

Switzerland: Innovating out of adversity

The Alpine nation demonstrated its innovativeness during the COVID crisis



The historic city center of Zurich with its famous Fraumunster and Grossmunster churches

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Consistently topping the global innovation charts, Switzerland has been hailed as the World Intellectual Property Organization's champion innovator for 10 years running based on criteria like investments, patents and high-tech exports. But has its boundary-pushing spirit fallen victim to COVID-19?

"Quite the opposite," says Swiss innovation agency Innosuisse. It claims the pandemic has given an extra boost to researchers, startups and established companies to push forward with new ideas that are countering the crisis and driving economic recovery. Do the facts back this up?

Significant developments with worldwide impact are being made within Switzerland's vast healthcare ecosystem. 10 of them make up Basel-based Roche's growing portfolio of molecular, serology and digital solutions for diagnosing and managing COVID-19. "Switzerland is well known for its large pharma giants. Less known about is the contribution of its first-in-class innovators in areas like biotech. It's one of our clusters that has reached a critical size with a strong academic network," notes Dominik Escher, president of the Swiss Biotech Association. He highlights some novel approaches to the virus from companies in his sector: "Humabs is working on neutralizing antibodies, Neurimmune's platform identifies antibodies of COVID survivors and Molecular Partners' new class of therapeutics is targeting three sites on the viral protein with one drug."

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Dominik Escher, President, Swiss Biotech Association

Switzerland's academic researchers are proving their reputations for first-rate innovation and collaboration during the crisis as well. A prime example is Idiap Research Institute's partnership with startup Global ID on a contactless scanner that recognizes people's finger veins. With huge safety benefits in settings such as hospitals and restaurants, this project was supported by Innosuisse to the tune of around \$1 million. Switzerland's public funder for academic research, the Swiss National Science Foundation (SNSF), has also catalyzed solutions to coronavirus. It launched its first call for innovative projects in March, with \$5.2 million earmarked for emergency funding. The winners covered a gamut of topics including vaccines, the economic and social impacts of COVID-19, and

tracking its spread in real time. The SNSF received so many unique proposals that it could only fund 13 percent, states Matthias Egger, president of its National Research Council. He explains why suggestions were so numerous and varied: "What is perhaps unique about Switzerland is that we have excellence in different disciplines at each of our universities and research institutes."

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Matthias Egger, President, National Research Council
Swiss National Science Foundation

On the real economy front, probably the most important breakthroughs have come from the financial sector. Early in the pandemic, Switzerland's government and banks worked together to devise a \$44-billion loan scheme to protect small- and medium-sized enterprises. It took banks like Credit Suisse just five days to introduce straightforward, automated and effective digital workflows that enabled clients to access those loans quickly. Swiss banks have invested heavily in technology overall this year, as they and many other businesses rushed to innovate new channels for services and products. Digital payment services provider Twint has reported over 11,000 new merchant sign-ups since January, for instance. With the government kicking off a new e-government strategy in 2020, the public sector has also embraced digitalization, especially the health service. "We will now have better and interoperable data, including electronic health records, and better surveillance of infectious diseases," notes Egger. Large tech firms have seen sales of their established products soar in a locked-down world. Other Swiss companies have diversified into new areas to turn the crisis into an opportunity. One manufacturer, Novamem, has adapted the plastic membranes used in its water filters to make light, washable facemasks that are in high demand. Internet-of-Things software developer Akenza, on the other hand, is now supplying automated people-counting systems to retailers and hospitality outlets.

So the answer is, yes: in its response to the pandemic, Switzerland has demonstrated that it fully deserves to be called 2020's most innovative economy. Throughout the unfolding analysis, you will find many more examples of Swiss ingenuity that could prove crucial to leading the world out of today's crisis.

A world-class global pharma hub

Switzerland's culture of openness has made it a heavyweight in the sector

Accounting for around 9 percent of the global market, Switzerland's pharmaceutical sector is the world's second-most competitive according to a 2020 study from independent research institute BAK Economics.

As one of the most important industries, the sector contributes nearly \$100 billion a year in export sales—over half of Switzerland's total cross-border income—and employs about 47,000 people, with the majority working in the country's two dynamic clusters, Basel and Geneva. Switzerland's extensive pharmaceutical ecosystem includes global giants like Roche and Novartis; multinational players that have established strong Swiss bases, such as Johnson & Johnson and Merck; plus a vast range of other businesses of all sizes that are focused on low-volume speciality drugs, biotechnology, medtech and nanotech, among other things. The country is also home to some of the world's leading scientific research universities, especially ETH in Zurich, EPFL in Lausanne, and the Universities of Basel and Zurich. It hosts prominent specialist research institutions, an acceleration program specifically for healthcare startups and well-funded agencies like Swiss Innovation Agency that promotes cooperation between the country's highly qualified scientists and the private sector. Together, this collaborative network has helped create the ideal climate for intensive, innovative research and the commercialization of discoveries, with the sophisticated Swiss healthcare system providing an excellent test and early sales market. As a result, Switzerland has led the worldwide pharmaceutical sector in terms of innovation, value creation and productivity for years.

An efficient framework that serves as catalyst

Switzerland first became a significant hub for pharmaceuticals in the late 19th century, when chemical companies started profiting from the country's lax patent laws by freely copying the inventions of others. Those days are long gone: today, straightforward, quick and reliable procedures are in place to guarantee intellectual property as part of a regulatory and business framework that encourages the sector. For example, medicines agency Swissmedic offers one of the fastest approval processes in the world, taking about 11 months to issue licenses for a new drug or under 5 months if it is fast tracked. Other incentives include exemptions from cantonal-level corporate and capital taxes for startups and newly established foreign firms in the sector, and a value added tax rate of just 2.5 percent on pharmaceutical products.

The Swiss stock exchange represents roughly 40 percent of Europe's life sciences market capitalization and the country's knowledgeable domestic investor base supports those looking to raise capital. International investors have also proved very willing to consider financing or collaborating with innovators simply because they are located in Switzerland, according to Dominik Escher, president of the Swiss Biotech Association. "Because we are regarded as a country of innovation, we attract the attention of venture funds and global companies—many Swiss biotech firms have successfully gained significant amounts of venture capital from Europe, the U.S. and Asia, for instance," he says.

One of the major reasons that Swiss pharmaceutical companies have been

able to take leading global positions is the country's openness. It has mutual recognition of standards and free trade agreements with the European Union (EU) and many other countries, as well as privileged access to international talent and EU research funding programs. "Switzerland is a platform for pharmaceuticals, where you can plug in a lot of innovations from different people to create big opportunities," asserts Thierry Mauvernay, president of Debiopharm, recognized as the Swiss Biotech Success Story 2020. "The country's openness is a huge advantage, it's easy to welcome foreigners and let them integrate, and we need to keep it that way."

With over 40 different nationalities working in its headquarters in Lausanne, Debiopharm, a privately owned biopharmaceutical company, is an excellent example of how Swiss businesses benefit from this openness to become successful worldwide actors. The company, started by Mauvernay's father with two people in a garage 41 years ago, has today become a large, diversified enterprise centered on researching, developing and manufacturing groundbreaking drugs. "They developed drugs from peptide molecules and Triptorelin—our first product that is used to treat prostate cancer—is still a bestseller for Debiopharm, with about 8-10 percent sales growth every year and 25 percent of worldwide market share. Currently, our products that focus on oncology, bacterial and other infectious diseases treat more than one million patients each year," comments Mauvernay.

"Switzerland is a platform for pharmaceuticals, where you can plug in a lot of innovations from different people to create big opportunities."

Thierry Mauvernay, President, Debiopharm

Debiopharm's additional successes in the global market include Oxaliplatin, a standard-of-care platinum-based chemotherapy treatment for colorectal cancer that is sold in more than 120 countries, while a new molecule, xevinapant (Debio 1143), could be its next blockbuster as it recently showed impressive improvements in survival of head and neck cancer patients. "It works in synergy with radiotherapy to impact many types of cancer cells. It received a breakthrough therapy designation from the U.S. Food and Drug Administration earlier this year because it showed a real difference in outcomes for patients and we have now launched our phase 3 clinical trial in over 30 countries," Mauvernay explains. Rather than carrying out basic research, Debiopharm's business model involves identifying high-potential molecules for in-licensing. It clinically develops these before commercializing end products through large pharmaceutical partners in order to maximize global patient access.

"We like to say that the world is our laboratory. For a company like us, being open-minded is crucial—innovation is everywhere and we need to review all of it. By teaming up with academia, universities, startups and established companies, we look at about 600 new molecules every year and will generally sign one in-licensing or acquisition deal. When we think that we cannot add further value to the product, we out-license it to one of our big pharma clients like Sanofi, Pfizer and Takeda Pharmaceutical Company that can," elaborates Mauvernay. Developing new drugs is a risky business, with no guarantee of success. Debiopharm aims to limit the risk using alternative strategies like investment diversification. Additionally, the company invests in disruptive digital health technologies that could transform the way diseases are managed and treated. The Swiss pharmaceutical sector as a whole is also investing heavily to ensure its continuing competitiveness, so that even more patients around the world can benefit from its future innovations.

Preventing a possible bacteria pandemic

Digital tools and antibiotic research could lower the risk of the next crisis

Debiopharm is increasingly investing in digital health, smart data and other innovative startups around the world, providing them with a typical initial investment of up to \$5 million. Is digital technology the future of healthcare?

It is critical that the pharmaceutical industry uses digital tools today. I believe focusing only on medication is outdated, you also have to look at diagnostics, monitoring and support in order to cover the patient's entire journey. 13 years ago, we established Debiopharm Innovation Fund, a strategic fund for investing in startups because, in our view, it's quite easy to find incremental innovation internally but for disruptive innovation, you generally need to look outside of your organization. We evaluate about 250 to 300 new investment opportunities each year. Our approach is not only to provide money but to bring startups our expertise and experience—what we call "smart" money.

Our deal flow is substantial and the quality of applications keeps going up as we see success. For example, we recently invested in the Belgian digital sedation scale-up Oncomfort, as well as Israel's Nucleai that specializes in analyzing biomarkers using artificial intelligence. This can help determine if certain cancer treatments are right for a patient by using data to provide complex insights that a traditional laboratory could not. We also invested in digital symptom-monitoring companies, such as Carevive in the U.S., diagnostics startups like Seattle-based Immunexpress, and French firm Novadiscovery that is working on a digital clinical trial simulation platform. This year, we completed an exit deal for Kaiku Health, a Finnish symptom monitoring startup. Debiopharm commits to staying with companies over the long term but some founders pre-plan their exits and we follow their lead in this.

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Thierry Mauvernay, President, Debiopharm

Many in the Swiss pharmaceutical sector are playing an important global role in the coronavirus crisis. What has been Debiopharm's contribution?

Pharma can mainly fight pandemics in four ways: diagnostics, medication, monitoring and vaccination. Vaccines are not Debiopharm's core business but the others are. One of our investment portfolio companies, BC Platforms, is a Massachusetts Institute of Technology spinoff based in Zurich. Through it, we



are trying to stratify patients at low and high risk of being affected badly by the virus and this tool could be very useful to provide a better idea of who needs to stay at home. Kaiku is also helping to monitor patients in hospital and at home. With regard to treatments, we have one antiviral: Alisporivir. We have worked hard to bring this product to a clinical stage and I think we will receive research authorization for it soon. We don't want to earn any money from our products that could treat COVID-19 so, if this treatment is successful, all revenues will go toward funding research against infectious diseases.

Additionally, two of our investment portfolio companies—Immunexpress and Biocartis—provide the quickest diagnostic tests for septicemia, which is the main cause of death for patients infected with COVID-19. Immunexpress received European Union certification in May and is expecting to receive U.S. Food and Drug Administration approval soon. Overall, I think Debiopharm's team can be proud of its contribution.

"My big wish is that this crisis helps us to plan ahead for the next pandemic, which may very well concern bacteria."

Thierry Mauvernay, President, Debiopharm

How do you think the pandemic will or should change the landscape for your industry?

One of the major changes that I foresee is a new focus on healthcare independence. In Switzerland today, we speak a lot about food independence but from now on, certainly, we will talk a lot more about the masks, drugs and other healthcare products that we need to keep on hand.

