↔ SWITZERLAND GLOBAL ENTERPRISE



KEY FIGURES



Sources: Federal Statistical Office 2021; IMD 2021

SWITZERLAND: ICT BUSINESS LOCATION

AT A GLANCE

Information and Communication Technology (ICT) is a key technology for the Swiss economy. ICT applications permeate the economic and social fabric of the country and are an important driver for improving productivity in many other industries. Switzerland is extremely well-placed in this respect thanks to the adaptability of its companies in relation to new ICT solutions and the extensive ICT skills of their employees. Top-class specialists undergo training in the talent pipeline of the Computer Science departments at the Swiss Federal Institute of Technology Zurich (ETH Zurich) and the EPF Lausanne (EPFL), the result of which contributes to a thriving startup and spin-off scene.

Focus of activities

ICT employees by subsector, 2019



Sources: Digitalswitzerland; BFS SAKE, 2020

ICT companies

Selection of ICT companies active in Switzerland

AdNovum	Logitech	
Adobe	Magnolia	
Avaloq	Microsoft	
Cisco	Netcetera	
ELCA	Noser Group	
Genedata	SAP	
Google	Swisscom	
HP	Temenos	
IBM	Disney Research	

OFFICIAL PROGRAM



RESEARCH AND DEVELOPMENT (R&D)

- Thanks to the **Computer Science Departments** of ETH Zurich and EPFL, which are **among the world's best**, Switzerland has a considerable pool of talent (ETH Zurich ranked no. 6, EPFL ranked no. 14, according to the QS World University Rankings in 2021). A master's program in data science is now being offered at ETH Zurich. In a new interdisciplinary initiative, ETH researchers from the fields of mathematics, computer science and information technology are also increasingly dedicating themselves to the foundations of data science.
- Expanding the contribution to Switzerland's economy, in 2019, the **Schaffhausen Institute of Technology (SIT)** started operations in cooperation with renowned universities in the USA and Singapore. Nobel laureate in physics Konstantin Novoselov lends his weight to the private university as chairman of the advisory board. The SIT, a new hub for education, technology and innovation in Schaffhausen focuses on research in the areas of artificial intelligence, crypto architectures, new materials, quantum technology, software engineering and digital health.



Source: BFS, 2020

- Out of over 230 apprenticeship options, the **ICT apprenticeship** is one of the most popular in Switzerland. Apprenticeships are the pillar of the skilled worker system; more than 90% of ICT degrees are based on apprecnticeships and vocational training.
- The Swiss Federal Institute of Technology Zurich maintains intensive research collaborations with global players in the IT sector, with key research themes directly influencing its teaching program.
- Private research centers, such as the multiple Nobel Prize-winning **IBM** Research Laboratory, **Google**'s European Research Center (its largest research location outside the USA), **Meta**'s Reality Lab and the **Disney** Research lab, are all located in Switzerland where they find a vast and diverse talent pool. **Google**, for example, employs 4,300 employees in Zurich, its largest R&D office outside the United States.

- The Lucerne School of Computer Science and Information Technology is part of one of seven federal universities in the top echelon of Switzerland. The research and service projects are focused on topics such as artificial intelligence, augmented and virtual reality, data privacy, data science, big data, and blockchain, among others.
- Private sector and state ICT investments in Switzerland increased from 10,338 to 33,313 million Swiss francs between 1996 and 2019. This corresponds to an average annual growth of 5.2%. In 2019, more than three-quarters of investments went into software and databases, approximately one eight into communications technology and the remaining investments into information technologies. The largest increase in investments since 1996 can be observed in software and data banks.

Share of ICT specialists in international comparison in % of employees, 2017

Country	%
+ Finland	6.5
Sweden	5.9
💦 United Kingdom	4.9
Luxembourg	4.9
+ Switzerland	4.6
The Netherlands	4.5
Belgium	4.5
Denmark	4.4
Ireland	4.3
USA	4.2
Austria	4.0
Hereit Norway	3.9
OECD	3.7
Germany	3.6
France	3.2
Spain	3.1
Italy	2.8

Sources: BFS, OECD 2020

Rankings have shown Swiss companies to be more technology-friendly than those from other countries, as they introduce new technologies relatively quickly. Switzerland currently occupies sixth place in the World Digital Competitiveness Ranking (IMD). The country performs particularly well in the 'knowledge' category, which defines a country's capacity to understand and learn new technologies and utilize them for digital transformation. Switzerland also attracts talented professionals from around the world and invests heavily in R&D.

ICT investment in Switzerland, development in CHF millions

COSTS AND FINANCING

- ICT is among the **top Swiss venture capital sectors**. Backers of Swiss ICT companies include some of the world's most famous VCs, such as Index Ventures and GV, the venture capital arm of Google's parent alphabet.
- The ICT landscape in Switzerland is characterized by ownerled, cash-flow financed, and highly specialized SMEs such as Abacus, Opacc, Elca, and Netcetera.
- The Swiss Innovation Agency **Innosuisse** specifically promotes the transfer of knowledge and technology between companies and universities. It brings partners from these two areas together in applied research and development projects and provides assistance to startup coaching. Innosuisse funds half of the project if an innovator works with a Swiss institute.
- Startups and 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.

