

Trend spotlight

Trends for 2018: when data reveals its business value



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On behalf of



TABLE OF CONTENTS

Trend 1: Blockchain – the promise of disruptive business models in decentralized ecosystems. 5

Trend 2: The Internet of Things – the diversity of data creates innovations..... 7

Trend 3: Immersive experience – new possibilities in human-machine communication..... 9

Trend 4: Artificial intelligence – when systems learn to solve problems independently by themselves..... 11

Trend 5: Cyber security – full protection no longer exists. But fast detection and reaction to incidents does. 13

Trend 6: Cloud computing – the turbo for digital transformation..... 15

PAC's conclusion and recommendations for 2018 17

Swisscom as an experienced partner for digitalization 18

About PAC – a CXP Group Company 19



On the path to data-driven business

Will 2018 be the year when smart data leads to more efficient business processes, innovative customer services, or even disruptive business models? Will 2018 be the year of data-driven business?

"The chances are good, because we see a whole series of innovative, data-based projects. A large number are just emerging, many are already being specifically worked on, and some are already in live operation," says Urs Lehner, Head of the Swisscom Enterprise Customers division, confidently.

The right technological conditions for this development are in place, according to Lehner: security and privacy, as well as cloud computing and connectivity (mobile or fixed-line) are the backbones for bringing innovative solutions such as blockchain, artificial intelligence (AI), the Internet of Things (IoT), and virtual reality to new business applications.

A look at a small selection of application examples shows that this is not a dream of the future, but business practice: the HVAC¹ provider Meier Tobler has developed completely new services based on IoT. SBB² uses augmented reality and data glasses for more efficient maintenance procedures on the Gotthard Base Tunnel. The e-invoicing platform Conextrade is establishing new value-added services on the basis of blockchain. And Swisscom itself, with the help of artificial intelligence, has raised the processing of written and verbal customer inquiries to a higher level.

¹ Heating, ventilation, air conditioning
² SBB-CFF-FFS (Schweizerischen Bundesbahnen – Chemins de fer fédéraux suisses – Ferrovie federali svizzere)



"The core of all new digital business models and services is data. It needs to be properly analyzed and anonymized. And, above all, you have to be able to draw the right conclusions from the analyses."

Urs Lehner, Head of the Swisscom Enterprise Customers division

"The core of all new digital business models and services is data, and today there are already many sources in mobile devices, manufacturing facilities, warehousing, salesrooms, and smart products, which reveal a lot about customers and their wishes, or about production processes and product quality," emphasizes Urs Lehner. "It needs to be collected, analyzed, and anonymized. And, above all, you have to be able to draw the right conclusions from the data analyses."

If this is pursued consistently, business decisions could be made less from a gut feeling, but on the basis of reliable data, says Urs Lehner. You gain insights into product usage patterns as well as the wishes and criticism of customers. And ultimately, more efficient processes or new, data-driven business models can emerge.

This trend report describes six major innovations that every organization should consider as they move towards a data-driven business. Not every innovation is necessarily suited to the individual requirements of each company. However, it is worthwhile looking at the expert opinions and implementation examples presented herein to broaden your horizon and possibly receive inspiration for your own digital transformation.



Trend 1: Blockchain – the promise of disruptive business models in decentralized ecosystems.

As if the regular year-end rally does not already cause enough excitement and frenzy of activity on the global stock and financial markets, the scene in 2017 was enriched by a particularly fast-paced race as the year drew to a close: the cryptocurrency bitcoin easily broke through the CHF 18,000 mark per bitcoin – an increase of 1,800% since the beginning of 2017. With the high media presence, the underlying blockchain technology has also become the focus of public attention, as it creates the necessary basis for transparency, security, and verification of transactions.

But blockchain is not the same as bitcoin. "There are concrete use cases in which blockchain enables the digitalization and complete automation of processes and business transactions. Many activities can currently be seen at insurance firms, logistics companies, in the public health sector, and even at banks," explains Michael Lewrick, COO at Swisscom Blockchain AG, from his project experience.

Banks are launching corresponding projects in the field of trade finance, i.e. in the financing of international trade. In the insurance sector, new business models around microinsurance policies are possible (for example, before a dangerous downhill ski run). These policies can be taken out on an ad hoc basis and processed in an automated manner with the help of so-called 'smart contracts'. Public or private blockchains are used, depending on the application.



