



KEY FIGURES



SWITZERLAND AS A CYBERSECURITY LOCATION

AT A GLANCE

Switzerland's strengths such as neutrality, legal certainty and political stability are also valid in the cybersecurity sector. Its greatest asset lies in a high level of privacy protection and a low density of regulations as well as the availability of highly specialized engineers. Switzerland has a top-notch internet infrastructure in comparison to other countries. Its reliable and cost-effective power supply ensures flawless operation of servers in data centers and security operations centers (SOCs). All these are reasons why many international companies such as Kaspersky, SWIFT or Bitfinex choose Switzerland as the preferred location for their regional data centers.

In its humanitarian tradition, Switzerland is making an important contribution to improving cybersecurity across the world and to promoting a peaceful use of ICT. The country hosts many organizations, such as the Internet Society, the Internet Governance Forum (IGF), DiploFoundation, the International Telecommunication Union (ITU), ICT4Peace, the Geneva Centre for Security Policy (GCSP), and the WEF Cyber Security Center.

Sources: DiploFoundation;
BAK Economics, 2018; MSM Research;
The World Bank, 2019

RESEARCH AND DEVELOPMENT (R+D)

- Switzerland's expertise is defined by excellence in engineering, encryption and algorithms. The country has a **strong commercial base in the areas of security and encryption**, with companies such as Kudelski, Acronis, OneConsult, Infoguard, Proton-mail, Securosys and IDQuantique, a world leader in quantum cryptography. In addition, many companies in Switzerland offer niche services in all important areas of cybersecurity with a strong hands-on approach.
- As security concerns become increasingly important in hardware manufacturing, there is a growing demand for better manufacturing processes that provide optimal device security. Swiss companies such as Securosys have built an international reputation for the **reliability, quality and end-to-end security of "Swiss Made" products** and manufacturing methods. The encryption for mobile phones is particularly good in Switzerland, since small companies, mainly spin-offs from the Swiss Federal Institutes of Technology in Zurich (ETHZ) or Lausanne (EPFL), offer cutting-edge technology.
- The biggest cyber security segment in Switzerland is **network security**. In 2017, there were 1,106 patents from Switzerland in this field; 151 of these were ranked as **top impact patents**. In the field of hardware security, patent numbers in Switzerland have climbed from 61 to 847 since 2000.

Top Research Companies in Terms of Patent Portfolio Size

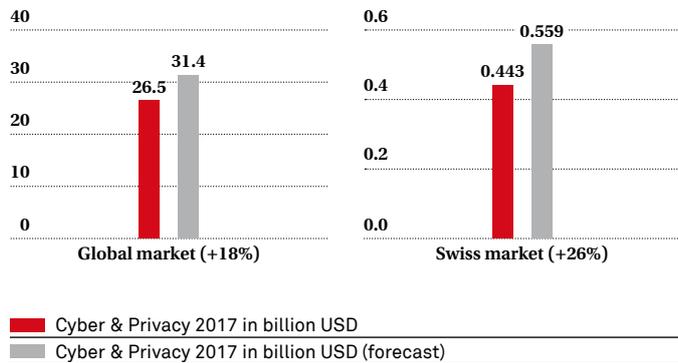
Hardware	Network	Authentication
IBM	IBM	Kudelski
Kudelski	Cisco	Swisscom
Alphabet	Kudelski	Alphabet
Nokia	Swisscom	Schindler Holding
UBS	Nokia	SICPA
Intellectual Ventures	Qualcomm	IBM
Siemens	ABB	Dormakaba
Western Digital	Adobe	Glory Ltd.
Oracle	Alphabet	Amadeus IT Group
Intel	ID Quantique	Swatch

Source: BAK Economics, 2018

- Renowned international companies choose Switzerland as a location for their data centers because of the country's security and independence:
 - SWIFT** set up a subterranean European data center in Diesenhofen (TG) in 2013, which handles all European transactions entirely within Europe.
 - At the end of 2018, the Russian cybersecurity group **Kaspersky** opened a data center in Glattbrugg (ZH) as part of its global transparency initiative.
 - One of the largest crypto exchanges, **Bitfinex**, opened its new computer center in the Crypto Valley (ZG) in early 2019. Previously, Bitfinex used Amazon's cloud services.