My big wish is that this crisis helps us to plan ahead for the next pandemic, which may very well concern bacteria. We need to find new classes of antibiotics as we know that many bacteria are resistant to our current ones. If we don't do something now, I think we will all be guilty of failure. Each year, up to 250,000 die because tuberculosis is resistant to all antibiotics, for instance, and we risk having a problem with more bacteria becoming resistant in the future. According to the World Health Organization (WHO), we could have more than 10 million deaths a year by 2050. We hope to have a vaccine by the end of this year or the beginning of the next for COVID-19 but we normally need 10 years to create new antibiotics. We can probably reduce that to five or six years, however, the world would still have to live with a bacterial pandemic that would be worse than the current crisis for a long time. This is an immediate issue requiring global attention and it's possible if we prepare now. Debiopharm is developing three new antibiotics to treat three of the nine main target-resistant bacteria listed by WHO, but there is only so much that we can do on our own.

Appetite grows for Swiss biotechs

Biotech players, small and large, take great strides to improve patients lives

In 2019, mergers and acquisitions (M&As) involving Swiss companies in the life science and pharmaceutical sectors were valued at around \$65 billion: that's half of the country's total M&A transactions. This trend for healthcare industries to drive M&A activity has been going on for a decade, driven by pharma giants' appetite for strong Helvetic research and development (R&D) capacities.

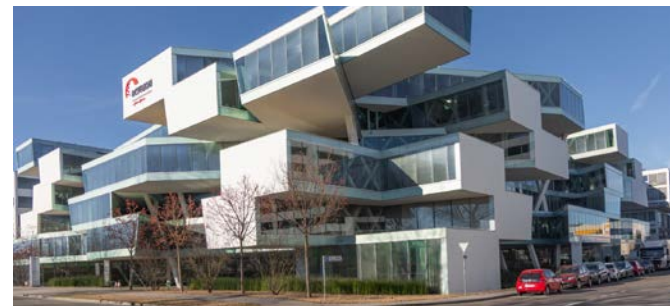
A high-profile example that underlines Swiss biotech's international success is biopharmaceutical firm Actelion, purchased by Johnson & Johnson in 2017 for approximately \$30 billion. Actelion is now part of Janssen, the pharmaceutical sector of Johnson & Johnson. The company had been originally set up in 1997 by a group of four researchers and managers from Roche, and quickly established a reputation thanks to its full spectrum of treatments for pulmonary hypertension (PH) diseases that affect blood pressure—particularly pulmonary arterial hypertension (PAH), a condition where arteries in lungs are narrowed, blocked or destroyed, resulting in a weakening of the heart as it works harder to pump blood. It's a rare disease affecting approximately 30-150 people in every million. Today, Actelion's products treat about 80 percent of those affected by this condition worldwide.

“Our current approved medicines significantly improve outcomes for patients with PAH so it is essential they are used to their full potential.”
Neil Davie, Global Head of R&D for Pulmonary Hypertension Janssen

Before it entered the market, PAH was a relatively uncharted area of R&D and the only available treatments were invasive intravenous drugs. That changed in 2001 when Actelion launched an oral medication. “Through our own drug discovery capabilities, and strong clinical and commercial partnerships, we have gone on to build a portfolio of medicines that fundamentally transformed the way PAH is treated,” says Neil Davie, Janssen's global head of R&D for PH. Having gone public via the Swiss stock exchange in 2000, Actelion's groundbreaking innovations turned it into Europe's largest listed biotech company with more than 2,600 employees in over 30 countries.

By buying Actelion and incorporating it into Janssen, Johnson & Johnson gained specialist clinical research skills, and a proven range of cutting-edge treatments for PH that it believes will increase its long-term revenue growth rate by at least 1 percent. The deal was far from being Johnson & Johnson's first foray into Swiss healthcare: the company is an important economic and R&D influence in the country, having made its first acquisition there in 1959. Other purchases followed, including the buying of Synthes in 2012 that has since been merged into DePuy Synthes to help make Switzerland a global hotspot for medtech.

Overall, Johnson & Johnson employs about 4,300 people with diverse



expertise at various sites across the country, but through Actelion it has established an important base in Allschwil. “It's perfectly located on the edge of Basel, a global life sciences hub with unparalleled access to talent and R&D opportunities,” explains Davie.

Bilingual approach to future developments

Actelion, on the other hand, benefits from being able to leverage the pharma giant's global strengths and resources to accelerate growth and patient access to its therapies. “PAH remains a progressive disease with no cure; one in three dies within five years of diagnosis. Our current approved medicines significantly improve outcomes for patients with PAH so it is essential they are used to their full potential,” Davie stresses.

Actelion also now has the investment it needs to pursue new opportunities, he adds. “We intend to continue to disrupt by developing novel medicines that target new pathways and complement our existing portfolio for adults with PH, by researching and developing treatments for children with this life-threatening condition, and by increasing our footprint in other rare pulmonary diseases.”

Another advantage of being part of a larger company is the ability to collaborate with innovators outside of your own specialties. Currently, patients wait an average of two years to be diagnosed and PH gets worse if left untreated, so one of Actelion's goals is earlier diagnosis. It is working closely with Johnson & Johnson's central data science group and external experts to look at how data, artificial intelligence and advanced analytics can be used in diagnostics as well as clinical discovery and trials. “This bilingual approach to development—blending data scientists' insights and clinical scientists' expertise—is exciting,” he enthuses.

COVID-19 has made the move to a new model for clinical trials urgent—patients with PH are at high-risk of severe illness if they contract it and are, therefore, understandably unwilling to visit hospitals for traditional trials. “Coronavirus isn't going away soon, we must evolve quickly to the next generation of trials and our team in Switzerland is driving this. Johnson & Johnson has really mobilized its global reach around COVID-19 on many levels. It has initiated human clinical studies of a lead vaccine candidate, for example, and we anticipate the first batches of a vaccine could be available for emergency-use authorization in early 2021,” notes Davie.

This illustrates a shared goal of both the large and smaller partner in 2017's acquisition: improving patients' lives, he says. “As part of Johnson & Johnson, Actelion will continue to be absolutely committed to patients and the health-care professionals who care for them.”



Neil Davie
Global Head of R&D for Pulmonary Hypertension Janssen

Switzerland, fertile ground for R&D

The flourishing Swiss research ecosystem continues to grow

When you consider the size of its economy, Switzerland is the world's third-biggest player in research and development (R&D). It spends over \$24 billion—3.3 percent of gross domestic product—on innovative discoveries every year, around two-thirds of which comes from the private sector.

Most Swiss innovators give similar replies when asked why it is such a powerful incubator for R&D in areas including life sciences, medicine, technology, engineering and chemistry. Roger Nitsch is CEO of Neurimmune, a biotech firm that recently concluded Phase 3 clinical trials on what could be the first disease-modifying therapy for Alzheimer's disease. His response is that “Switzerland has a wonderful combination of world-class scientific institutions and universities, deep industry know-how, and strong but liberal governance and oversight. This makes for a perfect humus for new ideas to grow.”

Also important is the proximity in which smaller companies like his coexist and collaborate with multinational firms and academics to translate ideas into products and businesses. Pioneering biopharmaceutical company Molecular Partners, for example, started life as a spin off from the University of Zurich and has grown into a 150-people concern with annual revenues of \$21 million. “Innovation is the Swiss fuel for development. There is a lot of money, investors and people that believe in innovation here,” notes CEO Patrick Amstutz. Those believers include a federal government that has boosted

tax regimes for innovation this year by introducing additional relief measures for R&D costs and for profits attributable to patents. The government is also a major research funder—in 2019 it provided \$2.8 billion, the majority of it going to universities and the Swiss National Science Foundation (SNSF). This body currently supports around 6,000 academic research projects and oversees a growing network of countrywide National Centers of Competence in Research, each of which provides a cluster nucleus for a different area of cutting-edge scientific innovation.

Even in the midst of the COVID-19 pandemic, Switzerland's R&D ecosystem is expanding. Just this month, Chinese pharma giant Hengrui Medicine announced it was setting up a major R&D base in Basel, while Swiss-Swedish engineering multinational ABB said it was investing \$44 million in new R&D

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Patrick Amstutz, CEO, Molecular Partners

facilities for drive technology and industrial automation. Stefan Rösch, EY Switzerland's country managing partner, applauds these moves. “It is essential to stay focused on and keep investing in R&D. Looking back at 2008's financial crisis, the companies that were prepared to invest through it were the companies that benefited for the next 10 years.”



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Universities lead the way in COVID research

Proximity to industry helps to accelerate scientific advances

Basel in northwestern Switzerland is Europe's capital of scientific research with over 700 companies involved in life sciences based in and around the city.

These range from innovative startups to the world's second- and fourth-largest pharmaceutical firms, Roche and Novartis, which both run their global operations from there. The region also hosts around 200 specialist research and academic institutions. "Basel is a small but very international city that contains a lot of culture and a vibrant research ecosystem for the pharmaceutical, biotechnology and medtech industries, among others," summarizes Andrea Schenker-Wicki, president of the University of Basel.

As one of the world's top-100 research universities, the University of Basel is an important cog in this ecosystem. It is Switzerland's oldest university with a history that goes back 560 years and has forged an international reputation as a modern center of excellence for education in a comprehensive range of subjects, science and research. "We are highly focused on life sciences, natural sciences and medicine—that is where our key strengths are but we also have globally renowned professors in fields like law, economics, humanities and theology. It is important to have both—our business is research that has an impact on society and societal issues of today are so complex that you need different perspectives on a problem to deliver sustainable solutions," she explains.

The university attracts around 13,000 students a year, including 2,900 PhD candidates, 50 percent of whom come from over 100 countries outside Switzerland. They benefit from world-class facilities and educators, while being part of Basel's uniquely rich science network allows them to take a leap forward in their studies and research. "The university has numerous partnerships with the companies in our region. These are generated with ease because the important players all know each other and meet regularly. That enables industry to interact very easily with our students and professors," says Schenker-Wicki.

Switzerland's central role in a global network

Basel's location at the crossroads of Switzerland, France and Germany has helped make the city a hub for cross-border research collaborations. The University of Basel itself boasts many partnerships with its counterparts in those countries, giving its students the chance to study and research outside of the region. The university is also very involved in wider international networks—for example, it has a strong focus on Africa through its association with the Swiss Tropical and Public Health Institute.

Since the emergence of COVID-19, research institutions including the University of Basel have been utilizing their networks to advance projects that could lead to a better understanding of the pandemic or to help overcome



Andrea Schenker-Wicki
President
University of Basel

it. According to Schenker-Wicki: "Universities all over the world are doing a wonderful job in terms of research—we are not acting as individual countries but as a large global science community. We are all working together because we know we have to do something for society in this crisis."

The University of Basel is playing an important role in this community and has taken the lead in spearheading many COVID-related projects. Four of these highlight its position as a generator of vital innovative research. In one, bioinformaticians at the Biozentrum—the university's center for molecular life sciences—have developed an online platform that plots small genetic changes in the virus, allowing scientists and policymakers to analyze how coronavirus is spreading around the globe in real time. In conjunction with a computational modeling group from the university's Department of Pharmaceutical Sciences, Biozentrum researchers are also trying to discover new drug treatments by using simulation programs to model interactions between viral target proteins and small molecules.

Some of the university's medical researchers, on the other hand, have been collaborating with the University Hospital Basel to investigate whether transfusing COVID-19 patients with antibody-rich blood plasma from convalescent patients can reduce the severity and duration of the disease. In a final example, the university's Department of Psychology is studying the effect of coronavirus on behavior and wellbeing, including how it is effecting mental health and the mechanisms of coping with isolation.

"Basel is a small but very international city that contains a lot of culture and a vibrant research ecosystem."

Andrea Schenker-Wicki, President, University of Basel

The pandemic transformed the way universities worldwide could operate this year. The University of Basel is no exception and it went from being a traditional university to a digital one within a few days when Switzerland was locked down. Schenker-Wicki believes there is no return to the old normal: "For me, traditional university teaching has come to an end. We have to change to offer theoretical inputs in a digital form, while having discussions about scientific problems, approaches and so on in the classroom with professors and other students. I think that is much more interesting and inspiring than sitting quietly for hours listening to theory." She is also convinced that pandemic represents an opportunity for both the university and the broader scientific community: "In our teaching, we have made a big jump into the 21st century. In our research, we have received additional funds and will increase our impact on society. Overall, the crisis has demonstrated that science can have a huge positive impact and should be trusted."

Cozy and highly multinational learning institutions

Rector Kilian Stoffel presents a university that epitomizes Switzerland

The University of Neuchâtel is a major player and innovation driver in western Switzerland. At any one time, it educates about 4,200 students, 22 percent of them from outside Switzerland, making it a comfortable nest in terms of size, and enabling close proximity between its culturally diverse students and staff. Could you give us an overview of an institution that Times Higher Education ranks as one of Europe's top 20 universities with under 5,000 students?