"Blockchain unleashes the disruptive potential in that existing and new market participants can adopt new business models and market roles."

Michael Lewrick,
COO at Swisscom
Blockchain AG

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Swisscom Blockchain AG primarily offers consulting services for major customers. Swisscom Blockchain AG also supports various proofs of concept for internal Swisscom projects. For example, the e-invoicing platform Conextrade is currently also being equipped with blockchain features. The new solution is intended to realize new business models in the future by mapping fully digitized invoices onto the blockchain. On this basis, new value-added services can be made available to the existing ecosystem, including the services of factoring companies and auditing companies, for example.



Many banks and insurance companies use private blockchains (such as Hyperledger Fabric), which dispense with the expensive consensus mechanisms of public blockchains (such as Ethereum) and also give them the possibility of sharing sensitive data in their system only with a trusted circle of stakeholders.

"In 2018, you will see a multitude of new blockchain applications going live. CIOs should explore the potential of private blockchain platforms for their companies in the coming year if parts of the business model are based on transactions of valuable content," says Joachim Hackmann, Principal Consultant – Digital & IoT at PAC.

The examples clearly demonstrate the strengths of blockchain. Transactions are documented decentrally and unchangeably, they are transparent to all parties involved, and can dispense with fee-based services of intermediaries. Automation with the help of smart contracts does the rest, meaning that the costs for transactions decrease significantly, making the new business models described above economically possible in the first place.

"But the most important feature is a completely different one: the blockchain creates the technological basis for digital business ecosystems," says Michael Lewrick, describing the significance of blockchain (see text box).

Such ecosystems will, for example, become established in logistics tracking applications, interoperable mobility platforms, or the trading of micro-licenses for moving images.

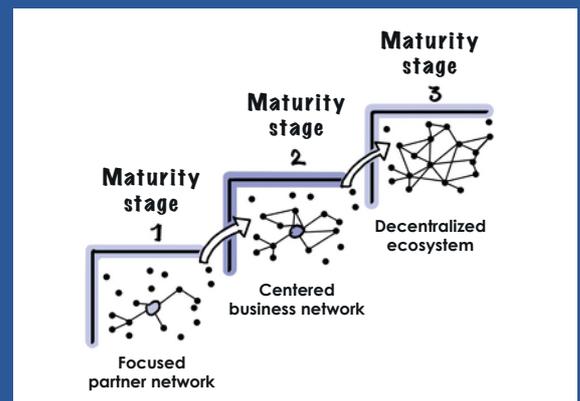
"Blockchain can improve transaction efficiency in many industries. However, the technology unleashes the true disruptive potential in that existing and new market participants can adopt new business models and market roles," says Lewrick.

"In 2018, you will see a multitude of new blockchain applications going live. CIOs should explore the potential of private blockchain platforms for their companies in the coming year if parts of the business model are based on transactions of valuable content."

**Joachim Hackmann,
Principal Consultant – Digital
& IoT at PAC**

Decentralized business ecosystems

Decentralized business ecosystems often have no center, and many players operate on an equal footing in the network. Companies that are already successfully designing business ecosystems have generally focused heavily on the user or customer. This collaboration of loosely coupled players is characterized by co-creation. The aim is to create new cross-industry offers within the framework of a coordinated value system that everyone accepts. As an enabling technology, blockchain helps to quickly find consensus, define smart contracts, and thus automatically execute events. "The customer plays a central role in this, benefiting from the simplicity and positive experience of the coordinated service offering," says Michael Lewrick, describing the importance of blockchain.



Trend 2: The Internet of Things – the diversity of data creates innovations.

Almost all of the current digital technologies cumulate in the Internet of Things. Cyber security, cloud computing, and connectivity are key basic technologies for transforming the distributed network of intelligent products and sensors into an Internet of Things (IoT). Big data, analytics, and automation convert this into new services and business models. "We like to explain the underlying mechanism using the A3 method," says Ralf Günthner, Head of Industrial Internet of Things & Industry 4.0 at Swisscom. "'Acquire' means generating data, transferring it to the cloud and processing it. 'Analyze' is the second step that includes, among other things, visualizing the data, defining thresholds, initiating actions, and applying machine-learning algorithms. The real added value, the unique selling point, is created in the process step 'Act', where, for example, real-time data is used to gain better insights for planning or to design new business models by tracking products."

