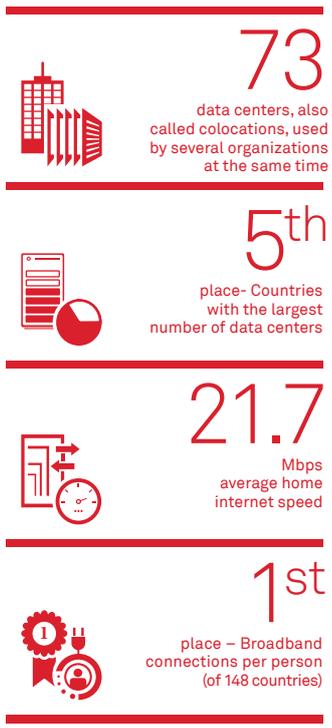




KEY FIGURES



Sources: BFS; datacentermap, 2018

DATA CENTERS IN SWITZERLAND

AT A GLANCE

Companies nowadays are confronted with ever-increasing volumes of data, which they must store securely in up-to-date facilities. Switzerland recognized this change at an early stage and turned itself into a center for the storage of sensitive data. The high standards in data protection, as well as Switzerland’s political and economic stability, offer the ideal framework conditions. Switzerland also offers a large number of data centers with excellent server infrastructure, rapid internet connections, a stable and cost-effective power supply and well-trained ICT technicians.

Data Centers in Western Europe

Ranked by number

Country	Number	Country	Number
United Kingdom	249	Italy	69
Germany	190	Spain	58
France	147	Sweden	51
Netherlands	95	Belgium	32
Switzerland	73	Denmark	29

Source: datacentermap, 2018

A selection of colocation data center operators in Switzerland

BrainServe	EveryWare
CKW LuZ	Green DC
Colt	Interxion
Datahub	IWB
Equinix	Swisscom
e-shelter	SafeHost

Source: asut, 2018

RESEARCH AND DEVELOPMENT (R+D)

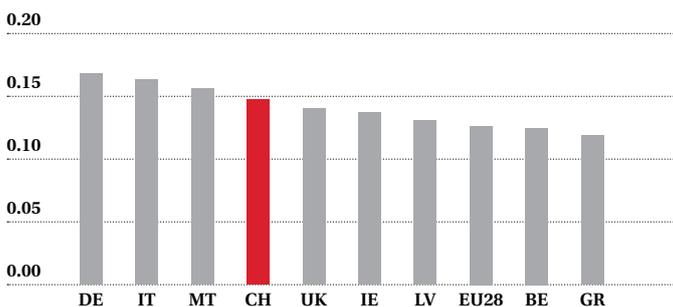
- Switzerland is **highly innovative** in comparison to other countries. Considering the number of European patent applications in relation to the number of inhabitants, Switzerland was again ranked first in 2017 with 884 applications per million inhabitants.
- Switzerland has a wealth of know-how in the field of cryptography. Swiss companies such as Crypto, Omnisec, Qnective and Adeya are among the leading international players in the information security sector.
- Switzerland benefits from highly qualified personnel with an affinity for new technologies and the internet. Hence it regularly ranks among the top countries in international comparisons for the relevant fields, be it in the Networked Readiness Index (WEF), the Digital Competitiveness Index (IMD) or the Global Innovation Index (INSEAD).
- ETH Zurich trains specialists in the fields of Information Security, System Security and Network Security at the Institute for Information Security. The Zurich Information Security and Privacy Center (ZISC) is also part of the institute. The university works closely with companies like armasuisse, Credit Suisse and Kaba to conduct the latest research and offer modern teaching solutions within the field of information security.

COSTS AND FINANCING

- Switzerland has moderate and stable electricity prices. Switzerland also enjoys a high level of self-sufficiency in terms of energy supply, so it is less dependent on imported electricity than other countries.

European Industrial Electricity Prices in 2017

in CHF/kWh, medium voltage



Source: Swissmem «Panorama 2018», BFS, Eurostat

- The average costs for building a new data center amount to between CHF 10,000 and 20,000 per square meter. Around CHF 200-400 million is invested in the construction of data centers in Switzerland each year.
- Switzerland's location development policy offers various funding programs at federal and cantonal level. For example, startups or newly established foreign companies are eligible for partial or in some cases complete exemption from corporate and capital taxes at cantonal level for a period of up to ten years.

FRAMEWORK CONDITIONS AND MARKET ENTRY

- Increasing virtualization, ever greater use of cloud services, and the rise in outsourcing/colocation are leading to further growth in data center space. The total floor area of data centers operated by commercial providers ("third-party providers") in Switzerland is around 200,000 square meters – equivalent to over 27 soccer fields. Within Europe, Switzerland ranks in the top ten in terms of the number of third-party data centers.
- In Europe, Switzerland ranks fifth for the number of secure internet servers per million inhabitants.