Proximity is indeed one of the key characteristics of the University of Neuchâtel, both with regard to research and teaching. Because of its small size, it is easier to work on interdisciplinary projects here than it is at larger institutions. Additionally, it is easy for students to get in touch with their professors.

"Our priorities are digitalization and sustainability. Those two elements are guiding our approach and they will remain our major priorities."

Kilian Stoffel, Rector, University of Neuchâtel

The University of Neuchâtel is representative of the uniqueness of Switzerland and its individual regions. It's a small university, just like Switzerland is a small country, but both have a high innovational impact. Neuchâtel also offers an excellent environment for study, close to one of the key industries of Switzerland—watchmaking. A singular trait of the institution is that it's the smallest general university in Switzerland: we have four faculties that cover almost all the domains, with a strong accent on humanities, human sciences, economy and law, which make up about 80 percent of our programs. The remaining 20 percent are focused on natural sciences and technical domains. We offer many courses and the university is about to propose even more master's programs, including ones in specific fields that are not covered by the usual traditional disciplines. These are more focused on interdisciplinary work, and on targeting particular questions and needs that are relevant in our society today.

The University of Neuchâtel doesn't want to be the largest or the richest university, but it is very important to us to be the most relevant. We want to be relevant in all our activities from the content and form of our teaching to the subjects of our research, which should look at the burning questions of societies. We want our students to be in sync with these questions and we want our academic training to help provide answers to them.

Internationalization is a major trend that has been speeding up in Swiss universities lately, and the University of Neuchâtel's own research staff and 4,200 students hail from almost 100 different countries. How has



the university's impressive international network helped draw international students to its programs?

On the teaching side, we collaborate with universities all around the world. We currently have around 250 agreements with international universities for student exchanges, which is one element, but more important is program content. At the master's level, we have very specific programs—we don't cover everything but we have niches. The profile of these niche programs makes them unique worldwide and, as a result, they attract students from all over the globe.

Our numerous international collaborations have also helped us to draw in these students. This is a different strategy than the one we have for our bachelor courses, which are more targeted at local students.

How does the university approach research and development (R&D) and what are some of the areas where it has gained an international reputation for innovation?

In terms of structure, as well as our international partnerships we have a local innovation network that unifies academic institutions with industry and R&D establishments. The University of Neuchâtel is one of the five key partners in this network—it ensures the role of social innovation. With regard to projects, I would like to highlight two or three areas where we are notably active. The first concerns our national migration center, as migration remains a very important question for the world. A second focus we have is on chemical ecology: we are working on sustainable methods to fight insects and protect plants. Then we have lots of activities related to digitalization across our social sciences, law school and economics department.

We carry out substantial innovation promotion at the university. We take innovation as a research subject, which helps professors integrate different disciplines. The canton of Neuchâtel has moved from being a watchmaking hub toward microtechnologies, nanotechnologies and, more recently, digitalization. At the university, we are studying the social aspect of this transition: how this technology integrates into society and how to make it more accessible. This is quite exceptional because most universities are more focused on the technical and scientific side of things, which gives us a niche domain.

As the university's rector, what are the biggest priorities for the institution right now?

Our priorities are digitalization and sustainability. Those two elements are guiding our approach and they will remain our major priorities for the



Kilian Stoffel
Rector, University
of Neuchâtel

next two or three years at least, independent from the COVID-19 crisis. In these areas, we concentrate on some specific aspects—for example, there are important studies into cryptomoney happening at Neuchâtel. This is one of the niche technology areas we are working on and our science department is very active in this domain. Our law school is also running many projects around smart contracts and the use of cryptocurrencies. These projects illustrate our vision to work with digitalization and the different issues that surround it.

“As well as our international partnerships we have a local innovation network that unifies academic institutions with industry and R&D establishments.”

Kilian Stoffel, Rector, University of Neuchâtel

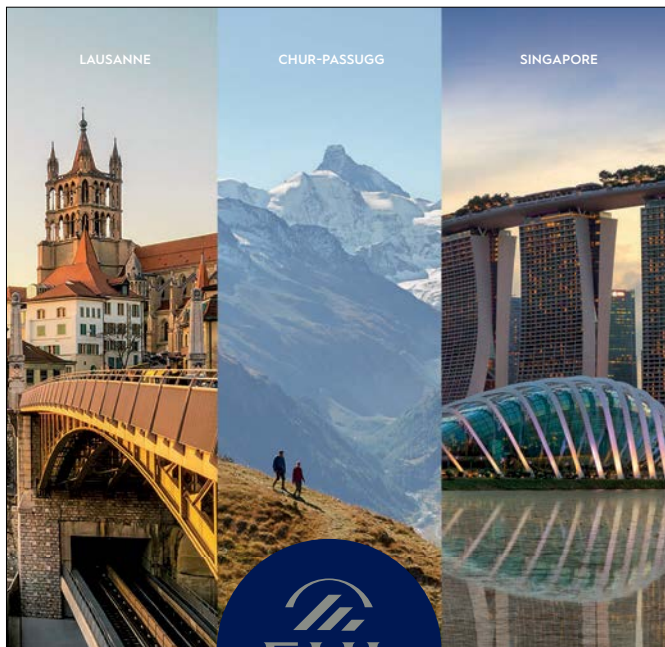
Universities in Switzerland have spearheaded a number of COVID-19 related projects in order to better understand the dynamics and consequences of the pandemic and to develop measures to overcome it. Can you tell us about the activities of the University of Neuchâtel in this area?

We are not a technical or medical school, so we are not very oriented toward vaccines and medical treatments. However, we have made a significant number of initiatives at the legal level—our law school has organized seminars for enterprises to look at what the crisis means for them, the rules relating to the confinement of people working from home, the insurance implications and so on. In our social department, some of our researchers who specialize in human geography have been analyzing several cities to try and find better structures to combat the virus from the social point of view. They also ran many seminars that provided historical insights into this kind of pandemic and offered support to companies in terms of how to work around coronavirus. A lot of our professors were also active in advising businesses and institutions on legal and economic issues surrounding COVID-19.

As a professor of computer science yourself, to what extent has this health crisis disrupted traditional educational models and accelerated some of the key trends already in place, such as digitalization?

In my opinion, it didn't disrupt enough. The traditional methods of teaching were just moved to online platforms—but if we had used those tools to their maximum, innovation would really have taken place. The University of Neuchâtel made a definite move toward digitalization with remote, online teaching and so on, but most of the teaching was still very close to and mimicked traditional teaching. This worked well—technologically it flowed, there were no interruptions at the university, no break in education, and our students and teachers were happy with the systems put in place. But when you talk about disruption, I think there is still space left to really disrupt traditional teaching.

After collecting feedback from students and staff, it's clear that both remote and in-person teaching have their pros and cons, and the demand is to maintain them both. A key factor in this is the beneficial proximity between students and teachers that we offer at the University of Neuchâtel. We are, therefore, now working toward having a mixed scenario, where we can leverage the best aspects of online teaching and in-person, face-to-face education.



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Medtech industry: In excellent health

Swiss medtech firms are best in class in the design and manufacture of vital hospital equipment and consumables



Switzerland's medical technology (medtech) industry has an impressive track record of success and growth, making it ideally placed to help governments and global health experts in the ongoing fight against the coronavirus pandemic. With more than 1,400 companies involved in the design, production, trade and distribution of cutting-edge medtech equipment, the industry now employs around 59,000 people—more than one percent of the Swiss workforce.

Swiss-designed medtech is present in thousands of hospitals, medical centers, doctors' surgeries and nursing homes around the world, with public and private sector healthcare providers using the equipment daily to diagnose, observe and treat people to improve patients' quality of care and aid their recovery from disease or accidents.

“The Swiss medtech industry is agile, innovative, internationally competitive and recognized for its high specialization, precision, quality and reliability,” notes industry association, Swiss Medtech. “The proximity of startups, global players and leading universities as well as the high density of companies across the entire value-added chain make Switzerland an attrac-

“The Swiss medtech industry is agile, innovative, internationally competitive and recognized for its high specialization, precision, quality and reliability.”

Swiss Medtech

tive and unique location for medtech.” According to the 2018 Swiss Medical Technology Industry (SMTI) sector study, the industry generated more than 2.3 percent of gross domestic product in 2017, and was responsible for 5.1 percent of total Swiss exports that year, with the U.S. and Germany the leading destinations for Swiss medtech devices.

“Switzerland provides a unique medtech cluster thanks to its high density of manufacturers, industry-specialized suppliers and service providers,” the SMTI highlighted in the study's introduction. Advantages of the important medtech production hub include the presence of specialized medtech know-how, highly skilled professionals and strong research centers. “Given the favorable conditions, the positive exchange between government, public authorities and industry, as well as the high innovative strength of companies, our country still provides the best conditions needed to occupy an important position in the worldwide supply of medical devices.”

In early 2020, once the potential scale of the coronavirus outbreak became apparent and concerned governments implemented stringent lockdowns, many countries sought to acquire ventilators as COVID-19 has a tendency to attack the lungs and respiratory tracks, leaving patients

reliant on the machines to control their lungs for them.

Spearheading the comprehensive medtech response to the global health emergency is Hamilton Company, a dynamic enterprise that for the past 60 years has specialized in the development, manufacturing and customization of precision measurement devices, automated liquid handling workstations and sample management systems. Hamilton has subsidiary offices throughout the world and two regional headquarters, one of them in the U.S.'s Nevada.

The other is in Switzerland, where it employs more than 1,450 people. The company's vision is to drive innovation to improve people's lives, with most of its work focused on four main areas: the production of ventilators for intensive care stations; robotics for automation in the pharmaceutical and biotech industry; sensors to measure pH, oxygen levels or carbon dioxide for use by vaccine manufacturers; sample management; and storage at temperatures significantly below zero Celsius.

In addition to the supply of life-saving ventilators during the coronavirus crisis, Hamilton is supplying labs and biotech companies around the world with equipment and consumables to automate patient testing, hasten vaccine compound development and enable efficient inoculation manufacturing for combating the outbreak.

The award-winning group also launched multiple automation-related initiatives to aid healthcare workers and researchers as they battle the pandemic. Two new automated assay ready workstations, based on the company's Microlab STARlet liquid handling workstation, facilitate rapid, high-throughput diagnostic and research-based testing of SARS-CoV-2, the coronavirus that causes the novel COVID-19.

The first is the MagEx STARlet assay-ready workstation that enables high-throughput magnetic bead-based RNA extraction of biological samples. The second is the PCR Prep STARlet assay-ready workstation, which comes pre-configured and qualified to automate high-throughput pre-PCR sample setup using the latest U.S. Centers for Disease Control and Prevention protocols. “Our support of the healthcare community and researchers working to identify, treat and contain the coronavirus is our prime priority,” said Steve Hamilton, president and CEO of Hamilton Company during the workstations' launch.

Hamilton has been a pioneer in the medtech industry, from the development of the lead-shielded syringe by Clark Hamilton in the 1940s to the first automated screening of blood for AIDS and hepatitis. The group's innovation pipeline means boundaries are constantly being pushed in the quest to develop new technologies and explore new areas of research.



Andreas Wieland
CEO, Hamilton
Bonaduz

“During this pandemic, we have multiplied our ventilator production by around 400 percent. That was not easy: the whole supply chain had to be geared up and we had products all over the place. This crisis has made us realize how globalized the world is and how globalized we are,” explains Andreas Wieland, CEO of Hamilton Bonaduz in Switzerland.

“Since our vision is to help people, it was of utmost importance to us during this crisis to always sell our products and ventilators to places where they were most urgently needed. Many countries wanted to just buy a lot of instruments to put them in storage and be prepared, but we had to prioritize countries like Italy, for example, where the needs were so immediate and huge.

“Our approach was that any instrument leaving our facilities should be landing in a hospital bed no more than one day later in order to treat a patient. We had many calls from health ministers abroad, asking for our instruments. And we did our best to place our ventilators where they were most needed and most at use in very short time.

“Our testing instruments have also played an important role during the pandemic outbreak. Testing is indeed essential to know whether or not a patient has been infected and whether or not they need to be quarantined. Hamilton could deliver enough of its testing instruments and put them at disposal for coronavirus tests.”

“We expect to see a lot of developments in the medical field and more specifically around ventilator manufacturing,” Wieland continues. “More and more people need ventilators as the air is getting worse in big cities and they need treatments. The needs are here and this industry will continue to grow. Besides, such virus outbreaks are bound to happen again, which is another good reason why demand and production will sustain.