What sounds simple and coherent in theory harbors some challenges in practice. The IT world, which until now has focused primarily on supporting back-office processes, needs to be merged with the world of production. "This creates an area of conflict because the data flows from the production system to the central ERP system and back," warns Ralf Günthner. The cloud has proven to be a suitable integration point.

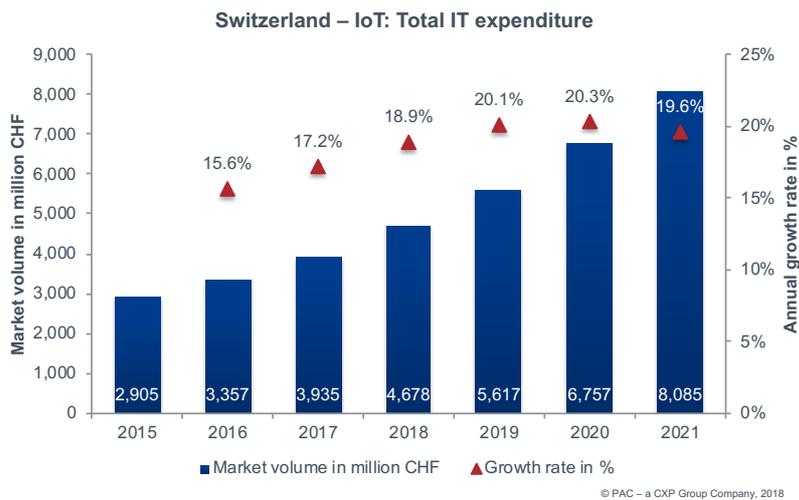
Here, the data from both worlds (such as control data from production with inventory data from the ERP system) is linked together, enriched with additional data, if necessary, and then analyzed to generate new insights or services from it.



"The topic of IoT will keep us busy for the next 20 years. It is crucial that Swiss companies preserve their innovative power in the Internet of Things."

Ralf Günthner, Head of Industrial Internet of Things & Industry 4.0 at Swisscom





The Swiss IoT market will grow very fast in the coming years.

Initial projects are already showing what is possible with the Internet of Things, such as that of Meier Tobler AG, based in Schwerzenbach, which has built an IoT-based business model around its heat pumps (see BEST PRACTICE description). But many Swiss companies are still struggling to recognize the potential of IoT, or they fear slumps in their traditional core business.

"An essential feature of IoT is that it is highly application-oriented: topics such as Industry 4.0, connected car, smart energy, or smart health can often no longer be limited to individual branches of industry. IoT is considerably shaking up ecosystems and competitive situations in almost all sectors," says Arnold Vogt, Principal Consultant/Analyst IoT at PAC. Overall, business associated with IoT is still at the very beginning of its development. One can only imagine what momentum IoT can still develop in combination with technologies such as blockchain and artificial intelligence. "The topic will keep us busy for the next 20 years," Ralf Günthner is convinced. Therefore, it is crucial that Swiss companies preserve their innovative power in the Internet of Things.

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Four out of five new buildings in Switzerland today are already equipped with heat pumps instead of fossil fuel heating systems. Heat pumps generally require less maintenance than conventional heating systems and thus endanger the traditional service business of **Meier Tobler AG**. However, heat pumps are complex electromechanical systems, which should be readjusted depending on changing conditions in the home and duration of operation.

Against this background, Meier Tobler has connected the heat pumps of customers to its own IT systems via an IoT platform. On this basis, performance data can be read and parameters changed to allow a variety of new customer services, from the easy-to-use app that displays power consumption to the all-round carefree "smart-guard" package, which runs in the background to ensure smooth operation and quick intervention when needed.



Trend 3: Immersive experience – new possibilities in human-machine communication.

"Immersive Experience combines augmented reality and virtual reality and is in this sense something of a generic term for both technologies. But it goes beyond a simple combination of the two, because it engages other senses," explains Milos Radovic, Senior Business Developer at Swisscom. VR (virtual reality) technology is already developed to such an extent today that it is possible to move things in the virtual world by hand movement. If new materials or devices feed back to the human user in the form of a stimulus that is simulated (for the sense of touch, for example), then this would be the first step towards Immersive Experience.

