about our customers, but when we measured how our customers were handled it came to our knowledge that in more than 50% of the cases they had to talk to more than one person at Skandia. Customer orientation means that 80% of the issues shall be possible to solve with one call. No handovers in other words. Our new systems also give the customer the possibility to handle a lot of things themselves, with telephone or via the world wide web. Our employees at Skandia can focus more time on becoming insurance specialists rather than learning how to use the system. Time saved is invested in customer relations.”

**Easier to Recruit Personnel**

Skandia IT has invested heavily in the installation of the new process. It’s an investment that has paid off. Better quality, predictable delivery times and side effects like the fact that today it is easier to recruit experienced project leaders and developers.

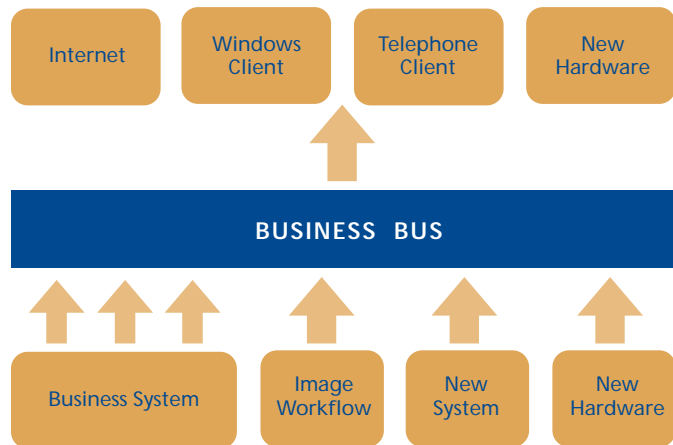
“The process is so good that other companies have shown an interest in visiting us to learn from our way of developing software. We see this as an acknowledgment of our achievements,” says Lasse Ericsson, Manager for Development and Maintenance.

Ericsson continues, “But that’s not all. I guess that



## Eight Important Issues for Skandia IT's Choice of Direction

- **Person independent technical solutions.** Before there was no process, no architecture, and no guidelines for how different problems should be addressed. This meant that different solutions varied based on who produced them, which led to maintenance problems. With today's process, architecture, tools and methods there are clear guidelines for what solutions should look like, and how they should be implemented.
- **Fast delivery, on time.** Without a process and an architecture, each system must be developed almost from scratch. A process and an architecture constitutes a platform by themselves, which means that a lot of the work is already done. This in turn means less workload, shorter lead time, and hence also more accurate time estimates.
- **Safe, reliable and resilient.** Before each development team had to develop their own process and evaluate tools. Today, Skandia has a separate department with 20 people that handles this. This assures continuous process improvement and the evaluation of tools is already done when the projects need them.
- **Expansion continuously requires new personnel.** Before it could take a very long time before a new employee got productive since there were no guidelines available, and each technical solution was person dependent. The process and architecture is fairly simple so a new employee can learn how systems are built at Skandia IT.
- **Do it right from the beginning.** Before, Skandia would accept mistakes. Today, it is unacceptable to make mistakes, especially when it is about understanding customer needs early-on and understanding how



the customer wants to use the system. This is achieved by using use cases as a natural part of the process.

- **Being able to reuse legacy systems.** A lot of time and money was invested in mainframe systems and Skandia couldn't rewrite them to fit modern architecture as fast as necessary. Instead they chose a process and architecture that made it possible to encapsulate the existing legacy systems and treat them as components.
- **A technical solution that will last.** New platforms keep arising, new systems and new client types need to be supported. To handle this, Skandia created an architecture where it is possible to keep building by connecting independent components.
- **Work closely with leading vendors.** For a company on the leading edge of technology, there are few partners with the resources and technology necessary. That is why it is important for Skandia to partner with leading vendors such as Microsoft and Rational.

everyone knows how hard it is to recruit experienced people these days. Let me then tell you that people contact us because the word is out that we have a state-of-the-art process. We actually have so many applicants, that we have to say no to super stars. People that would like to work in a well structured way in well organized projects are really frustrated and fed up with the chaos that characterizes most projects. These people like us instead."

"We have made the impossible possible and recruited 90 employees in nine months! Including consultants, we now have 450 developers at Skandia IT. Our development process is so good that it is now very attractive to work with us. I don't know of any company that has a better development process than Skandia IT."

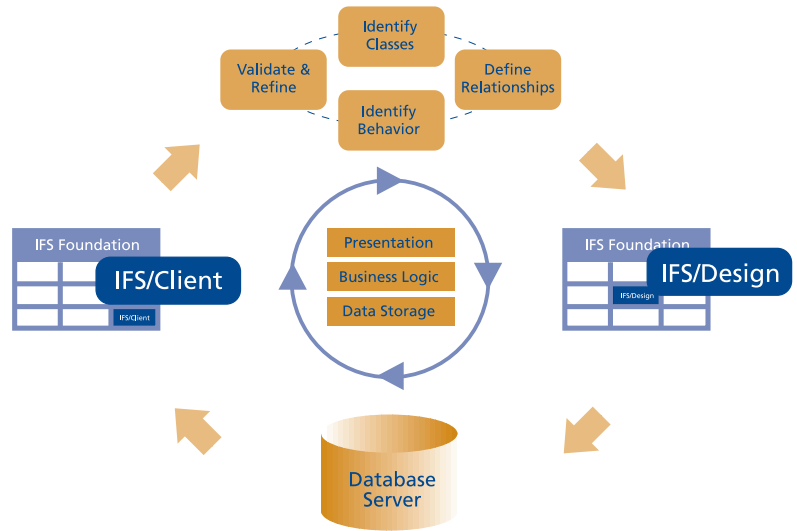
"From having been late with new technology, we are suddenly the technology leaders in the insurance industry. Since we are the leaders in the Nordic countries, we have no taillights to follow, and that means we have to change strategy. We must work closer with our vendors to optimize our position for the future. Innovation and technical readiness is key in the business society of today."