“Another area where we see a promising potential is DNA analysis. In one gram of human DNA there is as much information as in a whole truckload of USB sticks, so this is huge. There is a lot of research going on in this area and big dynamics. Also, sustainability and environmental protection is another important area for us, and certainly one where we expect more momentum going forward. Our sensors are able to measure many gases and elements in the atmosphere that are critical for the environment, and we expect demand for this type of product to keep increasing.

“Hamilton’s vision is to drive innovation to improve people’s lives, this is very important for us. We generate a lot of research and development work; we produce a lot of patents.”

Andreas Wieland, CEO, Hamilton Bonaduz

“We have expanded our sales a lot, especially in the medical business. In the first five months of 2020 we achieved the same sales volume as in all of 2019—our sales and profits have skyrocketed. As a result of this sudden business activity increase we have had to hire a lot of people.

“We generate a lot of research and development work; we produce a lot of patents. We want to drive innovation to improve people’s lives—in the medical field, in the biopharmaceutical field, in the biotech field, in the food industry and environmental field. Switzerland stands out as the world’s innovation leader and is an excellent business location. Hamilton has manufactured complicated products for the past 60 years from Switzerland, using a lot of automation.”

Swiss education model: Academic learning mixed with practical training

A dual education model that reflects the needs of society and businesses

Switzerland’s education system is widely recognized as one of the finest in the world, with many of its universities included in the prestigious QS World University Rankings and The Times Higher Education (THE) World University Rankings. A distinct trait of the country’s school, college and university system is the broad range of courses and topics—including apprenticeships—students can select according to their interests and talents, rather than mandatory subjects in which they may struggle.

This diversification opens many doors and adds to the country’s global appeal, making it a magnet for the best international students. Half of the eight leading Swiss universities make the world’s top 100 for their percentage of international students, and the country also performs well when comparing the percentage of international academic staff members to that of universities in other countries. Education is free in public universities, while Switzerland’s high standards of living and social, fiscal and political stability combine to make it an attractive studying destination.

Students are estimated to need at least \$17,000 per year to cover their living costs in Switzerland, a figure that compares relatively favorably with some other European countries. In addition, the country’s relatively low

tuition fees help offset some of the higher cost of living. Zurich, Lausanne, Geneva, Basel and the federal capital Bern are the most popular student cities. Popular undergraduate courses range from business management, international relations, computer science, biological science, aerospace and mechanical engineering, to accounting and finance, law and economics. Master’s courses are also widely available for people wishing to further their knowledge on a specific topic.

The Swiss education model revolves around egalitarian access to education, vocational education and elite research universities. Apprenticeships are an integral and important part of Switzerland’s education system. In fact, more than two-thirds of Swiss students start out with an apprenticeship after compulsory school. This way, students are introduced to the working world, while the system also highly benefits employers that see it as a strategy to build a talent pool and which feel even more inclined to invest in the next generation of skilled workers.

In 2019, nine Swiss universities made it onto the coveted QS World University Rankings. The rankings’ summary underlined this exceptional performance, noting the population of the entire country is only around 8.5 million people, equivalent to the number of people living in the U.S. state of Virginia. As well as a strong presence in the international ranking tables, universities in Switzerland are also very international in terms of their student and academic communities. Half of the best-ranked Swiss



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universities make the world's top 100 for their percentage of international students, and the country also performs well when comparing the percentage of international academic staff members to universities elsewhere.

Authors of the competing THE report were also quick to highlight the outstanding quality of Switzerland's higher education sector in many different subjects. Of the universities on the European mainland, Swiss institution ETH Zurich—the Swiss Federal Institute of Technology Zurich—achieved the highest rank, putting it in the top five in Europe and joint 14th in the THE World University Rankings 2021.

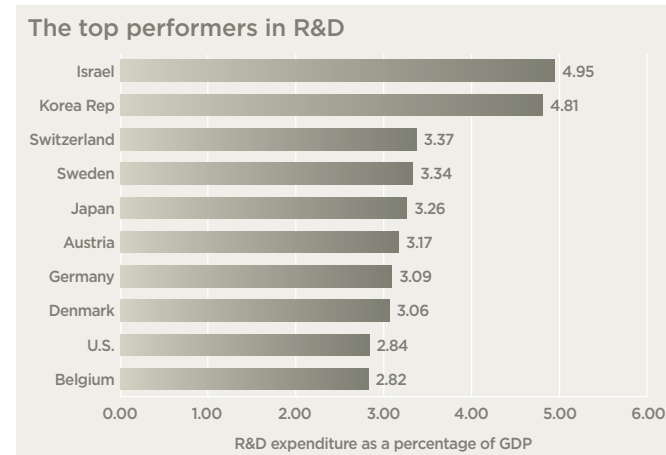
One of the world's most prestigious science and technology universities, ETH Zurich has produced more than 20 Nobel Prize laureates, including the famous scientist Albert Einstein. As well as providing excellence in science and technology education, the university is also a key contributor to science and technology research. Its core values of freedom and individual responsibility, entrepreneurial spirit and open-mindedness make it a bedrock of true Swiss conduct and character.

Also rated very highly by the comprehensive THE report is École Polytechnique Fédérale de Lausanne (EPFL), an institution where almost half of the students are sourced from abroad. With a core focus on sustainability, the award-winning education provider specializes in natural science and engineering, and is held in high regard globally for its research activities and output. In addition, the modern campus sits on the shores of beautiful Lake Geneva and is powered entirely by electricity produced through hydropower technology.

A key to their success is that Switzerland's universities are highly connected to the corporate world and aim to prepare students to overcome challenges of the workplace. Universities emphasize a multidisciplinary

approach in order to break barriers between research fields, promote exchange, and to spur new research angles and projects. They also encourage technology transfers, so as to shorten the time between research being concluded, its application and its subsequent transformation into startups and businesses.

According to official data, in 2019 the government spent approximately \$3 billion on projects, services and initiatives to facilitate research and development activities. Almost 90 percent of that sum was dedicated to the support and promotion of research, in the form of federal contributions. In the same year, the number of federal staff dedicated to research activities increased slightly to over 1,000 jobs or full-time equivalents, the national statistics agency disclosed.



Swiss schools: Top of the league

Educational excellence starts on the first school benches in Switzerland, with global groups investing heavily



Home to many of the world's most prestigious and top-ranking secondary schools, Switzerland boasts a fine range of educational establishments that offer young students the absolute best in teaching and learning resources. The country has long been a haven for parents wanting to ensure their children experience educational excellence in a supportive multilingual and multicultural environment, while equipping them with the skills and knowledge to achieve ambitious career and personal goals.



Nadim Nsouli
Founder and Group
CEO, Inspired
Education Group

With Swiss youngsters aware of the importance of innovation from an early age, it is easy to see why so many leading international schools have invested significant sums in constructing inspiring and welcoming locations for thousands of children from dozens of different countries.

Inspired Education Group has grown quickly in recent years to educate more than 45,000 students across an international network of over 64 schools on five continents, including the outstanding St. George's International School in Montreux. All schools within the group are individually developed and designed in response to their specific environment and location, so ensuring the delivery of excellent education to their respective communities.

St. George's is a vibrant and truly international school, with students from more than 60 different nations that come together to form a diverse and inspiring community of young people. Less than an hour from Geneva by car, the school's 12-acre campus offers both boarding and day school programs that blend together as one to help the coveted establishment achieve its visionary goals and achievements.

"The schools we acquire are all successful schools in the countries and cities in which they operate; it's always key for us to protect what made these schools successful in the first place: their ethos and values," states Nadim Nsouli, founder and group CEO of Inspired. "By being part of the Inspired group they can then benefit from global best practices that we have gathered from operating around the world—the best schools become even better through collaboration and partnership.

"St. George's International School is a very special school; the jewel in the crown within our group. It's probably the oldest school in our network, having been open for more than 90 years, and is located in an amazing setting with the lake and mountains surrounding it. We acquired the school a few years ago and invested large amounts in upgrading its facilities and significantly raising its academic standards.

"It's the type of school I would love to send my children to: a prime loca-

tion surrounded by amazing natural beauty, an extremely safe environment, top academic performance, sports and performing arts. It's small, while still being part of the best premium schools group globally, having access to international best practices."

Like private and public schools all over the world, the arrival of COVID-19 created challenges for teachers and pupils who quickly and effortlessly made the transition from classroom learning to e-learning solutions. The outbreak accelerated Inspired's digital transition and Nsouli is proud about the speed at which all the group's schools switched to live, synchronous virtual learning, with its school in Vietnam at the forefront of this drive, followed by other schools in the portfolio.

"Taking the lessons from Vietnam, we prepared our schools to go virtual around the world, which allowed us to be significantly ahead of our competitors when governments required schools to close," the senior executive explains. "Our live virtual learning has been extremely successful, specifically because it is live all day following the normal school timetable. The power of the group really came across during this crisis. Our schools benefited not only from the lessons learnt from other schools that shut down before them, but also best practices from different parts of the world on reopening."

Inspired has a very selective recruitment process, with teachers hand-

"St. George's International School is in a prime location surrounded by amazing, natural beauty, an extremely safe environment, top academic performance, sports and performing arts."

Nadim Nsouli, Founder and Group CEO, Inspired Education Group

picked as part of a dedication to excellence that permeates every aspect of each school. Once appointed, headteachers have the opportunity to become regional leaders with a portfolio of schools to oversee, as part of Inspired's strong leadership development and succession planning. "The head and teachers are what make a school," Nsouli adds. "Our view is the child has only one chance to do well in school that year, so we carefully and continuously develop our teachers, providing coaching and training through one of the largest professional learning communities in the sector.

"Switzerland is an amazing country from every perspective. We are proud to have a school there; the setting couldn't be more ideal for a school. It's a safe and secure environment surrounded by natural beauty, providing amazing international education and is part of a global group that has global reach.

"St. George's International School is a wonderful and vibrant school that, combined with the benefits of being part of Inspired Education Group, offers a school experience like no other in Switzerland," he concludes.



Le Rosey's summer camps are often the path to full-time study

Breaking the educational mold

The virtue is in what you do, not in what you say

Profoundly Swiss, but with a long international reach considering the large proportion of foreign students studying at its two outstandingly equipped campuses, Institut Le Rosey is Switzerland's most prestigious and high-class private boarding school. With a beautiful main campus set in a medieval château, a winter retreat in the picturesque ski resort of Gstaad and even a sailing center on the shores of Lake Geneva, Le Rosey offers an unparalleled learning environment that strives to build future leaders through academics, sports, and artistic, humanitarian, environmental and social programs.

The school motto *Actis Virtus*—the virtue is in what you do, not in what you say—is at the core of every activity and class, with students tasked daily with showing initiative in group meetings and assuming responsibility to develop physical and psychological strengths. A quota system ensures no more than 10 percent of the student body comes from any one country, and pupils can study up to four languages from the nearly 30 offered.

Despite Le Rosey's attachment to its traditions, discipline and educational standards, the school has always been innovative and at the forefront of many pedagogical advances, especially in the areas of language teaching, biculturalism, personal development, the integration of sports and arts in daily life, motivation and the place of values in education. Students are encouraged to evolve their artistic talents. Several orchestras, choirs, numerous musical ensembles and soloists, theater groups, dance and art workshops, photo studios and gastronomy lessons are available for students of all ages.

For those students who prefer to spend their summer sharpening up their academic and language skills, Le Rosey also offers places at a special summer school. Pupils participate in revision courses in the mornings and then choose from different sports, technology and creative activities in the afternoons. Evening entertainment and weekend excursions are also provided, as school leaders are convinced that the best way to get good results is to make sure students also have time to enjoy themselves. "For more than 100 years,



All pupils follow a bicultural and bilingual curriculum

the entire school has moved to the resort town of Gstaad for the winter: every student, every teacher, our entire staff move to the Alps to spend two months up there," says Christophe Gudin, general director of Institut Le Rosey. "This dual campus set up is very much part of the DNA of the school: it enables us to break any routine and ensures that we don't do anything in the same way for too long in the school.

"Our summer camps are also an excellent way to get to know Le Rosey; they illustrate the best Le Rosey has to offer in a short few weeks: becoming independent, discovering and developing all your talents, living in a truly international community, opening yourself to other cultures and other ways of thinking. A good number of Roseans attended our summer camps before actually entering the school; that's probably the main way to get to know Le Rosey."