"Augmented reality and virtual reality connect virtual and physical worlds. In the future, technologies will become more and more sophisticated and evolve into the so-called 'Immersive Experience', so that the connection between the physical and virtual worlds seems even more intense," says Klaus Holzhauser, Head of Digital CX & IoT at PAC, describing the future development.

Currently, it is mainly augmented reality (AR) that plays a role in practical use. With the help of data glasses, a tablet, or a smartphone, images of the real world are superimposed with digital information. Swisscom's in-house technicians, who are responsible for maintaining the network infrastructure, are already using data glasses when working on machines and objects. For example, they can attach a digital selection menu to a real object. As soon as they fix their gaze on a certain point on the equipment to be maintained (such as the chassis) using their data glasses, the attached selection menu appears in the field of vision.

AR-assisted help is useful when working on complex processes that are largely based on visual impressions, such as the maintenance of



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Milos Radovic, Senior Business Developer at Swisscom

complicated machines. Using AR and VR technologies, technicians could zoom into the inside of a machine, like in an exploded view, without having to disassemble the physical machine. In 3D printing, VR can help visualize and analyze the models before production, and simulate use of the models.

"Augmented reality and virtual reality are completely new, disruptive ways of operating machines, and Immersive Experience will enable interaction at every physical and digital touchpoint. Before the smartphone came on the market, a phone without a keyboard was unthinkable. Immersive Experience will follow a similar path," expects Milos Radovic.



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Klaus Holzhauser, Head of
Digital CX & IoT at PAC

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SBB uses augmented reality (AR) to maintain the new Gotthard Base Tunnel. For this purpose, an app has been developed that runs on Microsoft's HoloLens and on smartphones. With the HoloLens headset, information such as the workflow can be faded into the field of vision so that the technician can perform the tasks hands free. With the smartphone app, the technicians can get video support from external professionals and interact with them in that the professionals can freeze a camera shot, draw directly on the screen, and provide real-time instructions.



Trend 4: Artificial intelligence – when systems learn to solve problems independently by themselves.

Due to the numerous science fiction blockbusters to come out of Hollywood studios, almost everyone who comes across the term 'artificial intelligence' already has a specific image in mind, that of an android — that is, a human-like robot — or an unleashed machine.

Although AI (artificial intelligence) has also dominated the agendas of Swiss companies for quite some time, projects in the world of business have little in common with the image projected by the movie industry.

"We are currently pursuing two focal topics with artificial intelligence. The first is the analysis of texts, including large volumes of text. The second is speech recognition," explains Felix von Reischach, Head of Artificial Intelligence & Machine Learning Group at Swisscom Enterprise Customers.

"Above all, artificial intelligence is a new paradigm for designing software. Previously, software was programmed to replicate the domain knowledge of employees as accurately as possible. With artificial intelligence, computers learn the logic they need themselves, based on previous experience and the analysis of large amounts of data. Over time, this enables them to learn to solve problems."

Felix von Reischach, Head of Artificial Intelligence & Machine Learning Group at Swisscom Enterprise Customers





The business value for both approaches results from the automation. In the case of text recognition, the technology comes into play for email triage services, for example. Countless messages are sent to company email inboxes, often concealing vague inquiries, support and service requests, business-related documents, and the like. Today, messages are mostly sifted through, assessed, and forwarded manually. Email triage services, which are already in use today in some Swiss banks, automate this process with the help of artificial intelligence. "Over time, the AI software learns which content is delivered with which priority to which person or department," says von Reischach, describing how it works.

Similarly, artificial intelligence helps with speech recognition in call center operations, for example to identify customers in advance in order to be able to correctly classify their requests, and ideally to propose solutions without human intervention. The systems are self-learning, but must be taught at the start. For example, Swisscom is currently training a new solution for Swiss German speech recognition by reading texts aloud.

