

# "We often demand higher quality than our customers"

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**What exactly is quality in software engineering? Bettina Niklaus and Sabine Do-Thuong, software quality engineers at AdNovum, talk about Swissness and software quality, the development of Swiss quality software abroad and the requirements it must meet.**

**As a Swiss software company, AdNovum stands for quality. Is this kind of commitment specific to Swiss culture?**

BN: Punctuality and quality are certainly part of the Swiss identity. And, to that extent, we are a product of this culture. However, I do believe that the quality expectations at AdNovum extend beyond those typical of the Swiss. Many of our customers operate in environments where outages are simply not tolerated—especially in the financial services sector. Their systems require a level of precision and reliability that is high even by Swiss standards. And even some of our customers aren't really aware of the high level of quality they need.

**Can you explain that?**

SD: We often demand higher quality from our products and services than our customers do. Our many years of experience with large-scale software projects have given us a comprehensive and advanced understanding of quality in software engineering. We are experts in developing quality software.

**To produce quality, you need time and qualifications. These are expensive. Is there really a market for high quality?**

BN: Yes, there is a demand for quality, and some of our customers insist on 100 percent development in Switzerland. Our company's development reflects the considerable demand for quality: since 2009, the number of employees at AdNovum has doubled.



**Sabine Do-Thuong**, Dipl. Ing. Computer Science ETH, works as a software quality engineer at AdNovum. She plays a key role in advancing integrated and automated quality assurance at AdNovum and is an expert for continuous integration, test automation, source code and dependency analyses, risk-based testing and other quality assurance tools and methods.

**Bettina Niklaus**, MSc ETH in Computer Science, has headed the Quality Management Team at AdNovum since 2009. Before that, as a technical project manager, she supported Swiss-Hungarian development teams at AdNovum Hungary Kft. in Budapest in implementing projects for banks and public authorities in Switzerland. She has played a leading part in the development of quality assurance processes at AdNovum.

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SD: Of course, not every customer needs the kind of precision we seek. But when really excellent quality is required, only a select few companies are up to the job. Price is far less of an issue than cost for this kind of procurement decision. Customers who understand the difference between these two will quickly recognize the advantages of our approach.

**What are these advantages?**

BN: Quality starts with design, with the definition of the architecture and the choice of technologies and components. We analyze the components in depth before installing them. Also, we take into account aspects such as the vendor's reliability and trustworthiness and, of course, software maintainability.

SD: At the process level, we work with Continuous Integration (CI): From day one, the software is assembled every night in a nightly build. In addition, we test individual components and function blocks both manually and through automated tests, even in agile projects with short release cycles. And, finally, we continue to support our software after delivery—with warranties, maintenance and application management.

**AdNovum now operates in Singapore, too. Are Swissness and quality in demand there?**

SD: Yes, Swissness is a business factor in Asia. Our colleagues there keep giving us that feedback.

BN: By the way, software in Swiss quality can also be produced abroad. While the majority of our developers still work in Switzerland, we also develop in Singapore, and our near-shoring center in Hungary now produces a considerable proportion of our software. But to make this work, we first had to export our culture.

switzerland  
singapore  
open communications  
near-shore quality  
cultural identity  
complex software hungary  
engineers  
automated testing

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### So how do you export Swiss quality culture?

BN: With personal commitment and time spent on site. We have been in Hungary for about eight years now. While the educational background of our Hungarian engineers is similar to those of ETH Zurich graduates, they start out with different conceptions of quality. Especially during the first months, they therefore work closely with Swiss engineers and undergo a further education program developed to close the gap. In addition, our Swiss developers keep spending time in Budapest working with our local project teams. I personally worked there for two years. Also, we bring our people from Hungary and Singapore to Switzerland. It's part of our corporate culture to encourage and support such interaction. One third of our developers—roughly 90—now work in Hungary. The relatively short distance naturally helps. You can easily fly to Hungary for just two or three days. With Singapore, that's more difficult.

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## "Complex software products are like living organisms."

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### That sounds great—almost too good. Are there no downsides to a sales pitch based on Swiss quality?

BN: It only works if you are able to manage your customers' expectations. Things get difficult if customers do not understand that higher quality will increase cost on both sides—that is not just for us as suppliers, but also for them.

SD: In particular, customers with a lower degree of IT affinity often assume that the software will be 100 percent operational when delivered. But final integration can only be simulated up to a certain degree. Client IT systems often evolved over longer time periods, and the more complex they are, the more likely are anomalies or unforeseeable interactions.

### How do you deal with that?

SD: Open communications are key—right from the start. That includes the procurement phase. It's simply smart business to communicate every step and the associated costs from the beginning.

### Would customers otherwise really not know what they are getting into?

SD: Well, I wouldn't go as far as that. But especially in complex projects with many dependencies, it is often unclear at the start of the project what the end result should be.

BN: Complex software products are like living organisms—they have a lifecycle which includes operation, maintenance and the requirements that will inevitably extend beyond version 1.0. That's all part of the package. To create a good quality product, you need to control the entire lifecycle. That includes integrating the client's project team responsible for representing the interests of the end users of our software.

### How has quality assurance changed in recent years?

SD: Our role has become more important. A few years ago, our team had only three members. Today, our quality management team includes twelve quality assurance engineers and fifteen application testers.

BN: A key issue certainly is the further development of our continuous integration platform. Since its inception eleven years ago, the requirements have expanded a lot. In the early days, the focus was on middleware, now it's on Java- and browser-based applications. On top of that, we are facing new challenges in the mobile arena. Automated and platform-neutral testing on different end devices is a big topic just now. The same goes for the automation of testing. A lot of work still needs to be done there.

*Christian Walter, swiss made software*

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*Additional details about AdNovum are available on pages 34-35, 94.*