The popular summer camps feature a range of sports, activities and excursions in July and August, with students boarding for three weeks in a fun-filled international and multicultural environment, as Gudin explains. "Mornings are typically dedicated to academic learning with classes in French, English, maths or programming, but we also offer special academies. Historically, the Real Madrid Foundation and Tony Parker have run very serious training sessions in football [soccer] and basketball, respectively. Afternoons tend to allow campers to explore all their passions and try nearly any activity they can think of from mountaineering to sailing and theater to circus school.

"A good number of Roseans attended our summer camps before actually entering the school; that's probably the main way to get to know Le Rosey."

Christophe Gudin, General Director, Institut Le Rosey

"Additionally, we also run SAT camps toward U.S. university applications that run as smaller camps within the main camps, where the improvement results in the exam have been best in class. Children can choose whether to discover our campus in the Alps by opting for a camp in Gstaad, or stay by the lake on the main campus in Rolle, so whichever location they decide on, they're sure to enjoy the beauty of Switzerland."

Given its strong linguistic and cultural diversity that makes it easy to integrate, Switzerland's stability, openness and tolerance, as well as its stunning



Students are encouraged to fine-tune teamwork skills via sports



Traditional field sports like rugby, cricket and football are offered

natural landscapes and attractive cities, mean many Le Rosey alumni return each year. "Most of the students that come to Le Rosey fall in love with the school and the country," Gudin adds. "Families in various leadership positions around the world also keep very strong ties to Switzerland.

"We have around 1,000 alumni that return to Gstaad almost every year, which is a significant number. This love of Switzerland, this thinking of Switzerland in their life has really promoted the country all over the world to some extent, and for our school has quite an important and powerful ambassadorship role." Gudin notes that while many boarding schools create a close-knit community, this trend is even more true in the case of Le Rosey

because of the relationship that the adults have with the children on campus. "It's a very natural relationship because teachers are living with the students, with their own families, in the school," he explains.

"That creates a very peculiar link: you follow your students day by day, you know what happens in their life in any given day, you notice when something happens in their teenage life and you have a very profound relationship with the kids. These ties remain because the children stay linked as they become adults. Our alumni association is one of the most tightly knit of its kind; it spreads around the globe and exists in nearly every large city in the world."



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Geneva: The place to be for international studies

Home to many leading banks, financial institutions and global organizations, the city has a rich international flavor

One of Europe's most cosmopolitan cities, Geneva is the ideal setting for talented students seeking to pursue an international career in finance or banking, or for those wishing to work in diplomacy. Home to respected global bodies like the World Health Organization and the International Red Cross, the welcoming city also houses the European headquarters of the United Nations (UN).

One business school that has successfully leveraged the international environment and atmosphere of Geneva is the International University in Geneva (IUG). The university started off as a more traditional business school before expanding its curricula across the academic spectrum, and offers today graduate and undergraduate programs in business administration, international relations,



marketing and digital media. IUG enjoys extremely strong partnerships with industry leaders and institutions based in the city, with many members of its teaching staff originating from Geneva's international organizations.

Renowned for its innovation-focused programs and double degree programs, the forward-thinking institution positions as the ultimate international business school. "We have built on the international atmosphere and multicultural environment that Geneva has a reputation for," says Eric Willumsen, president of IUG. "This means we have a unique composition of 80 nationalities among the student body and 20 nationalities among the faculty.

"We now have more than 24 partnerships around the world, one of which we recently signed with Boston University in Massachusetts. Two years ago, we started a unique partnership with the U.K.'s University of Plymouth. For a student coming all the way to Geneva from the U.S., Africa, Asia or elsewhere, it is sometimes easier to stay longer and obtain a double degree from two institutions."

The proactive university is embracing innovation and is adjusting its programs to better prepare students for the challenges of tomorrow, with IUG relying on the professional environment in Geneva to bring added value to student learning through its various courses and programs. "We have introduced programs focused on digital innovation and transformation across all areas: international relations, business, digital media and, obviously, in computer science," Willumsen continues.

"All of our students have to follow a certain number of courses focusing on digital innovation, digital transformation, cybersecurity and artificial intelligence. We are now introducing a master's in business analytics that focuses on data management and business intelligence. We are pleased to have among our faculty in that new program people from Procter & Gamble and other multinationals from whom we can draw expertise." Describing Geneva as "a natural destination for students who want to study international relations and international business," Willumsen is confident the city will retain its reputation as a hub of global governance. "As the world becomes more turbulent, Geneva is most certainly a center of peace, diplomacy and global governance," he adds. "There are probably two places in the world where you have such a concentration of UN-related agencies: New York and Geneva. Geneva maybe even more so."



Eric Willumsen
President, International University in Geneva

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Value and recognition of degrees: Reality check

How can you compare the dizzying array of educational options available to students today?

For as long as higher education has existed, the question of measuring its quality has been at the center of its evolution. Where does its quality come from? What objective criteria can be used to evaluate the value of a diploma? Are national academic recognitions all equivalent, allowing perfect transferability? What is the best basis for comparison between universities, degrees, institutes, schools or professional studies—and how does it affect students? These questions spike what could nearly be considered as an ideological debate. Let's try to review this here.

The interrogations linked to the value of a degree, at the crossroads of academic and industry recognition, have pushed higher education institutions around the world to rethink and reshape their learning paths again and again, advancing through the endless meanders of legislation and the realities of an ever-shifting job market.

The use of the specific term "university" does not, therefore, appear to be a central tenet in the appreciation of a school.

Enter the world of accreditations and rankings. Seldom has an industry created so many parallel businesses that attempt to boil down the complex workings of a system into a single stamp or rank. There are hundreds of different academic accreditations and education rankings, all with a different level of seriousness and recognition. These aim to provide credibility to schools battling for their future pupils' attention. This situation does create a significant amount of confusion among prospective students and external observers.

To be or not to be a university. Is that still the question?

Ever since higher education, especially in the business fields, has been democratized and made accessible to a vastly increased population around the world, and the activity has been liberalized, education has become a global business. As the endeavor of providing youngsters with quality education has extended beyond the walls of traditional public universities, market pressure has created niches where schools attempt to differentiate themselves and gain a competitive edge. A growing number of actors and legislation have entered the market, not only linked to state universities



Bologna, Italy: the birthplace of the ECTS agreement

or accreditations, but also professional accrediting bodies ensuring that business education meets industry standards and needs. And lately, even leading companies have announced their will to enter the game—just recently, none less than Google!

In a complex ecosystem, the need for transparency becomes obvious. In 2014, Christoph Grolimund, now president of the European Association for Quality Assurance in Higher Education, was saying, "We support higher education in their own quality assurance." Nevertheless, the Swiss government's 2015 legislation allowing only federally accredited institutions to use the term "university" in their name was globally misunderstood, especially in an international context.

Why? Today, some of the best bachelor and master's degrees in the world are provided in Switzerland, by business schools that aren't universities per se—but, until 2022, still have the right to name themselves "universities" and deliver bachelors and masters.

As such, the International Institute for Management Development or the École Hôtelière de Lausanne (EHL)—although the latter is affiliated to the University of Applied Sciences and Arts of Western Switzerland—are leading the world's rankings. The use of the specific term "university" does not, therefore, appear to be a central tenet in the appreciation of a school.

The best business schools have worked hard to partner with other state-accredited institutions to guarantee their students pass this first hurdle when applying to their preferred graduate school.

QS World University Rankings, one of the world's most respected ranking organizations, uses metrics such as paper citations, employer reputation and academic reputation. So it is clear that the best way to judge a school is to measure its impact and influence in the world, both in terms of knowledge creation, and in its ability to create opportunities for its graduates through employability, out-of-class learnings and its alumni network. This has the advantage of bringing back pragmatic and useful metrics that are at the core of the learning journey—something that most industry professionals intuitively grasp.



In a number of key areas, business schools tend to have the upper hand on state universities

UNSPLOASH: NEONBRAND

And what if the final value of a diploma was the person holding it?

That being said, a historical criterion that students looking to select an undergraduate program might wish to assess is their future ability to enroll elsewhere for a graduate degree.

An increased number of global undergraduate degrees being delivered around the world also entails an inevitable dilution of their value, based on simple supply and demand principles. This pushes, yet again, a growing number of students to pursue graduate studies such as masters and MBAs to further specialize or enhance their credentials, especially in times of job scarcity.

Transferability and recognition between schools is historically an element of consideration. The validity of an undergraduate diploma when applying to a master's degree can be paramount for some, although not straightforward.

This means that when selecting the happy few, they will look at grades, the application essay, professional experience, extra-curricular activity, and even subjective factors such as personality and leadership potential.

Given the globalization of education and travel, state accreditation has been for many admissions departments an easy way to ensure quality standards when reviewing applications. To this goal, the best business schools have endeavored to partner with other state-accredited institutions, often issuing a double degree: a private degree from the institution with industry endorsement and a public degree awarded by the partner giving the graduate a state-recognized academic diploma. This is actually the case for a high number of institutions in Switzerland from hospitality schools to business schools, from specialized institutes to more specific curriculums.

But even then, not every degree is recognized everywhere. The academic, legal and administrative situation is never really the same, especially internationally. Bologna's agreement—the European Credit Transfer and Accumulation System (ECTS)—is not even a guarantee of recognition within Europe today, where the laws and regulations can be very different from one country to the other.

It is of course easier to apply to an Ivy League school with a highly regarded bachelor—here, rankings are a useful source of information—but it is far from being a stand-alone ticket to entry. Many of the best graduate schools in the world maintain a very low acceptance ratio to preserve a level of exclusivity that feeds into their reputation. This means that when selecting the happy few, they will look at grades, the application essay, professional experience, extra-curricular activity, and even subjective factors such as personality and leadership potential. Additionally, institutions are also requesting that candidates pass external exams like GMAT or GRE, in order to assess and select the right ones.

Toward a new educational paradigm

In a paper published in Forbes last September, Brandon Busteed, president of University Partners and global head of learn-work innovation at Kaplan was unequivocal: "There's no better investment return than college—not even close."

That being said, universities are notoriously static in their basic structure. Few industries have changed so little in two hundred years. In his article, Busteed also stated that "higher education that is more work-aligned with direct routes to fast-growing jobs is the key to unlocking the value proposition of college today and in the future," which is a new direction many big universities seem to have difficulty moving toward.

Many observers tend to think this immutability is coming to an end. Andrea Schenker-Wicki, president of the University of Basel weighs in on this question and hypothesizes that "traditional university teaching at the size we used to do it has come to an end." She goes on to suggest that "we have to change our teaching: going into flipped classrooms where you have your theoretical inputs in a digital form, but you do your "homework"—discussion, analyses and so on—in the classroom, discussing scientific problems or approaches with your teachers, professors, class mates and with the students all around."

EHL Group CEO Michel Rochat also views the future of education as a fluid and dynamic process that will entail pragmatically updating a course's contents, but also fundamentally reviewing how it is delivered. "Over the next few years, EHL will work on modernizing its educational portfolio," he says, and this has taken a new dimension in a post-COVID world, where remote and digital learning has quickly come to the foreground. Static year-to-year comparisons seem obsolete and the



New York's Columbia University: a favored place for further study

UNSPLOASH: JAHSEB AULI

new measuring stick is the capacity of a school to renew itself, evolve and adapt. A prestigious name on a diploma is no longer sufficient. Raw knowledge is no longer sufficient. What employers are looking for today are skills. Both hard and soft. There are many aspects of student life, beyond the classroom, to consider such as leadership training, network building and real industry exposure.

In today's marketplace, having Google on a resume can offer the same prestige as a university—and arguably far more in terms of job skills.

In fact, new and less traditional actors have understood this need and are entering the scene with the potential to deeply disrupt the higher education industry. "Judging the value of a degree is tricky [...] it's not like buying steak at a grocery store," stated a recent article from the Foundation for Economic Education.

To face outside pressures from the likes of Google, schools will have to be nimble, quick and innovative. This is precisely where smaller, independent schools will have the upper hand. Their ability to quickly turnaround and shake things up will allow them to quickly offset the growing gaps between the current learning experience and the emerging expectations from both employers and students.

Books and first-class professors are now part of a bigger equation. Luc Craen, managing director of EU Business School, explains that "today, our students learn as much in class as they do outside."

"It is our responsibility to provide relevant and innovative experiences, industry insights, interactions and conferences that complement in-class teaching. Classrooms are no longer a place of one-sided monologue where students rush to take notes. Rather, it is a place of reflection and critical thinking."