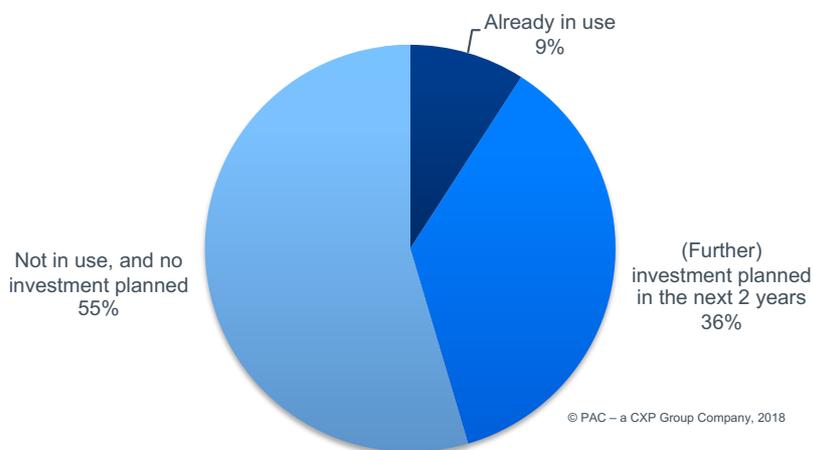
"Above all, AI is a new paradigm for designing software. Previously, software was programmed to statically replicate the domain knowledge of experts. With AI, computers learn the logic they need themselves, based on previous experience and the analysis of large amounts of data. Over time, this enables them to learn to solve problems," says von Reischach, describing the differences.

Frank Niemann, Vice President – Enterprise Applications & Related Services at PAC, adds: "The enormous importance of AI for companies in all sectors is easiest explained by the extensive possibilities for automating internal and external processes. For AI to be effective, the underlying processes must be clearly aligned with automation."

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Does your company already use artificial intelligence technologies?



Almost half of the Swiss CxOs surveyed already use AI or have specific plans.

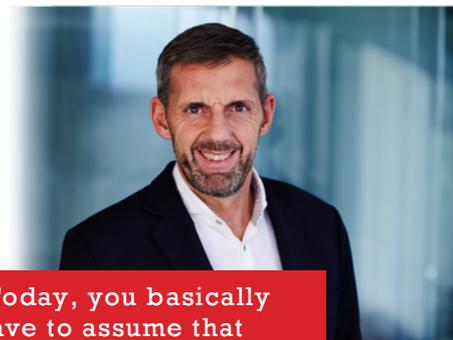
Trend 5: Cyber security – full protection no longer exists. But fast detection and reaction to incidents does.

There is no doubt about the high commercial importance of data. It represents a financial value that needs to be protected. This realization is not really new since companies have been using IT systems for many years. What is new, however, is the scale of data volumes, the increasing amount of information contained in this data, the influence on business models, and the variety of data storage options. The last point in particular creates enormous challenges: while information used to be stored primarily in central data centers, today it is distributed amongst cloud environments, smartphones, tablets, intelligent products etc., and – to make matters worse – all devices are connected.

"In public infrastructures in particular, absolute security can never exist because hackers are constantly expanding their skills and services, and in particular 'professionalizing' them. This means that the biggest challenges are not individual hackers, but bigger hacker organizations acting on behalf of different interest groups. Therefore, we expect increasing interest in private installations such as private clouds and closed networks for individual use cases. The topic of cyber security will not only keep CIOs very busy in 2018, but also in the coming years," expects Wolfgang Schwab, Principal Consultant at PAC.

This also makes the requirements for cyber security technology more diverse. Whereas a concentrated perimeter protection at the entrance to the data center used to be sufficient, today there is an infinite number of entry points to access critical data. Thus, the attack surface has also increased and traditional security mechanisms are no longer enough.

Modern security solutions combine classic prevention mechanisms (firewall, virus protection) with new detection methods (intrusion detection, threat intelligence, security analytics). This is because the detection of attacks is just as important as the defense against them.



"Today, you basically have to assume that successful attacks are possible. It is crucial to minimize the time between the occurrence and recognition of the incident. Only in this way can immediate countermeasures be taken"