"We are now in a great position where we can harvest our investments. I have not heard anybody who was not positive or extremely excited about our situation. That is because we have created a process that produces additional value, rather than additional work."

### How did Skandia do it?

How often have we heard about processes that nobody uses? Processes that only becomes shelfware and that have no effect on what people are really doing. Skandia IT is different because they have succeeded in installing a process that is really there to help system developers and hence is used. Use cases to clearly communicate requirements, combined with a 3-tier architecture that makes it possible to develop flexible systems, is the reason for this success.

"Many companies still wonder if it really is necessary



to have a software engineering process, but for us at Skandia IT, it was a matter of survival. In many cases, there is a risk that having a process becomes a goal in itself and then is not used. That was not the case for us. Our process is a support system that helps, without inhibiting creativity. To create a sound and useful process is also the only way to achieve high productivity long term," explains Bengt Bolin.

Bo Brimark from Ericsson-HP, where he has been working with the Rational Unified Process continues, "Very early on in the process we utilized use cases to direct the development and model the system. Use cases are excellent to use when soliciting requirements. You have to know what the system is supposed to do and use cases are good because they help people who don't know the customer situation ask very relevant questions."

"In many cases, the customer has not thought through all the aspects of the system to be built. That is why we start asking who are the users of the system. Such a simple question forces both us and the customer to think through who we really are building the system for. Once that is done, we systematically walk through each user

category and list what use cases they need to perform. Again, the process makes the customers and users think in the right direction. Once that is done, we model the system as seen from the user perspective, in a very complete and simple way. In one case, Skandia IT managed to find a very serious error very early on in a huge project, by inspecting the use cases with the users. Since the use case very clearly communicates the system's main features to the users, it was possible to identify deviations from desired functionality."

"Another reason for us being so successful, is our flexible architecture and our strategy not to rewrite our legacy systems. Instead we wrap our legacy systems and use them as components in a 3-tier architecture," continues Johan Plogfeldt.

Many client-server systems of today are based on a 3-tier architecture. This means that you divide the system into layers that are as independent of each other as possible. The top tier is the application layer and that is the layer the end user sees.

Johan Plogfeldt explains, "Typical variants within the application layer are Window clients, Telephone clients, or Internet clients. The next tier contains business logic containing information, rules and procedures for, among others, insurance policies, and anything else related to the business. The third tier is the data layer that handles all data storage in the system, and may for example consist of a database."

"Many applications use a 3-tier architecture, but what distinguishes Skandia IT's solution is that the division is not only logical, but also physical as well as based on components. We have, for example, wrapped the old legacy systems in a way that enables us to use them as independent components in the new architecture. The legacy systems hence live their own life, but can be fully used by the entire system."

Skandia IT can handle new systems and new hardware in a similar fashion, as they are introduced. They are introduced as components in the bottom layer, without any

changes necessary to the end user, who can be the insurance taker him/herself. It is just as easy to connect new types of terminals. These are completely independent of what systems exist, and only need to be hooked up to the middle tier to work.

### **Only the best is good enough**

"We live in the internet world. Everything is just rushing by. To keep up-to-date is critical. To succeed, we have been serious about learning from both consultants and vendors," continues Johan Plogfeldt.

"We have not hesitated to hire top consultants to get the top competence. But you should know that we never hire consultants by the dozens. Each consultant goes through an employment interview so we always are fully aware of the quality of each contractor, which is very important. We only partner with top vendors, such as Rational, so we can learn from each other."

"There are several reasons why we partner with Rational. Technically we are so far ahead that there are not many others to speak with except Rational. Frankly, we need a good sounding board," continues Lasse Ericsson.

"In 1993 Skandia IT started to look for a process and tools to support our software development efforts. We contacted Gartner Group who explained that there were three alternatives that could be used as a base for the process. The three vendors were Booch, OMT and Objectory. These are now combined into one vendor, and one process—Rational Unified Process—which we think is excellent."

Johan Plogfeldt finishes, "It is very difficult to calculate these kinds of things but the Gartner Group made an independent study, and found that we had made an in-house productivity increase of 80% in one year. As you can see, our return on investment was substantial. Just the fact that we can recruit people to the extent we need, is an enormous advantage. That we also can control our projects, deliver the systems our customers want, and that our systems can be built as components makes up for the cost many times over."

### **Facts about Skandia IT**

Established in 1855, Skandia is the leading insurance company in Scandinavia. Skandia is an international company within the insurance and finance industries, with the Nordic countries being its home market.

The corporate group Skandia markets and sells a wide variety of products and insurance to investment industry, business and government sectors.

Skandia IT is a subsidiary responsible for the Skandia-groups IT support. Skandia IT develops, maintains, operates and refines all IT-systems within the Skandia group. There are currently 450 developers within Skandia IT, a large portion of whom today uses Rational products. Skandia IT has, among others, about 150 licenses of Rational Rose and 150 licenses of the Rational Unified Process.

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