This is an approach that is reflected in the institution's "Learning from Leaders" series, during which Peter Vanham—author of Before I Was CEO and a World Economic Forum senior executive—interviews world-renowned leaders for the benefit of EU Business School's students. Among others, these have included Jean-Claude Biver from LVMH; Christian Clerc, the president of Four Seasons who also happens to be



QS is a leader for world rankings in higher education

an EHL graduate; Thierry Geerts, Google country director; and Zev Siegl, co-founder of Starbucks. Vanham states: "It is encouraging to see a private business school being so in tune with the needs of industry. Such programs are typically the kind of out-of-class added value that make the difference."

Studying is of vital importance. That is the only constant which has never been up for debate. New considerations have emerged, such as upskilling, reskilling, experiential and lifelong learning, which need to be dealt with through yearly iteration and updating of the curricula.

This is connected to a very real industry need. A November 2019 Harvard Business Review article stated that "ManpowerGroup clients lament the time and money that they must invest in upskilling and re-skilling graduates so they can actually learn skills required to be successful at work versus the skills that made them successful in a classroom."

Companies need "plug-and-play talent" that traditional auditorium lectures of century-old university models are losing grip over. Case in point: the rise of applied learning and growing influence of business schools and their ability to produce highly employable talents, with more up-to-date curriculums, faculty drawn from industry and their networks, and reduced class sizes.

"Employers need skills, not just knowledge or titles: there is a general questioning of how university qualifications translate to work, with a growing number of employers expressing reservations about graduates' job-readiness and potential to add immediate value to the workplace."
Harvard Business Review, November 2019

It is clear to any recruiter and professional today that the value of an education has transcended the name on the diploma and/or its state accreditation.

To a large extent, schools must be considered as an enabling platform that provides tools and opportunity to grow—leaving a great part of that responsibility to the student. A diploma, at the end of the day, is what you decide to make of it.

Crafting today the business leaders of tomorrow

Swiss business schools' curricula now clearly reflect society's current issues

Business School Lausanne (BSL) is one of Switzerland's leading schools of its kind, and was the first business school in Europe to have its programs accredited by the Accreditation Council for Business Schools and Programs in 1996. The award-winning, boutique school aims to provide a different type of education, with programs focused on fundamental changes of working in the 21st century, as BSL's president, Philippe Du Pasquier, explains.



Philippe Du Pasquier
President, Business School Lausanne

BSL was founded in 1987 by Dr. John Hobbs so is now more than 30 years old. Can you give us some key facts and figures to understand the importance and contribution of the school to the country and globally?

We teach our students how to be responsible citizens, essentially, and how to be actors of change in today's society. At present, BSL has more than 1,500 alumni who are applying what they learned here in higher business positions.

How does BSL distinguish itself from other business schools in the country and in other nations, and how does it stand out in Switzerland's higher education landscape?

Together with our previous dean, we had put a lot of emphasis on sustainability. That was one of the key differentiating factors, however we realized that such a focus was too narrow. That is why, in 2018 and with our new management, we have changed our approach and chosen to enlarge our focus to cover all of today's mega-trends.

We didn't abandon the sustainability aspect, which is still very important, but are offering more practical courses, such as data analytics and so on, and we provide our students with the concrete tools to have an impact and bring changes in society.

BSL is highly international, teaching all its courses in English. It is home to students of 60 nationalities and aims to position itself as a "truly global learning lab." Tell us about your efforts to strengthen BSL's international reach and network; what are your plans to expand your cooperation with other universities, global industrial players and corporations?

Around 85 percent of our students are foreign, only a very small proportion are Swiss. Partnerships are certainly the way forward for BSL and the way we can continue to develop. We have already put in place some international partnerships such as one with a university in South Korea.

We have cooperation with them at two levels, some of our faculty teach



modules there, and then South Korean students come here at the end of their studies for one week and work for companies like Nestlé and others. Aside from that, we also have other projects in Eastern Europe, in the Netherlands and in the Far East to develop other partnerships.

The forthcoming academic year promises to be interesting with the pandemic still present. What kind of specific message would you like to address to the global student community?

We'll continue to deliver classes and provide teaching at our campus at BSL in Lausanne; and in parallel, we will also deliver online classes for those of our students who would not be able to join. We are offering the full range of possibilities and taking into account all our students' needs: some of them may not be able to return, some of them may be afraid of physical contact, some may want to postpone their courses or they may have other reasons.

We are a small community school and one thing that students appreciate at BSL is the proximity between students and professors, the availability of teachers, the possibility to talk to them and so on. That is what makes BSL different and we want to keep this proximity in our distance learning. In a recent survey, Switzerland was considered the safest place in terms of COVID-19, which when combined with our holistic approach, for tangible and remote courses, gives us a winning edge. This is a big selling point for us.

"We teach our students how to be responsible citizens, essentially, and how to be actors of change in today's society."

Philippe Du Pasquier, President, Business School Lausanne

Going forward, what would you like to achieve in the next three to five years for BSL? Where would you like to take the school in the short to medium term?

I'd love to see a slight increase in the number of students at BSL. We certainly have the capacity to absorb more students than we currently have enrolled, perhaps 50 percent more, and that's one of my goals. Another goal is to develop partnerships for the school.

What are some of the current priorities at BSL? How will the COVID-19 pandemic affect BSL's agenda?

I want to encourage people to feel safe here in Switzerland, the situation is quite under control now and we don't need to fear a second wave. After this crisis, the world will not be exactly the same. There will be a change for sure, but the magnitude of the change is impossible to determine today.



The award-winning Glion hospitality management school in Montreux



Where academic excellence gets put into practice

Infused with Swiss values, hospitality schools are open to innovation

According to the latest QS rankings, four of the world's top five hospitality management schools are Swiss. Two of these are part of Sommet Education Group: Glion Institute of Higher Education and Les Roches. Since last year, the world-renowned French culinary school École Ducasse has also been under the group's umbrella. Its visionary CEO, Benoît-Etienne Domenget, explains how the group has capitalized on Switzerland's unique education model to become a global player.

Sommet offers a full ecosystem of hospitality management and culinary schools. Our vision is to be the leading and broadest player in hospitality education, so our courses cover the academic spectrum for young graduates and talented professionals that want to stand out in the sector. These range from short courses at École Ducasse to bachelor degrees, specialized masters' and MBAs at Glion and Les Roches.

Glion and Les Roches are iconic Swiss institutions and Sommet is deeply rooted in Switzerland's dual education model. It is at the core of our values: we value academic excellence and practical education on the same level. Our curricula are built to reflect this, offering both very strong academic learning and practice. While staying close to the Swiss education model, we highly value internationalism and multiculturalism—students from 100 nationalities currently attend our nine campuses that are spread out across the globe. The second element at the heart of Sommet's DNA is innovation. We believe we work for two main stakeholders. Firstly, students: our objective is to equip them with the best skills possible. Secondly, industry, with which we are in constant interaction about changing needs. This drives our innovation.

Sommet acquired its majority share of École Ducasse in 2019. What was the vision behind this acquisition?

We wanted to expand and broaden our education path beyond hospi-

tality management into culinary arts. It became apparent that partnering and joining forces with École Ducasse was the way forward because it is a globally recognized reference point for culinary and pastry arts education. We also believed in the same values: excellence, quality, and a balance between being rooted in tradition and knowledge while also being avant-garde. This alliance has enabled us to create interesting bonds, bridges and links between our three institutions. For example, Glion students can now spend two weeks of their first semester experiencing the culinary world of chef Alain Ducasse in our new Paris campus. This is the kind of innovation and extra value that we want to bring to our students.



Benoît-Etienne Domenget
CEO, Sommet Education Group

Sommet has campuses in Switzerland, the U.K., Spain, France and China. How does this help students and are you planning further expansion?

Our students have the ability to transfer from one campus to another to experience different cultures and environments. We are fortunate to have a very strong presence in Europe but also in Asia, thanks to our Shanghai campus. In addition, two years ago we started a partnership with a Thai group to help them build a campus in Bangkok. We are first movers in that respect: always focused on internationalization and innovation. Sommet remains interested in expanding but only if it brings value to our students and to the industry.

"Every year, hospitality players around the globe hire our students. They do this because they know they will gain the talents they need."

Benoît-Etienne Domenget, CEO, Sommet Education Group

Sommet is known for bringing excellent professionals to the labor market. What makes it stand out?

Every year, hospitality players around the globe hire our students. They do this because they know they will gain the talents they need. Education is something that you need to take very seriously and we are highly committed to our students. Our mission is to train the future leaders of this industry and we stick to what we are good at: giving students the optimum education path focused on excellence, quality, innovation, job placements and preparing them for the best professional opportunities.



Michel Rochat
CEO, EHL Group

Shaping the global hospitality sector

Switzerland drives international standards in hospitality and education

Earlier this year, QS World University Rankings named Switzerland's *École Hôtelière de Lausanne (EHL)* as the world's best hospitality and leisure management school yet again.

Established over 125 years ago, the institution is part of the EHL Group that also includes the Swiss School of Tourism and Hospitality in Passugg. EHL was the world's first school to be dedicated to the sector and it continues to be a global reference point for hospitality management education as a result of industry-leading teaching, research and a campus that contains the only Michelin-starred training restaurant. With over 25,000 alumni worldwide who are currently advancing the hospitality business, EHL offers students certificate, undergraduate and graduate programs, including a Master's in Global Hospitality that enables study at three leading universities in Lausanne, Houston and Hong Kong. "One reason for our success is Switzerland's dual education system. Our students spend two six-month periods in a four-year curriculum embedded in industry. That builds career-long relationships," says Michel Rochat, CEO of EHL Group.

"Another reason is that openness, innovation and entrepreneurship are part of our core values. We adapt 10-15 percent of our curricula every year to be closer to the industry's present and future needs, and try to foresee the next six years in advance," Rochat adds. He envisages significant innovation arising in hospitality as a result of the COVID-19 pandemic: "People will behave in a totally different, mindful and sustainable way. One area that should boom is domestic tourism and this is a wonderful opportunity for hoteliers to reconnect with their local customers."

EHL's culture of innovation has led it to be a pioneer in considering artificial intelligence in the hospitality industry, for instance, and in establishing an on-campus innovation village. Another example came in 2019, when together with the Canton of Vaud, the Swiss Federal Institute of Technology Lausanne and Nestlé, EHL launched the Swiss Food and Nutrition Valley initiative. This major global project will study how the world can design and produce food in a relevant, sustainable manner in the future. As a result of its entrepreneurial values, when coronavirus emerged EHL jumpstarted an already planned digitalization program and successfully transitioned all of its education to online extremely quickly. From September, it expects 80

percent of its work to have returned to a campus that will introduce safety measures and standards that set a benchmark for hospitality. "We are number one in the industry—it is our role to lead the way," explains Rochat.

To give more people the chance to experience the world's leading hospitality education, EHL is now investing in a fully digital campus for about one million online students worldwide at different levels of education. In 2021, it will launch a new physical campus as well—in Singapore. "We have many students from Asia who want to study at the best school but want to remain in their region. EHL's new campus brings Swiss hospitality excellence closer to Asian students' doorstep and will offer our full range of education," he says.

"EHL Campus in Singapore brings Swiss hospitality excellence closer to Asian students' doorstep and will offer our full range of education."
Michel Rochat, CEO, EHL Group

EHL is also expanding its partnerships with other top international institutions such as France's Kedge Business School, China Europe International Business School and the Hong Kong Polytechnic University, so that it can extend the range of degree and master's courses it offers. Additionally, it is considering opening up to new domains. "We have to listen to the industry. Today, we are focused on hospitality but tomorrow we could be focusing on other fields such as healthcare. In today's world, it makes sense to combine hospitality and health. The opportunities of the future are going to be very interesting," he enthuses.



Future hospitality

Michael Hartmann, Managing Director, EHL Swiss School of Tourism and Hospitality, Passugg, gives his view on educational needs after COVID-19

COVID-19 has impacted the world but health risks to guests and employees, concern for the wellbeing of all and travel restrictions have been particularly hard on hospitality, which, says the World Travel & Tourism Council, accounts for 10 percent of global gross domestic product and one in 10 jobs.

The UN World Tourism Organization estimates 75 million jobs are at risk worldwide due to a 20-30 percent decline in tourist flows. In Switzerland, the picture is not much better. According to the Swiss Tourism Federation, the sector faces massive sales losses, low capacity utilization throughout the country and the probability of bankruptcy is 23 percent. But due to its relevance, tourism will again be a main driver of the global economic upswing and recovery of labor markets. As hospitality education experts, we now have to ask ourselves: how do we see hospitality education after COVID-19 and what can we, as a hotel management school, learn from this crisis?

