Henrik Czurda
sees a cloud ecosystem
on the horizon.

Markus Fuhrer
envisages a community
cloud.

"The Crucial Element Is Trust"

Future Talk: Cloud Technology A cloud presents opportunities, particularly for business models in the financial industry. But the clouds aren't where Markus Fuhrer, Head IT & Operations at PostFinance, and Henrik Czurda, Head Bank-driven Innovation at SIX, have their heads; they have their feet on the ground and are putting cloud technology to a reality test.

Interview **Matthias Bill**

We're conversing in the restaurant Clouds, at the top of Zurich's tallest building. And that's what we're also looking at through the window: clouds. They're constantly changing shape. A cloud is pretty capricious and unreliable, wouldn't you say?

Henrik Czurda   What might be true of clouds in the sky doesn't apply to the eponymous technology. It should be generally well known by now that data in a cloud is stored securely. Every day I experience just how routinely people in my personal sphere utilize cloud technology. They don't have any qualms about storing or sharing personal photos or even sensitive documents there. Skepticism toward cloud adoption often seems more prevalent to me in the business context.

Markus Fuhrer   I see it similarly, and yet banking and healthcare are two areas where people are leery of new technologies, particularly with regard to the storage of data. We arguably still need to bang the drum for cloud technology, especially in rather conservative-minded Switzerland.

So let's get started.

C   In my opinion, a cloud is usually more secure than a classical server environment in a data center. Cyber security tasks can be performed by a multitude of specialists rather than by just a handful of people on-site.

Another common misunderstanding is even worse, in my view: A cloud isn't merely a secure storage location. A cloud enables businesses to react quickly and flexibly to customer needs, for example. Companies potentially also being able to save costs in the process is more a secondary aspect.

F   Saving costs is always a good thing, of course, but it's primarily about being able to try out something different because it, for instance, surpasses the capabilities of one's own data center and applications. In addition to providing storage capacity, a "proper" cloud also puts computing power at your disposal and enables you to utilize artificial intelligence, deep learning, and related technologies on demand – billed per usage and infinitely scalable in principle.

C   Other banks, as well as companies like insurance firms or health insurers likewise operating in regulated industries, also want to take advantage of these benefits. That's why the solution that we at SIX are planning is based on a secure Swiss cloud for sensitive data managed from Switzerland. It can be combined with a scalable global cloud, for instance to process non-sensitive data with the aid of computing-intensive applications like artificial intelligence.

F   To begin with, a Swiss cloud helps all businesses that wish to keep their or their customers' data on Swiss soil. PostFinance

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has a clear stance on that: We will never store any client-identifying data outside Switzerland. PostFinance currently is still storing all of that data in its own data center.

C   It in fact isn't always clear where a global cloud provider, especially a public cloud provider [see box on page 34], stores and processes data. If the cloud isn't managed from Switzerland, that can significantly facilitate outside access. The US CLOUD Act is a good example of how protection of sensitive customer data could be endangered. Would the US federal government want to, and be able to, access data in case of hardship? No one can conclusively rule that out today. A lot of banks find that unsettling.

Markus Fuhrer
Markus Fuhrer has served as the head of IT (CIO) and as a member of the executive board of PostFinance since 2014 and additionally became the company's chief operating officer in 2017. He has worked for PostFinance for almost 30 years, rising through all managerial levels and heading different IT departments during his career. From 2013 through 2015, he additionally was the program manager in charge of PostFinance's core banking software transformation. Markus Fuhrer holds a degree in business informatics and an SKU Advanced Diploma (AMP-HSG) in corporate management.

Dr. Henrik Czurda
Henrik Czurda, Head of Bank-driven Innovation at SIX, has more than a quarter-century of experience at the interface between strategy and technology. He started his career as a consultant at companies including PricewaterhouseCooper and the Boston Consulting Group. He held management positions at Bank Julius Baer and Swiss Re, and was an executive board member and the CFO of a midsized Swiss high-tech industrial company for several years. Prior to joining SIX, Henrik Czurda was a partner at Boydak Strategy Consulting.

F   That's why US-based cloud providers are taboo to us. If we were to move data to cloud storage, we would do it in partnership with a reliable Swiss provider like SIX. It isn't just about security; it's also about our reputation. The customer admittedly can only have limited knowledge of where his or her data is actually located. But since data protection is an omnipresent topic, we have to take a stand on that. The Swiss label helps us to do that.

C   This makes a Swiss cloud attractive not just for Swiss companies. The stability of our country and our legal system is a genuine asset abroad. I personally have started to think more broadly ever since I've received multiple inquiries along this line.

Mr. Fuhrer, you are already accumulating experience with cloud technology.

F   Of course. We at PostFinance are open to cloud technology. We have been operating a private cloud, an enterprise cloud, for quite some time now. It offers us practically all possibilities. Already as an internal cloud it helps our developers, for example. We agilely toggle back and forth between development and operation, and are faster onto the market with new products. As our new infrastructure platform, it will take over hosting from the incumbent platform sometime in the medium term.

