

The digital revolution is taking place in the cloud

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By the end of 2019, [Google](#) and [Microsoft](#), two of the three biggest public cloud providers, will open data centres in Switzerland. For Swiss companies, this represents the removal of another perceived obstacle to integrating cloud computing into their businesses. It is a move that will continue to drive forward digital transformation.

Using cloud platforms – with their wide variety of directly applicable infrastructure and platform services – reduces the time and money that goes into developing software solutions. This can significantly shorten the time to market and allow companies to react more quickly to changing market conditions. However, in order to maximise the advantages of cloud computing, it is not enough for companies to simply adapt to new technical realities. They must also restructure their organisations and processes to become leaner and more agile. Cloud computing is therefore both a driver and an enabler of digital transformation.

Challenges

The road to cloud computing doesn't have to be a bumpy one. However, the challenges are not just technical in nature. For cloud computing to be successfully integrated into a business, existing fears and uncertainties must be taken seriously and addressed at an early stage. Is my data secure? Is it OK for my data to be stored in the cloud? Do we have costs under control? How great is vendor lock-in? Before these questions can be answered, everyone involved needs to have a better understanding of what cloud computing actually means. That's because greater insight eliminates blind prejudices and misunderstandings.

The cloud: better, faster, and less expensive

There are several reasons to adopt cloud computing:

Achieve goals faster with cloud computing

Time to market is more important than ever before, because the competition never sleeps. These days, however, it can often take a while for new digital solutions to be ready to go live. A lot of time is 'wasted' on preparing and configuring the basic IT infrastructure required (server, network, firewalls, storage, databases, middleware, monitoring). By contrast, [IaaS and PaaS delivery models mean that, in the cloud](#), the necessary resources are available at the touch of a button:

- With Infrastructure-as-a-Service (IaaS), the cloud provider makes basic IT resources available, such as, computers, storage and networks. Instead of a business having to purchase, configure, and operate a SAN disk array, it can simply rent a few terrabytes of SSD block storage from the cloud provider.
- With Platform-as-a-Service (PaaS), the cloud provider is also responsible for configuring, patching, hardening and operating entire platform components, e.g. relational database management systems, such as PostgreSQL, or container orchestration tools, such as Kubernetes. The consumer remains responsible for their data and the applications to be run. Furthermore, [in the cloud, infrastructure-as-code templates](#) automate the process of provisioning infrastructure, which significantly speeds it up even further. Once created and tested, a single template can be used to automate the setup of development, integration and production environments.

Infrastructure-as-code will completely revolutionise IT as we know it,

because it uses code to describe the infrastructure. This means that software best practices can also be applied to IT infrastructure. Version control for IT infrastructure can be managed in source code management systems; changes to IT infrastructure can be automatically tested with CI pipelines; and CD pipelines can be used to automatically roll it out. As well as improving efficiency, this also significantly improves quality, for example in terms of business continuity.

Cloud computing increases agility

In the cloud, there is no need for up-front investments or long-term financial commitment. It is therefore often possible to change direction without having to write off IT investments, such as hardware or licenses. If the software development team needs a relational database, one can be ready in just a few minutes. If the team later realises that their needs are better served by a column-based NoSQL database, then the relational database can be replaced in a few minutes.

Cloud computing enables better and more customised solutions

The secure and reliable operation of a database or container platform requires a team of specialists. These technologies can be rented in the cloud, and the cloud provider's experts will manage their operation. The architect of the cloud solution can choose the most appropriate solution for any given application from a broad and continually growing portfolio of components, without having to worry about having the existing expertise or staff to securely operate the components. In the cloud, encountering restrictions because the

underlying technology is limited or inappropriate is a thing of the past.

Cloud computing is often much more affordable

Thanks to pay-as-you-go and pay-per-use models, businesses using the cloud only pay for those resources they actually need, and only as long as they actually use them. For example, there is no need to provide reserve capacity in the form of additional servers, which are only required in the event of a future peak in demand. And, if your batch processing cluster is only required once a month for a six-hour billing cycle, then you only pay for six hours of operating time a month. Switching from IaaS to PaaS models can generate significant savings because, under the shared responsibilities model, the cloud provider performs the more labour-intensive tasks that are carried out by specialists, such as providing hardware (IaaS) and configuring, operating and monitoring the patching of databases and middleware components, including the underlying operating systems (PaaS).

Cloud computing can increase IT security

All roads lead to the cloud. And not despite security challenges, but precisely because the cloud can increase the security of IT systems and the business data being processed. The biggest public cloud providers take the issue of security extremely seriously, investing heavily in it and, compared to SMEs, can afford to provide large teams of the world's leading security experts. Furthermore, there are many cloud services available to the architects of cloud solutions, allowing them to guarantee and improve the security of their solutions, such as services to repel distributed denial of service (DDoS) attacks. Many services also feature the automatic integration of data encryption options, audit and compliance components, and identity and access management solutions.

So when are you joining the cloud?

What's stopping you from taking your first steps in the cloud? The barriers to entry are actually minimal for first-time users. Most companies have systems engineers or software engineers who would be more than happy – given a little time and a negligibly small budget – to gain some initial experience of AWS, Azure, Google, etc. Why not see for yourself what can be achieved in a week, with a little petty cash? Developing internal expertise, and eliminating fears and prejudices, is an important first step along the road to the cloud.

And, when it comes to taking further steps, [we would be delighted to help you become an agile and cloud native company](#). As a partner of Google Compute Cloud (GCP), Microsoft Azure, and Amazon Web Services (AWS), we know the direct route to the cloud – including how to avoid pitfalls and which short-cuts are worth taking.