To answer the question of COVID-19's impact on us as education providers and what new skills will become relevant in hospitality, we have examined the most important triggers for increasing fragility on the one hand and changed social values—such as the increased need for security, solidarity, regionalism, resonance and authenticity—on the other. From this, we can derive measures to increase resilience and new skills needs. The basis for our considerations is the EHL Lausanne Report, which uses six scenarios to illustrate what the hospitality industry will look like in 2030 to stimulate a debate on risks and opportunities. Especially in these uncertain times, the report can contribute to a better understanding of what to expect and help prepare for the future.

The crisis has shown that some skills gaps exist. But what skills will hospitality professionals need to be optimally prepared for the future and which will be central to career prospects? In view of the measures being taken by countries worldwide that will lead to greater crisis resistance and resilience, new core competencies and skills will become relevant. But hospitality managers of the future must not only be able to apply these. Rather, those who can conceptually grasp new strategies and implement them in a professional and practice-oriented manner are in demand. Looking at changing societal values, a countermovement away from globalization toward localization and independence can be observed. Smart city initiatives are on the rise, using open data and the Internet of Things to optimize the flow of data, people and energy.






This movement is based on changes in travel behavior and increased security and sustainability needs. Smart hotels are, therefore, green hotels. Environmental issues, resource scarcity and the management of crises can be strong incentives for hotels to become autonomous and gain a competitive advantage over others. But autonomy requires digital networking and data transparency. The concept of smart tourism destinations uses the strong interference between high tech and high touch to improve the guest experience.

Educational institutions should take these developments into account in their curricula. We see a lot of potential, especially in customer experience management, facility management, business simulation and emotional intelligence, as well as in soft skills. It is to be expected that hospitality will develop back to its core: that is, hospitality itself. After restrictions and isolation,

"After the COVID-19 crisis, a new extended hospitality skill set will be required."
Michael Hartmann, Managing Director
EHL Swiss School of Tourism and Hospitality, Passugg

people long for relationships. In addition, confidence-building measures are becoming more important and hosts with empathy who angle their activities toward human needs and values will be in demand. In summary, the personal profile needed in future includes all competencies that contribute to a better understanding of oneself and one's counterpart, to acting flexibly and in a problem-solving manner, and to calmly coping with unusual situations. We, as a leading hotel management school, must create the environment to train and apply these new skills and develop them into deeply rooted competencies.

Discover EHL's Alpine gem

-  **EHL Passugg** is 1 of 3 campuses in the **EHL Group**
-  Currently educating **321 hospitality students** from over **20 nations** worldwide
-  **62% of students** at EHL Passugg complete their hospitality studies in German, **38%** in English
-  There are **3 different educational** programs to choose from at **EHL Passugg**
-  **EHL Passugg** employs **103** staff and faculty members at the moment

For SEG, a crisis is too good to waste

Swiss education institutes take an exceptionally challenging year as an opportunity

Many Swiss education institutions have boosted digitalization and e-learning during the pandemic. The most advanced have gone a step further and used the crisis as an opportunity to explore new avenues of innovation and research that will help their sectors adapt to a post-COVID environment.



Yong Shen
CEO
Swiss Education Group

Swiss Education Group (SEG) is one of them. The largest private hospitality and culinary arts educator in Switzerland, SEG operates five schools ranked among the best in the world: Swiss Hotel Management School, César Ritz Colleges Switzerland, Culinary Arts Academy Switzerland, Hotel Institute Montreux and IHTTI School of Hotel Management.

“In one research project, we are studying the effects of coronavirus on the hospitality industry in collaboration with Mandarin Oriental Hotel Group and leading Swiss industry partners. We are identifying best practices in crisis management, operations and recovery strategies, and the findings will be integrated into our academic programs,” says SEG’s CEO, Yong Shen. In another, SEG addressed the issue of how you assess culinary skills in a locked-down world. Its solution was to host a high-profile online global competition in which celebrity chefs judged entries based on an innovative mix of presentation, techniques and ingredient selection, rather than through the conventional sense of taste.

SEG is an ambassador for Swiss hospitality excellence, with both innovation and tradition being central tenets of its schools. “Each of our schools has its own areas of expertise. Together, they offer a broad range of undergraduate, postgraduate and professional programs ranging from traditional hospitality subjects to a wide selection of electives such as finance, human resources management, luxury management, innovation and entrepreneurship. These are mainly taught at six state-of-the-art campuses but our online solutions also allow us to reach working professionals who can’t physically attend,” Yong states. More than 6,000 people from 111 countries gain from personalized education at SEG’s campuses every year. But the group’s size means students have access to large shared support teams in areas like information technology, career and alumni services. “After graduation, they join SEG’s extensive global network of over 24,000 alumni and enjoy fantastic networking benefits,” adds the CEO.

The group has a reputation for furnishing students with the skills required in the international workplace today as well as the ones that will become important in the future. Staying at the forefront of technologies that are revolutionizing the sector is vital to this, asserts Yong. “Our education is constantly



refreshed and relevant. SEG’s one-to-one iPad program was the first in hospitality education, for instance. And Swiss Hotel Management School was the first Swiss institute of higher education and the first hotel management school in the world to receive the Apple Distinguished School recognition—an invitation-only honor for schools demonstrating innovation, leadership, educational excellence and a clear vision of an exemplary learning environment.”

Over 100 leading companies attend SEG’s biannual international recruitment forum, where they engage with students in more than 4,000 interviews for worldwide internships and career opportunities. Five years after graduating, 89 percent of its total alumni hold management positions or have created their own companies. Yong explains how SEG’s education remains in tune with industry needs: “Our faculty members typically come from industry, plus we have strong industry partnerships. We collaborate extensively with many leading hospitality and service businesses in Switzerland and around the world—and will increasingly be partnering with major national, regional and global brands going forward.”

The top Swiss educators cultivate cooperative agreements with international counterparts in order to expand the opportunities available to students. SEG is no exception—for example, it has long-standing partnerships with the U.K.’s University of Derby, and the U.S.’s Northwood University and Washington State University. This means its students graduate with internationally recognized qualifications and can easily transfer to British and American universities

“Our education is constantly refreshed and relevant. SEG’s one-to-one iPad program was the first in hospitality education, for instance.”

Yong Shen, CEO, Swiss Education Group

for further study. “We also have a wider international network of institutional relationships that enables exchanges, access to government scholarships and mutual academic credit recognition. SEG will continue to grow and deepen its academic partnerships, especially in regions such as China, India, South East Asia, the Middle East, Eastern Europe and Russia,” Yong mentions.

The group’s plans to extend its global footprint include opening new programs outside of Switzerland, he reveals. “I want to make sure our Swiss schools remain references of excellence. They will carry on looking at curricular innovation while guaranteeing that their level of care and services meet and exceed expectations. Our stakeholders, students and their families want superlative education, experiences and employability—this is exactly what SEG will continue to offer.”

The lessons learned in 2020

Leading advisory firms EY and PwC Switzerland cast critical eyes over major market trends post COVID-19

Innovation is a major trademark of Switzerland as clearly underlined by its frequent position at the head of global innovation indices. This success can mainly be attributed to substantial investment in research and development (R&D) in multiple sectors, with the country currently boasting the highest number of patents per capita in the world. This impressive track record and valuable mindset of innovation means Switzerland is well positioned to bounce back quickly and strongly from the COVID-19 crisis.

While the pandemic has significantly disrupted traditional business and commerce models, it has also accelerated transformation and digitalization, and revolutionized work organization and practices at scores of multinationals and thousands of small- and medium-sized enterprises. Ambitious operational changes that would normally take years to implement were introduced in just weeks, as companies embraced remote working and proactive measures to streamline and protect supply chains.

Switzerland’s public and private sectors’ response to the pandemic has attracted widespread praise from leading domestic and regional authorities, as well as high-profile international observers like audit and advisory giants EY and PwC. “The Swiss government’s reaction during this crisis has been best-in-class,” says Stefan Rösch, country managing partner at EY, Switzerland. “The speed and efficiency with which the government has supported businesses is top-notch, although it has come at a cost, but this is the only way to deal with a situation of such scale.

“This crisis is an acceleration of change: not that the focus point or the drivers will change, but things will appear faster and happen speedily. I hope that we will not go back to the ‘old normal’ but take these key learnings into the future. Digitalization, technology transformation and supply chains will be important focus areas and mission critical elements going forward. Now that we are beyond the urgency, we see a shift from the now to the next and beyond. Businesses should adopt a long-term approach again, and start having a dialogue on how their target operating model needs to change based on the lessons learned out of this crisis.”

Switzerland adopted the strategy of major spending in R&D and innovation many years ago, as a result of which its environment flourishes with world-class universities, dynamic clusters and performance startup ecosystems. The Swiss population has a strong entrepreneurial mindset, while the international workforce in Switzerland is an additional strength, Rösch explains. “We are a high-cost country so, ultimately, the only way we can succeed is by focusing on innovation, R&D and quality to develop leading-edge solutions that justify their prices. We need to focus on high value-added sectors.”

According to Andreas Staubli, CEO of PwC Switzerland, the Swiss government’s coordinated and rigorous response to the pandemic was such a success as it comprised strong support measures for the economy that were introduced in a very short time, a different approach to that of other countries.

He highlights the COVID-19 credit scheme, which was offered by the banking system and fully guaranteed by the Swiss government, as an example of one hugely successful initiative.

“The credit scheme has been supporting numerous businesses, offering a unique guarantee for them to get funds within one day. In some cases, it was even possible to get funds in one hour, which is quite impressive. This obviously helped the business community to maintain liquidity and therefore fulfill their obligations,” he states. “Overall, the responsiveness and commitment of the Swiss authorities is really remarkable.

Measures were applied immediately and extended generously. There was a common understanding from both the business community and society in Switzerland that we need to pull through this crisis. The Swiss government took additional measures to help small businesses specifically. This help was not a given from the start, but knowing how vital this is for the recovery of the entire economy, it was a critical success factor. Currently, the focus is to ensure that the right economic and regulatory framework is provided to the business community to succeed after the crisis.”

As for Switzerland’s prospects post COVID-19, Staubli says the country must lean on its capacities, infrastructure and strong powers of innovation: “Switzerland must play a key role in the launch of new products, new ways of building new technologies and manufacturing of new products that are more sustainable,” he explains. “It needs new business concepts that lead the way on a sustainability basis, on a business basis and on a global basis.”



Stefan Rösch
Country Managing Partner
EY Switzerland

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BUSINESS SCHOOL LAUSANNE **BSL**

Banks shield the economy

Toughened since 2008, the banking sector steps in to rescue businesses

Leaning on their spotless reputation, banks take the lion's share of the Swiss economy. Today, the country's 246 banks manage assets worth \$7.3 trillion and directly employ 144,000 people, while their annual value creation amounts to \$35 billion or 5 percent of gross domestic product.

The sector suffered badly in the wake of 2008's financial crisis but has shown remarkable resilience during this pandemic, with S&P Global Ratings anticipating "few if any negative rating actions for banks in Switzerland." The agency puts the banks' renewed robustness down to clean balance sheets, high capitalization and conservative regulatory standards. The CEO of the Swiss Bankers Association (SBA), Jörg Gasser, agrees: "Their financial stability has increased sharply since 2008; they are more agile, much stronger and rock solid."

These attributes have allowed the banking sector to support and protect much of the rest of the country's economy during the current crisis—particularly Switzerland's small- and medium-sized businesses (SMEs). "In March, the Minister of Finance and our most important banks sat virtually around a table to discuss the issues facing SMEs—they quickly realized the main problem was liquidity," explains Gasser. Less than two weeks later, Switzerland

started implementing an incredibly fast, efficient and interest-free SME loan scheme worth a guaranteed \$42 billion. Coordinated by the SBA and with support from government, central bank and regulator, the participating banks put in unprecedented efforts to execute the simple loan process, aiming to provide clients with access to funding within 30 minutes.

Switzerland's welded business community was a factor in this program's success, notes Gasser. "All the key banking stakeholders know each other and can manage problems in a straightforward way. That was—and still is—a large plus during the COVID-19 crisis." Another factor was the leveraging of technologies such as robotics, with one bank reporting that its six credit robots were processing 24,000 loan applications every 24 hours.

The pandemic has acted as a broad catalyst for digitalization in the sector, as banks shifted practices to meet their clients' increasing need or desire for digital services. One of Switzerland's biggest banks UBS, for example, has seen the digital opening of accounts rise more than 70 percent this year and the use of mobile payment apps increase by over 80 percent. This move was made relatively easily as the industry was already highly advanced in innovative technologies. "Over the last ten years, Swiss banks have focused on adapting their business models, and pushed digital and technological developments. They are very competitive and had seen emerging pressure from new fintech firms. From this point of view, they were very well prepared," Gasser comments. By becoming early adopters of fintech and regtech for client services and internal processes, the country has developed a thriving ecosystem for the technologies, with the canton of Zug now popularly known as Cryptovalley.