- The **Swiss Fort Know I+II** is an underground data center concept with several locations in the Swiss Alps. The concept represents a huge investment volume and is considered the **safest data center in Europe**.
- Geneva** is already a recognized center of excellence in the field of internet governance, with key organizations such as the Internet Society, the ITU and the Secretariat of the Internet Governance Forum. The city is **home to more than 50% of global internet activity**.

Cybersecurity Market in the World and in Switzerland



Source: PwC Digital Services; Gartner, 2018

- ETHZ has one of the world's top five cybersecurity teams at its disposal. The cross-sectoral Zurich Information Security & Privacy Center (ZISC) was founded back in 2003 at ETHZ; it provides clear technical focus to develop solutions to the growing challenges of information security together with industry and politics. The scientists at **ETH-ZISC** work on next-generation networks, cyber-physical systems and cryptography.
- The researcher Adrian Perrig is developing the new **SCION** internet architecture at ETH Zurich's Institute of Information Security. Among other things, this security architecture prevents unwanted redirects (via centralized control codes) and provides advanced protection against cyberattacks. The Swiss National Bank (SNB) is already using the high-security technology to communicate with its branch in Singapore.
- The **Idiap research institute in Martigny (VS)** has made a name for itself internationally with its Swiss Research and Evaluation Center for Biometric Security. Idiap was chosen as the only European partner in Google's exclusive Abacus research project. IARPA, the US intelligence department, has also partnered with Idiap for spoofing attacks.

- Switzerland is responding to increased demand for experts with new chairs and programs. The Lucerne University of Applied Sciences and Arts has been offering a bachelor's degree in information and cybersecurity since autumn 2018, and the professional association ICT-Berufsbildung Schweiz is planning a Federal Certificate in IT Security together with business and the army.

Secure internet servers in Europe

Number of secure internet servers per million inhabitants, 2018

Country	Number
 Denmark	123,074
 Netherlands	100,585
 Ireland	69,792
 Switzerland	68,137
 Germany	56,392
 Estonia	48,934
 Finland	33,984
 United Kingdom	27,250
 France	20,415
 Italy	12,256

Source: The World Bank, 2019

COSTS AND FINANCING

- In 2017, the first Swiss-based accelerator focusing exclusively on cybersecurity was launched in Geneva. The **Rising Star Accelerator** offers potential startups from across Europe a 13-week training and networking program to prepare them for market entry.
- In the Swiss ICT security market, expenditure in the business sector in the current year 2019 will reach a volume of around 2.35 billion Swiss francs. This corresponds to around one in eight francs of the total ICT budget.

FRAMEWORK CONDITIONS AND MARKET ENTRY

- The Swiss government also recognizes the growing importance of cybersecurity. In April 2018, the Federal Council adopted the newly developed “**National strategy for the protection of Switzerland against cyber risks (NCS)**” for the years 2018-2022. The main components of the strategy are the development of skills and knowledge, the promotion of international cooperation and the strengthening of incident and crisis management and cooperation in cyber prosecution, as well as cyber defense measures by the army and the Federal Intelligence Service. The increased awareness drives demand for cybersecurity solutions and leads to an increased need for experts.