Duilio Hochstrasser,
Security Sales Consultant
at Swisscom

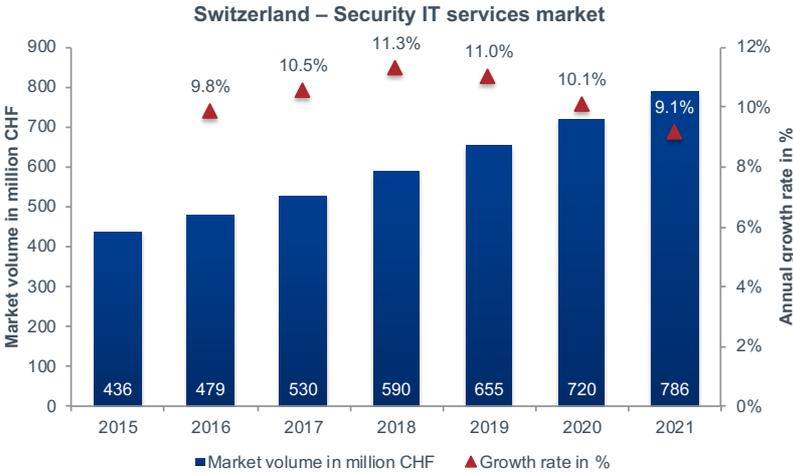


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Wolfgang Schwab, Principal Consultant at PAC



Not infrequently, reports Duilio Hochstrasser, Senior Security Product Manager at Swisscom, customer projects are concerned with finding out whether any data has actually been stolen and, if so, which. "Today, you basically have to assume that successful attacks are possible. It is crucial to minimize the time between the occurrence and recognition of the incident. Only in this way can immediate countermeasures be taken," says Hochstrasser, discussing the challenge.



The strong growth in the Swiss security market is mainly driven by the strong demand for data and application security services.

The arsenal of security tools has grown significantly in recent years. It begins with the behavioral analysis, which analyzes the communication behavior of people and machines and constantly checks for noticeable deviations. Often, previous attacks are also dissected and examined for patterns in order to ward off similar attacks in time. Swisscom also immediately sees anomalies and potential attacks through its network expertise. The knowledge gained from attacks automatically flows into their security services. With these services, their managed security clients benefit from a swarm intelligence that is unique in Switzerland. "The key thing is to react quickly and correctly to incidents," emphasizes Hochstrasser. "The possibilities range from isolating an affected machine to communicating with the judiciary, authorities, and public in the event of a successful data breach and searching for stolen data in public networks and the dark web."



Trend 6: Cloud computing – the turbo for digital transformation.

Cloud computing is not a new topic, but rather an ongoing one. And as the digital transformation towards a data-driven business gains momentum, so does the importance of cloud computing, as "it supports companies at two different levels: it helps to optimize the existing business and it is a turbo to generate and implement new ideas," says Roland Bieri, Head of Product House Network and Cloud at Swisscom. "New services that used to take several weeks to implement are now available in just a few minutes, and in future even as a pay-as-you-go model or as a self-service within seconds."

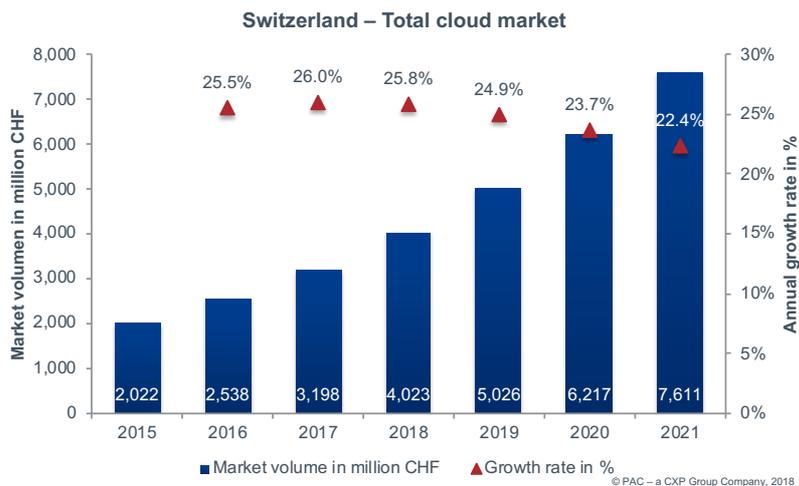
Security and privacy are top priorities for all cloud applications. Nevertheless, the respective specific characteristics of the cloud environments used can be very diverse. Companies such as Swiss Re and the dormakaba Group have opted for a private cloud installation, while others require public cloud solutions with local data storage. "Sometimes 'Swissness', customer proximity, and data privacy play a minor role. Then we can also offer hybrid models that integrate the capacities and functions of hyperscalers such as AWS and Microsoft," says Bieri, describing the different demands of customers.