Secure Internet Servers in Europe

Number of secure Internet servers per million inhabitants, 2017

Country	Number
Liechtenstein	11,018
Isle of Man	4,825
Monaco	4,234
Iceland	3,162
Switzerland	3,063
Netherlands	2,906
Luxembourg	2,634
Norway	2,077
Malta	1,906
Finland	1,791

Source: World Bank, 2017

- The area used for data centers in Switzerland has consistently increased by around 10-15% over the last few years. According to forecasts, the amount of data worldwide will increase tenfold by 2020. Along with improvements in efficiency through virtualization, Switzerland fosters favorable conditions for positioning itself internationally as a secure and high-quality data storage location.
- Switzerland enjoys an excellent data hosting infrastructure. There is a rapidly growing market for providers of data centers with state-of-the-art infrastructure which is extremely well protected against physical risks, as well as threats arising from cyber attacks. As of 2018, about 73 data centers – so-called colocations – are operating in Switzerland, used by several companies and distributed throughout the country.
- Switzerland occupies first place in a worldwide comparison when it comes to the quality of its power supply. Good security of supply is extremely important for data centers, because even though they have emergency power supplies, they can only manage without power for a limited time.

Quality of the Power Supply

Energy Architecture Performance Index, 2018

Country	Rank
Switzerland	1
Norway	2
Sweden	3
Denmark	4
France	5
Austria	6
Spain	7
Colombia	8
New Zealand	9
Uruguay	10

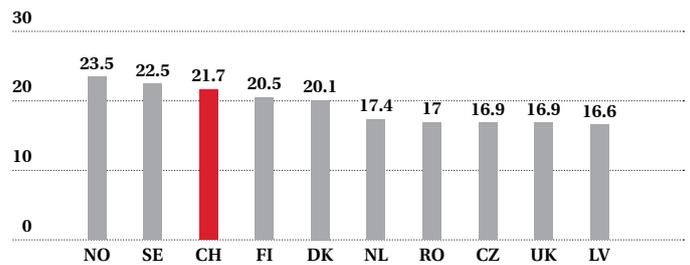
Source: WEF, 2017

- Data protection and privacy are traditionally very important in Switzerland. For example, there are significant hurdles to be overcome if the state wants to access the data of private individuals. Unlike in states such as Sweden or the USA, it takes a judicial decision in Switzerland for government authorities to be allowed to access data.
- According to the Data Protection Act, Switzerland has a Data Protection and Information Commissioner, who is responsible among other things for supervising federal bodies and private individuals.

- Switzerland has the most broadband connections per head of population of any country in the world: There are 52 broadband connections for every 100 residents. The internet speed is also among the best in the world: It has the third-quickest internet connections in Europe.

Internet Connection Speeds

Average speed for households in Europe in Mbps, 2017



Source: akamai, 2017

- In the asut Data Center Infrastructure Panel, Switzerland has a national center of excellence which deals with issues such as location development, energy efficiency, power supply, data center facility management and operations, thus providing benefits for the entire industry.
- The Data Center Risk Index assesses countries according to how well-suited they are as a location for data centers. In 2016, Switzerland was ranked third among the 37 countries surveyed in this index. Switzerland ranks best for ease-of-doing-business criteria. The index shows that long-term and secure storage of data is provided in Switzerland.

Attractiveness of Data Center Locations Worldwide

Data Center Risk Index 2016

Country	Rank
Iceland	1
Norway	2
Switzerland	3
Finland	4
Sweden	5
Canada	6
Singapore	7
South Korea	8
United Kingdom	9
USA	10

Source: Cushman & Wakefield, Data Centre Risk Report 2016

TESTIMONIAL



“The datacenter industry continues to boom. Both today and tomorrow, it will form the physical basis of all the major digital transformation projects: big data, cloud computing, Industry 4.0 and virtual reality. For these challenges, there is no way to avoid the need for scalable, powerful, reliable and secure data centers. In this regard, Switzerland is playing in the top league and will continue to offer an excellent framework for the future. The increasing sensitivity to energy use in the Swiss economy also speaks in favor of professionally operated data centers, which make an important contribution to energy efficiency.”

FRANK BOLLER
CEO green.ch AG
www.greendatacenter.ch

CURRENT DEVELOPMENTS

- On April 18, 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 through the strengthening of incident and crisis management, and cooperation in cyber prosecution extending even to measures for cyber defense by the army.
- Due to the rapid technological developments of recent years, an update of the **Swiss Data Protection Act** is underway. An adjustment of Swiss laws to the data protection legislation at the European level (**GDPR**) is also being pursued in order to ensure equality of data protection between Switzerland and the EU.

CONTACTS AND OTHER INFORMATION

Authorities and regulators

Federal Office of Communications
www.bakom.admin.ch

Federal Office of Communications
and Information Technology
www.bit.admin.ch

Federal Data Protection and
Information Officer
www.edoeb.admin.ch

Publications and Further Information

IWSB: Datentresor Schweiz
www.asut.ch

Campaign – Less Electricity and
More Efficiency in Server Farms and
Data Centers
<https://www.energieschweiz.ch>

Data Center Map
www.datacentermap.com

Associations and networks

www.asut.ch
www.biometrics-center.ch
<http://greenit.s-i.ch>
www.ictswitzerland.ch
www.idiap.ch
www.sik.ch
www.swissict.ch
www.theark.ch

Innovation and startup support

www.digitalswitzerland.com
www.fongit.ch
www.investiere.ch
www.masschallenge.org

S-GE resources

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

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