C   If you don't mind me asking, where do you stand with this build-out?

F   We created a good starting point with our migration to a component-based core banking software. However, one has to convert or newly develop applications, in the direction of microservices for example, to optimally utilize cloud technology. This applies regardless of whether one wishes to use a private cloud or a public cloud.

PostFinance is constantly adapting proprietary applications and those from its partners in small steps wherever it makes sense to do so. But we are deliberately taking our time and are working on demand. We take

"We want to use cloud technology to develop, test and present new business models."

Markus Fuhrer, PostFinance

up applications that were already being revamped anyway. They then end up in our private cloud alongside our new products like the independent mortgage brokerage platform Valuu.

C   Can a public cloud also help you toward your goal of becoming a digital powerhouse?

F   We want to use the advantages of cloud technology to develop, test, and present new business models. A private cloud may perhaps not be capable of supporting that ambition in the long run. But it's important to us to be able to have a say.

So, instead of a public cloud, what I have in mind is a community cloud that is linked with our private cloud via standardized interfaces in the sense of a hybrid model. The crucial element of such a community cloud like the one that SIX is in the process of building is trust, in my view. Trust is imperative to persuading all participants in a community cloud to subordinate their own interests for the benefit of a larger whole. If a community cloud for banking takes root, we would certainly consider joining.

C   The benefits of a Swiss cloud in fact don't come primarily from the technology, but from this new way of working together. SIX, which is   ❯

owned by banks in Switzerland, would be ideally suited to creating an ecosystem in which players in the Swiss financial industry can organize themselves more efficiently. They would be able to influence the evolution of the cloud at any time through a board of directors.

Moreover, the long-term character of SIX is a key element in instilling trust. Young FinTechs can't provide that. Every bank wants to work with them, though, to profit from their innovative prowess. By incorporating FinTechs into the ecosystem technologically and economically, we allow our fundamental stability to rub off on them. That, by the way, is an important aspect when I think about protecting banks' investments.

F   PostFinance is confident that business models in the future will be integrated through networks facilitated by open banking and easy FinTech tie-ins. The vision of a cloud ecosystem sounds alluring, but we still have a long way to go to get there. As I said, I believe in a hybrid model. Companies will want to put business models into practice that consist of a mix of applications in private clouds at proprietary data centers combined with services in a community cloud.

But how would that function in concrete terms in the solution that SIX envisages? At the moment, many so-called cloud services are nothing more than repackaged monoliths that offer too little leeway for a bank to differentiate itself. Supplying storage and computing capacity isn't complicated, but many of the various services from the multitude of different providers are complex. You talk about an ecosystem. How do you find a common denominator for that?

C   It can start with a nucleus of three to four like-minded participants. Some of them already bring cooperation partners – including FinTechs – with them. That can then turn into something bigger, fostering trust. Maybe it's better to speak of multiple such ecosystems co-existing in parallel and perhaps coalescing into one

over time. Advising and connecting the participants throughout this process would be a role tailor-made for SIX.

F   Standardized interfaces seem crucial to me under such a scenario. But as a non-EU country, Switzerland is not obligated to implement the Second Payment Services Directive (PSD2) to the letter. However, the PSD2 is exactly what's encouraging open banking.

C   Regardless of that, there are initiatives, for example, by the Banking Industry Architecture Network (BIAN)

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> **Henrik Czurda, SIX**

and Afinis Interoperability Standards [formerly the IFX Forum] that could lead to standards. We at SIX, by the way, will soon be able to handle exchanges of data between banks and outside parties, such as suppliers of accounting software, for example, via our standardized platform Connectivity.

The more that companies want to ply the same market with similar services, the more important standards become. Elemental to our cloud is an open platform that admits a variety of different suppliers – even with redundant functions. That requires a layer that orchestrates the different suppliers' services. This kind of service-oriented architecture also prevents vendor lock-in, a dependence on a single supplier. This way, banks can use some services collectively while continuing to differentiate themselves – maybe even better – through other services.

F   Exactly. We need to have close control over strategically important differentiating products on the client front. But all supporting processes that we have in common with others are ideal for pooling, which is where the greatest economies of scale lie. I think that SIX enjoys the full confidence of the market when it comes to putting such a solution into practice. ▬

Lexicon

Cloud Technology

A cloud is far more than just virtual memory. An externally provided **public cloud** also offers computing capacity and services that businesses can use flexibly only when needed. A cloud thus not only relieves businesses' own infrastructures and corresponding budgets, but also enables rapid product development or experimentation without risk. Sometimes, cloud technology is what makes services involving artificial intelligence or big data affordable for many businesses in the first place. But there are also companies that operate a **private cloud** for their own use in their internal network, oftentimes but not necessarily in their own data center. A **hybrid cloud** combines a public cloud with a private cloud. Businesses frequently keep sensitive data in the private cloud and perform large-scale calculations with non-sensitive data in the public cloud. A **community cloud** pools services for a group of like-minded businesses. Community clouds are an attractive option for companies such as banks, insurance firms, or health insurers operating in regulated industries.