

# INNOVATION AND TECHNOLOGY

Three of Switzerland's strengths are especially prominent: high degree of innovation, supremely educated workforce and first-class scientific research organizations. Cutting-edge technologies and a business-friendly climate also contribute to our country's productivity.



## Research and Development Hub

Image  
UCB Farchim, Bulle

### WORLD-CLASS UNIVERSITIES AND RESEARCH

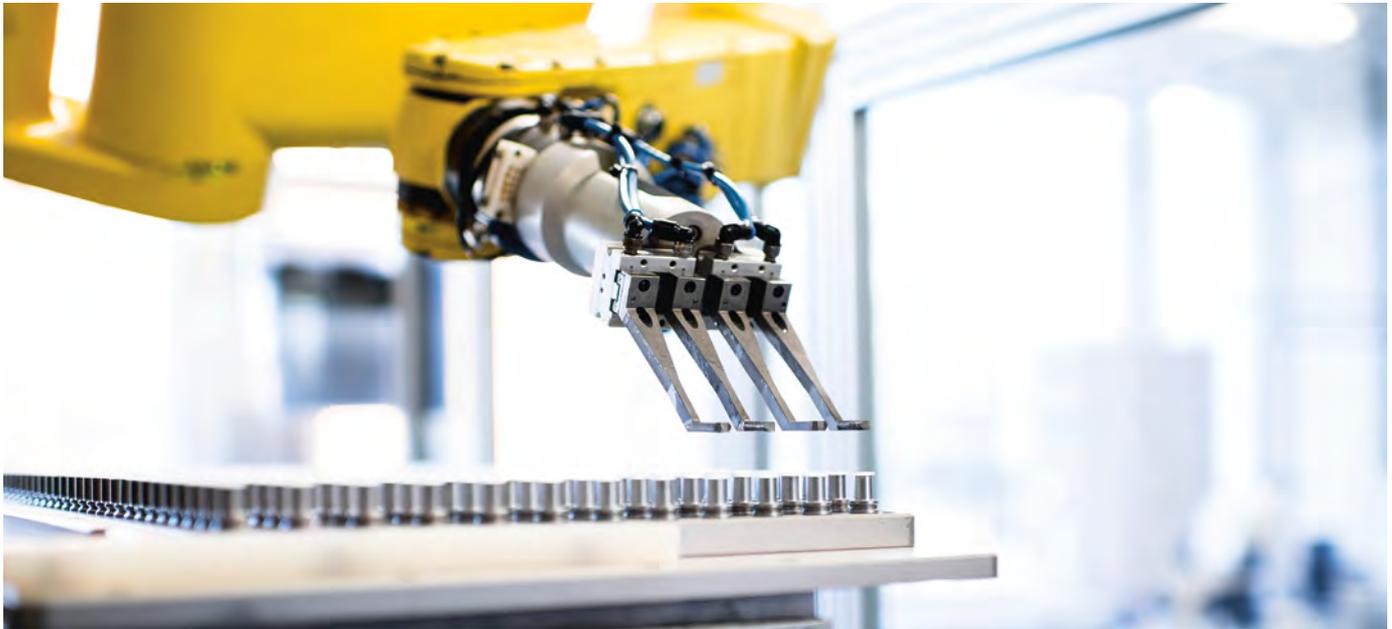
Switzerland invests nearly 3% of its GDP in research and development, one of the highest percentages in the world. More than 60 universities help to ensure the highest level of professional work. They work closely with the international research community and take part in scientific partnerships. They connect with industry through the exchange of knowledge and technology, support innovative start-ups, and establish strong spin-offs. Organizations and companies from Switzerland and abroad value the country's excellent research platform and its role as an international innovation hub. No wonder so many major companies are based here, from pharmaceutical giants Roche and Novartis to the research centers of Disney and Google.

Almost half of Swiss workers are employed in knowledge-intensive industries. High-tech products form an important pillar of the country's economic success and excellent reputation. Around one quarter of all high-tech products are exported. This underlines the innovation potential of the Swiss economy, which holds a leading position in international rankings. Intellectual property is effectively protected through patent, trademark, design, and copyright law. In 2016, more than 7,000 patent applications were filed in Switzerland. This is the fifth highest figure in the world, the third highest in Europe – and it is the highest figure worldwide per capita. Switzerland's international leadership in research is also apparent in the number of Nobel Prize laureates per capita: Switzerland has the highest figure worldwide in this area as well.