- Since 2004, the Reporting and Analysis Centre for Information Assurance (MELANI) has been providing information on cyber security threats and policies to individuals, businesses and selected operators of critical national infrastructures.
- Compared to the US, for example, **Switzerland offers significantly greater legal protection for personal data**. Due to the rapid technological developments of recent years, an update of the Swiss Data Protection Act is underway. Swiss laws are also being adjusted to data protection legislation at the European level (EU GDPR) to ensure equivalence of the data protection levels between Switzerland and the EU.
- The future of cybersecurity is strongly linked to developments in the fintech industry and vice versa. As a fintech location, Switzerland already has a strong position on the world market, due to its historically established reputation as a secure and stable financial center. The Swiss authorities are working proactively to make regulatory adjustments that will facilitate market access for new business models.
- The nationwide initiative **digitalswitzerland** has set itself the goal of making Switzerland a leading digital business location for the cybersecurity industry, among others. Various measures are being implemented, which are supported by the government as well as by large companies from the industry such as Google, UBS or Swisscom.
- In June 2017, Federal Councilor Guy Parmelin, Minister of Defense, signed the Action Plan for Cyber Defense (APCD). This APCD will greatly strengthen Switzerland's defense mechanism in the fight against cyber threats. It will create 150 to 170 jobs by 2020. Cooperation between business, the authorities (military) and Swiss universities is a core content of the APCD.

TESTIMONIAL



“We are a global market leader in cyber protection, combining data protection and cybersecurity in an easy, efficient, and secure way. In 2008, we established our corporate headquarters in Schaffhausen, Switzerland. From our base in Switzerland, we can access the whole of Europe and the rest of the world easily. Other benefits of the location are political and economic neutrality and stability, the support for education and the sciences, and the presence of so many international technology and business centers. Expanding our contribution to Switzerland’s economy, in 2018, we started working on the launch of the Schaffhausen Institute of Technology (SIT), a new hub for technology and innovation in Schaffhausen.”

SERGUEI BELOUSSOV
Founder and CEO of Acronis
www.acronis.com

CURRENT DEVELOPMENTS

- Due to its political neutrality and its top position as a high-tech location, Switzerland is in an ideal starting location to create new “digital trust”. For this reason, the EPFL announced the establishment of the **Center for Digital Trust (C4DT)** at the end of 2017. Together with partners from politics and business, the center intends to become a platform of excellence in matters of cybersecurity, data protection and privacy. In this framework, two new chairs were also founded at EPFL by 2018.
- To counteract the global threat of cyberattacks, the World Economic Forum (WEF) announced in early 2018 that it would open a **global center for cybersecurity in Geneva**. Headquartered in Switzerland, the new center is an independent institution led by the WEF; it aims to help establish a secure global cyberspace and enhance collaboration between individuals and governments worldwide. In addition, an association was created to help fintech companies and data aggregators to improve their cybersecurity.
- In September 2019, Microsoft, Hewlett Foundation, and MasterCard announced the launch of the **CyberPeace Institute, based in Geneva**, to advance global discussions on acceptable behavior in cyberspace and to support victims of cyberattacks.

CONTACTS AND FURTHER INFORMATION

Authorities and regulators

Federal IT Steering Unit (FITSU)
www.isb.admin.ch

MELANI, Reporting and Analysis
Centre for Information Assurance
www.melani.admin.ch

FDFA, Federal Department of
Foreign Affairs, Division for Security
Policy (DSP)
www.eda.admin.ch

DDPS, The Federal Department of
Defense, Civil Protection and Sport
www.vbs.admin.ch

FINMA, Swiss Federal Financial
Market Supervisory Authority
www.finma.ch

Associations and networks

www.asisonline.ch
www.c4dt.org
www.digitalswitzerland.com
www.diplomacy.edu
www.gcsp.ch
www.giplatform.org
www.ict4peace.org
www.internetsociety.org
www.intgovforum.org
www.iss.ch
www.itu.int
www.sig-switzerland.ch
www.swiss-cyber-experts.ch
www.swisssecurity.org
www.weforum.org/centre-for-cybersecurity
www.zisc.ethz.ch

Innovation and startup support

www.ifj.ch
www.innosuisse.ch
www.kickstart-accelerator.com
www.risingstaraccelerator.ch
www.startupticker.ch

Publications

Swiss Venture Capital Report 2019
www.startupticker.ch

S-GE Resources

Handbook for Investors
www.s-ge.com/handbookforinvestors

More fact sheets on
Switzerland as a business location
www.s-ge.com/factsheets

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