Subscribers to Broadband Internet Access per 100 inhabitants



Quelle: BFS, 2021

• The increasing popularity of broadband technologies is crucial to the development of e-commerce, e-government and other applications. Switzerland is currently one of the leading countries in the OECD comparison. End of 2020, in terms of fixed broadband connections, the country came first in the OECD member states ahead of France. In 2021, 96% of 15- to 88-year-olds used the internet.

FRAMEWORK CONDITIONS AND MARKET ENTRY

- Companies have ready access to skilled workers based outside of Europe. If no suitable candidates can be found within Switzerland, the EU or the EFTA countries, a certain quota of computer scientists can be recruited from outside the EU (e.g. Asia or America).
- Switzerland has complete broadband and cellphone coverage. A stable power supply also ensures the secure operation of ICT infrastructure.
- The free trade agreements in place with the EU/EFTA and more than 40 other countries, including China and Japan, provide access to the world's most important export markets.
- Switzerland is considered a **magnet for international IT companies**, such as **Google**, **IBM**, **Meta** (former Facebook) or **HPE**. The high quality of life is another competitive factor contributing to Switzerland's global appeal as a business location for highly-qualified skilled workers.
- With the introduction of the General Data Protection Regulation (GDPR) in the European Union, the importance of data storage locations will become increasingly important in the future. The Basel-based firm swiss made software has developed a "swiss hosting" label, guaranteeing that data stored at Swiss companies will not be transferred outside of Switzerland but remains in Swiss hands and is processed according to Swiss law. The label represents an assurance of both Swissness and quality and the aim is for the new label to become a seal of quality.

TESTIMONIAL



"It is critical that we, as a technology company, have access to both the domestic and foreign talent markets. The federal institutes of technology in Lausanne and Zurich contribute greatly to helping us achieve this, thanks to their world-renowned study programs. The free movement of people is of additional importance as it allows us to employ

skilled workers from other EU countries. We also benefit from the presence of other major international companies in Switzerland, who also play their part in ensuring that the high quality of the local workforce is maintained."

MARIANNE JANIK Former Country Manager of Microsoft Schweiz www.microsoft.ch

CURRENT DEVELOPMENTS

- The Switzerland Future Fund project (www.zukunftsfonds.ch) provides for a fund to be established, by means of which pension funds can make part of their funds available to startup companies in Switzerland as venture capital. The aim is to encourage the creation of new companies and jobs in promising business sectors. The ICT industry would also benefit hugely from this.
- In October 2020, **digitalswitzerland** and **ICTswitzerland** agreed to merge and operate under the name digitalswitzerland. This **new umbrella organization combines the strengths of 220 members** from business, the public sector, non-government organisations and associations, as well as research and academia to further strengthen Switzerland as a **leading digital research and innovation location.**
- The Federal Council wants Switzerland to exploit the opportunities of digitalization to the full. Therefore, in September 2020, it adopted a **"Digital Switzerland" strategy** for the next two years. In the futue, the aspects of data and the environment are to be given greater emphasis in the digital policy of the Confederation.
- In 2016, Facebook bought the ETH Zurich startup Zurich Eye, which lay the foundation for today's **Meta Zurich office**. Most of the currently 200 employees work at the **Reality Lab** with focus on technologies like Augmented Reality and Virtual Reality. In 2021, Meta announced plans to increase the number of staff to 350 in the course of 2022.

CONTACTS AND FURTHER INFORMATION

Authorities and regulators Federal Office of Communications bakom.admin.ch

Federal Office of Information Technology, Systems and Telecommunication bit.admin.ch

Federal IT Steering Unit isb.admin.ch

<u>State Secretariat for Education,</u> <u>Research and Innovation</u> <u>sbfi.admin.ch</u>

Innosuisse - Swiss Inovation Agency innosuisse.ch

Swiss Computer Science Conference sik.ch

Associations and networks alpict.com asut.ch ated.ch biometrics-center.ch digitalimpact.ch digitalswitzerland.com ech.ch epfl-innovationpark.ch idiap.ch sgda.ch sit.org swico.ch swissict.ch swissmadesoftware.org Innovation and startup promotion baselarea.swiss investiere.ch kickstart-innovation.com masschallenge.org/programs-switzerland swissparks.ch swissstartupfactory.com technopark-luzern theark.ch ventures.swisscom.com zurich.impacthub.ch

Publications

ICT skilled labour situation 2028 digitalswitzerland.com

Swiss Venture Capital Report startupticker.ch

S-GE resources Handbook for Investors s-ge.com/handbookforinvestors

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

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