### CROSS-BORDER COOPERATION

As an important center of research, Switzerland attracts highly qualified foreign researchers. Several internationally important institutions are based here. For example, the European Organization for Nuclear Research CERN and the Paul Scherrer Institute (PSI). CERN is considered to be one of the most important centers in the world for basic research in physics. It was here, in the late 1980s, that the World Wide Web was developed.

The Swiss research community actively participates in the cross-border exchange of knowledge. It is well integrated in the cooperation networks of major European nations and covers a wide spectrum of research fields. Albert Einstein once studied and taught at the Swiss Federal Institute of Technology in Zurich (ETHZ). And he's far from being the only one: ETHZ has always welcomed foreign researchers and lecturers; indeed half of its professors are non-Swiss.



## Leading Industry Clusters

Image  
Kistler Group, Winterthur

- Life sciences (chemicals, pharma, medtech, biotech)
- ICT (information and communications technology)
- MEM (machinery, electrical engineering, metals industry)

### A STRONG LOCATION FOR STRONG BUSINESSES

Important industry clusters choose to locate their headquarters in Switzerland. Here, they find a solid foundation: an excellent environment for research and development, an efficient registration and certification system, and a highly educated workforce. Three Swiss companies, Roche, Nestle, and Novartis, are among the 40 most valuable companies in the world. Switzerland is also a popular, neutral location for European headquarters: over 1,000 multinational firms have their regional or global headquarters here, including major names such as eBay, Google, and Unilever.

### A UNIQUE COMBINATION OF INDUSTRY CLUSTERS

Northwest Switzerland is home to a unique life sciences cluster. In addition to chemical and pharmaceutical firms like Novartis, Roche, and Syngenta, it encompasses a dense network of medtech, biotech, and nanotech companies.

In the industrial sector, key roles are played by the machinery, electrical engineering, and metals industry. Major international companies such as ABB, Alstom, Bombardier, Saurer, and Schindler all have a presence in Switzerland. In the region between Geneva and Schaffhausen, a “precision cluster” has developed on the basis of the traditional watchmaking industry. Apart from its watches and clocks, Switzerland is also world-renowned for its financial services industry: Zurich and Geneva are among the world’s top 15 financial centers.

Switzerland is also growing in importance as a center of the information and communications industry. International corporations such as IBM, Google, Microsoft, Siemens, Disney, and HP have set up home near Swiss universities and research institutes. The initiative “digitalswitzerland” positions Switzerland as the center for digital innovation in Europe. In the cross-sectoral field of cleantech, Switzerland stands out for its achievements in reducing carbon dioxide emissions and in recycling. The country has few natural resources. However, it has become one of the most important commodities trading platforms in the world. Geneva, Lugano, and Zug are the key trading hubs for grain, crude oil products, and mining products. Switzerland’s three largest companies - Vitol, Glencore, and Cargill - are commodities trading firms.



## Strong Education System

Image  
University of St. Gallen (HSG), St. Gallen

### HIGHLY SKILLED WORKFORCE

Excellent, practice-oriented basic education, renowned private and boarding schools, and world-class universities and technical colleges – these are the ingredients for the success of Switzerland’s top-level educational landscape. These factors provide businesses in Switzerland with substantial, lasting benefits. In Switzerland, investors have no difficulty in finding well-educated, multilingual, motivated, and loyal employees. It is hardly surprising that Google and Novartis, two of the world’s most attractive employers, have chosen to be located in Switzerland. Major international companies work in close partnership with regional universities and recruit large numbers of highly educated employees from this high-quality pool.

The Swiss education system combines practice-oriented vocational training with outstanding university education. This dual system fuels the economy’s capacity for innovation and creativity. Low unemployment rates, even among young people, testify to the strength of the Swiss education system.

### WORLD-CLASS STATE AND PRIVATE SCHOOLS

Public schools in Switzerland enjoy an excellent reputation – and with good reason. Students regularly achieve very good results in international PISA assessments. In mathematics, they outperform their peers in all EU countries. Swiss universities regularly occupy top places in international university rankings. Four Swiss universities rank among the world’s top 100: the Zurich and Lausanne Federal Institutes of Technology and the Universities of Geneva and Zurich. In fact, the first two are classed among the 20 best universities in the world.

The state school system is complemented by around 260 private and boarding schools. Internationally oriented families will find a tailor-made education system for them. Some staff members of foreign companies often stay in Switzerland only temporarily. Their children receive education in their native language or take part in international education at numerous international schools. They are well prepared for school-leaving exams in their home country, be it the Abitur, the Baccalaureate, or the admission requirements for a U.S.-American university.