Overall, there is a trend towards higher quality cloud solutions. Against this backdrop, PaaS (platform as a service) plays a crucial role because a large number of new, digital business models are programmed in a very individual way and because it creates the freedom to quickly and easily try out new ideas and launch them on the market. In many areas, SaaS (software as a service) can map the necessary support processes for digital transformation, such as HR and recruiting processes, shop solutions, and IoT platforms. Even the banking industry, which is often very cautious when it comes to innovation and cloud computing, is opening up to SaaS in order to modernize its core processes and adapt them to the increasing demands for flexibility, agility, and speed.



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Roland Bieri, Head of Product House Network and Cloud at Swisscom



Cloud is one of the most important enabling technologies for digital transformation. Not least because of this, growth rates remain at a high level.

However, growing acceptance of cloud also creates new challenges, as "the phenomenon of multi-cloud environments is becoming increasingly apparent as many companies are using multiple cloud platforms," observes Karsten Leclerque, Principal Consultant – Outsourcing & Cloud at PAC. "In some cases, multi-provider strategies are deliberately pursued in order to become independent of individual providers. However, cloud platforms are often purchased in an uncoordinated manner due to the lack of a comprehensive cloud strategy." This complicates management, compliance, and transparency, as well as data integration and interoperability, making it difficult to develop and operate data-based business models and customer services. "Businesses should ensure that they prevent burgeoning multi-cloud sprawl from the outset or tame it, and integrate cloud services with existing cloud installations," advises Leclerque.

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Swiss Re procures infrastructure, a development platform including a runtime environment, databases, and IT service management from a highly secure cloud, which guarantees that data is stored exclusively in Switzerland. The aim of the reinsurance group is to optimize business processes and make them more flexible. The company wants to be able to quickly and cost-effectively switch on computing and storage space in peak times, but just as easily turn it off when demand drops off. This is the case, for example, when natural disasters occur and suddenly a large number of employees at global locations request reliable data at the push of a button. Or in the case of test systems in software development that are only used during the day for a fee.

The **dormakaba Group**, on the other hand, has implemented new business ideas with the help of cloud-based applications. The most recent example is an Internet-based access system for small and medium-sized enterprises. The core of the new service is a cloud platform on which customers (or authorized specialist partners) can set up and manage their access systems. dormakaba provides the desired functionalities as software as a service and has thus expanded its own mechanical door lock product business with a new service business.

PAC's conclusion and recommendations for 2018

Data-driven business is here, as the examples and experiences of experts presented in this report show. But it is important to keep one thing in mind: all of the specialists and companies cited in this report are at the forefront of digital transformation. The majority of Swiss companies are still at the beginning of this development, and many will probably find the challenges complex and unmanageable, being faced with completely new processes, technologies, and business models. Even though digitalization will change many things in the future, one thing remains certain: new technologies can be mastered. The big challenges lie in the changes to the organization and processes, and in altering the mindset of management and employees.

This report, as well as the following recommendations, can serve as a starting point for launching projects that aim to create a data-based company.



Ditch silo mentality: Data-driven business models cannot be designed and implemented by individual business units. What is needed is an integrated approach that involves all stakeholders.



Start small: Digital transformation is a big topic and you should start small. Begin with manageable proofs of concept and selective projects in order to collect consistent knowledge and estimate possible added value.



Be patient: Do not expect a quick return on investment from digital projects. The transformation to a data-driven business is a marathon, not a sprint.



Understand data: Huge amounts of data will be created in the course of your projects. You have to be able to read the data to unlock their potential. Build up data know-how.



Evaluate technologies: Trends come and go. The same applies to technologies. Take a close look to see which technology promises added value for you.



Ensuring security and privacy: Data is becoming a business asset. It must be protected and secured just as properly as production facilities.



Formulate strategy: To start with, digital projects can simply be cool and innovative. In the long run, however, they must be placed in a larger framework and fulfill business purposes.

Swisscom as an experienced partner for digitalization

Small steps to the new customer experience – fast and well thought-out transition to the digital business model

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More information about digitalization can be found at:

<http://www.swisscom.com/digitalisation>

Do you have a question or would you like to talk to one of our experts? If so, please get in [contact](#) with our digital experts today.

About PAC – a CXP Group Company

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