Switzerland is also a global hub for investment management and the world leader in cross-border wealth management, with a market share of 25 percent representing assets of \$2.4 trillion. That's clearly ahead of the second- and third-placed international financial centers, Hong Kong and Singapore. When

"Over the last ten years, Swiss banks have focused on adapting their business models, and pushed digital and technological developments. They are very competitive."

Jörg Gasser, CEO, Swiss Bankers Association

working with these worldwide clients, full compliance with all international standards is vital, stresses Gasser. "Centers that are in any way perceived as being non-compliant with regard to money laundering, corruption or assets that are not properly taxed belong to the past."

Now, the country is on course to becoming a leading international market for sustainable finance. It has long been a pioneer in this area and is at the forefront when it comes to sustainable wealth management—as illustrated by the Geneva-based multinational private bank Pictet Group. "We started investing in environment-oriented companies in the late 1990s. Our longest standing strategy is over 20 years old and has generated almost twice the total return of the global world equity index," says senior partner Renaud de Planta. His advice to investors during the pandemic? "Certain companies are going to grow in the current environment. Healthcare, technology and environmental sectors in particular offer opportunities and have enormous potential."



Jörg Gasser
CEO
Swiss Bankers
Association

A turbocharged transformation

Banks quickly adapt to COVID to continue providing best service

Credit Suisse is one of Switzerland's two largest banks and a leading global provider of integrated financial services with operations in about 50 countries. Group CEO, Thomas Gottstein, looks at how banks have taken on the challenge of the pandemic.

One big difference between this crisis and the financial crisis of 2008 is that this time banks are part of the solution and not the root of the problem. Credit Suisse entered 2020 well capitalized and with a lower risk profile, having responded to the last crisis with a restructuring program, which drew to a close at the end of 2018. This allowed us to continue delivering on our core function: providing advice and investment solutions to our clients, while also supporting the health of capital markets and innovating for corporates in need of financing. Our 48,500 employees rose to the occasion, giving businesses and entrepreneurs the greatest chance to return to growth and hiring, and enabling global investors by providing them with quality analysis and advice on allocation of capital. Our financial results confirm that: our first half net profit was the highest in ten years and during the pandemic our credit rating was affirmed by a major agency, which cited our resilience and prudent risk

"One big difference between this crisis and the financial crisis of 2008 is that this time banks are part of the solution and not the root of the problem."

Thomas Gottstein, Group CEO, Credit Suisse

management. Swiss-based banks like Credit Suisse are known for security, and the stability of the Swiss economy, political system and banking platform is an important asset for us, especially in turbulent times. Switzerland led the way in getting loan payments and other stimulus in the hands of the private sector. We took a leading role in helping establish the loan-guarantee initiative for small- and medium-sized businesses and, through its duration, Credit Suisse extended \$3.6 (CHF3.3) billion in loans out of the roughly \$19 (CHF17) billion program. In keeping with our community focus, any net profit from these loans will be donated to projects supporting Swiss companies in difficulty.

Have any long-term trends emerged in banking as a result of this crisis? Credit Suisse tailors individual solutions and responds to how clients want to interact with us. Our industry is being impacted by key secular trends including the acceleration of digitalization, the importance of sustainability, the growth of private markets and reshaping of industries driving financing needs. Many of these trends have only been accentuated by the COVID-19 pandemic. At the end of July, alongside our first-half results, we took the opportunity to optimize and align our business model to drive further upside and provide resilience to navigate less constructive conditions. We took four significant steps: creating a global investment bank, uniting our compliance and risk functions, the creation of a new sustainability, research and investment solutions (SRI)



Credit Suisse's elegant headquarters in Paradeplatz, Zurich

function, and to merge Neue Aargauer Bank into our Swiss business to position it to meet new clients' needs and drive further growth. Meanwhile, the ultra-low and even negative interest rate environment will likely persist given the severity of the global recession. That may pose challenges for some but Swiss banks have lived with this reality for years and have already made adjustments.

What is the thinking behind your new sustainability unit?

Sustainability is a mission for us as a global corporation and as a bank whose clients are hungry for investment opportunities in this growing field. With our new SRI function, we aim to be a leader in this field. Led by SRI CEO Lydie Hudson, who is a member of our 11-strong executive board, it also benefits from a named board of directors' sustainability leader in Iris Bohnet, and designated sustainability leaders in every division and function. We have made a series of new commitments and restrictions to propel our progress in this regard. The pandemic is a stark reminder that sustainability is a requirement for growth and prosperity, not an impediment. Financial performance need not suffer from this focus.

What does innovation mean for Credit Suisse?

It's in our DNA. Credit Suisse was founded in 1856 and got its start financing Switzerland's railway. Our founder spearheaded construction of the famous Gotthard Tunnel that connected central and southern Europe through Switzerland—a technological marvel with lasting economic and societal benefits. Advances in big data, blockchain and cloud computing are an evolution of this. In September we announced the launch of 'CSX', a digital banking offering enabling our Swiss clients to conduct their daily banking in a swift, straightforward and convenient manner using an app, supported by a new concept for branches connecting the digital and the personal. This is a revolutionary move in our home market.

As the new group CEO, what are your ambitions for the future?

Our ambition is to be the leading bank for entrepreneurs worldwide. Our recent restructuring strengthened our world-class wealth management platform and maximizes our investment banking capabilities. It also set the foundation for long-term business growth at home in Switzerland and other developed economies such as the U.K. and U.S., as well as emerging economies in Asia, Latin America and Africa.



Thomas Gottstein
Group CEO
Credit Suisse



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Nurturing a trend of real innovation

Agility, flexibility and leanness are key skills companies will need to flourish in the post-COVID-19 world

While the sheer scale of the impact of the coronavirus pandemic on the global economy is unlike any event in recent memory, the fact that many countries have already overcome the initial outbreak—in medical terms at least—bodes well for Switzerland and its high innovation reputation. The country's strong innovation ecosystem is perfectly suited to the fostering and nurturing of new ideas that could change the way many industries or administrations function, creating opportunities for Swiss companies and institutions to pioneer new technologies and approaches.

“Companies need to be agile, flexible and lean enough to cope with challenging situations; but it's important for Swiss businesses to focus on becoming more resilient,” states Andreas Staubli, CEO of audit and advisory company PwC Switzerland. “This is critical for businesses today and also tomorrow, for future crisis, because there will be other crises linked to climate change or biodiversity. That's why building a higher resilience is key.

“Many companies are still struggling with the challenges associated with this pandemic, but also trying to identify where the opportunities could be.

Many are trying to focus on their core capabilities and trying to take the opportunities that the market offers for consolidation. They are also looking at new working models. For example, everybody had to digitalize much quicker than ever before; work has become more virtual and this offers new opportunities.”

The senior executive continues: “Our culture of innovation needs to be nurtured even more than before. Governments should play a key role to further support that and should continue to invest. “I'm convinced the whole topic of sustainability or ESG—environmental, social and governance—will gain importance again very quickly. It will be a key differentiator for businesses. From a financial services perspective, from an investment perspective, it will



Andreas Staubli
CEO
PwC Switzerland

“Switzerland's culture of innovation needs nurturing even more than before. Governments should play a key role to further support that and should continue to invest.”

Andreas Staubli, CEO, PwC Switzerland

be crucial to provide direction and guidance for sustainable investment. Switzerland can, and should, play a leading role in sustainability, because it has a strong financing sector and is becoming a growing, sustainable finance hub.”



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The future will be even more digital

As the digitalization drive gathers pace, enterprises are reaping the benefits of investment in technology

Switzerland's digital transformation accelerated strongly during the national lockdown as companies and consumers switched to remote working in their droves. This involved utilizing online solutions to securely log in to company systems and networks to perform employment-related activities. In addition, technology allowed the completion of tasks related to banking, shopping and communication with family and friends, meaning minimal disruption from the tight restrictions on movement.

According to the respected Swiss Finance + Technology Association, the COVID-19 crisis has intensified the widespread use of state-of-the-art software and hardware, and helped the banking and asset management sector thrive amid the unprecedented uncertainty. At an online roundtable in late April, panelists highlighted the impact on wealhtech from the lockdown measures had been relatively minimal, with the crisis rapidly opening up cutting-edge technology for better asset management to a larger audience.

“The COVID-19 crisis has clearly demonstrated the importance of digitalization for business, public administrations and society, said Ivo Furrer, president of digitalswitzerland, a multi-stakeholder initiative created from the shared vision of some 150 members to strengthen Switzerland's position as a leading innovation hub. “It's obvious that we have to strengthen our digital infrastructure, further digitalize business process, invest in digital innovation and develop new digital business models that accelerate our transition to a digital economy and society.”

Earlier this year in cooperation with Germany's Wissensfabrik—an organization dedicated to the development of knowledge—digitalswitzerland developed a comprehensive white paper outlining five ways digital transformation can be continued. It focuses on the potential of digital infrastructure, idea spaces, institutions of the knowledge society, new interfaces and new forms of cooperation. Investment in state-of-the-art infrastructure to improve surfing speed in cities, towns and rural areas is one key target: “An excellent digital infrastructure protects us from viruses, a volatile economy and infodemics. It's part of our social immune system,” explain the authors.

Such demands for a comprehensive, cohesive and structured approach to digitalization are echoed by other industry leaders, who recognize the importance of a robust digital infrastructure spine. “Even before COVID-19, 2010-2020 was a decade of digital transformation, but recent events are making it more prominent than ever before, states Max Chuard, CEO of Temenos, an award-winning international banking software solutions provider, headquartered in Geneva.

“We've been investing massively in our technology to ensure that we can ultimately digitalize banks of all sizes and within any sector of the banking industry. We've done that quite successfully and 3,000 banks are now using our system across 150 countries. Our success over the past 27 years is ultimately linked to technology. According to its CEO, Temenos sets aside at least 20 percent of annual turnover for research and development spending,

meaning more than \$1 billion will be directed to the development of new technologies in the next few years. “As the world's number one banking software company, Temenos is very excited about transforming this industry, because it's an industry that is ultimately still, by and large, using legacy technology,” Chuard adds. “The COVID-19 crisis has shown the banking industry needs to be able to fully digitize to sustainably grow and thrive.”

As well as software providers, the widespread switch to remote working has also benefited computer hardware and accessories firms as employees buy new monitors, keyboard, webcams and mice for their home workstations. People have also invested in new video game consoles and games as a way to cope with spending more time indoors during lockdown.

“The more time people spend at home, the more they need a little bit of an escape,” says Bracken Darrell, CEO of Logitech, a successful Swiss hardware manufacturer selling music, gaming, video and computing equipment. “Video games are a great way to socialize, stay connected, even though you're very far apart from people; it really hit most of our major categories in a positive way. It accelerated the trends we were already building our business on. We were well aware of these trends such as remote working, distance learning, distance medicine, playing video games and personal broadcasting as growth areas. We viewed all those as secular trends that were going to keep going for decades; even though there has been a big acceleration here, I don't see any reason why it won't continue.”



Max Chuard
CEO
Temenos



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Swiss firms push for sustainability

Companies proudly spearhead the global fight against climate change

Switzerland's impressive natural resources mean measures to protect and preserve its environmental treasures are at the heart of many federal and regional government sustainability policies. The country is a leading player in global initiatives for fighting climate change and projects designed to reduce mankind's impact on the planet. "Sustainable development is a tenet to which the Swiss confederation and the cantons are bound," the federal government says. "The cantons strive for a balanced relationship between nature and its ability to renew itself on the one hand, and the demands placed on it by the human race, on the other."

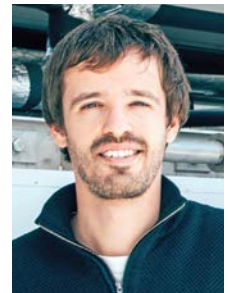
Reversing climate change is the core aim of Swiss technology company Climeworks, a developer, builder and operator of direct air capture machines. Its cutting-edge technology captures carbon dioxide (CO₂) directly from the air, before either recycling it by using it as a raw material, or completely removing from the atmosphere by safely storing it permanently underground. According to the firm, by 2050 around 10 billion metric tons per year of CO₂ will need to be removed from the air, with the company



Close-up on Climeworks' direct air capture plant

eager to scale up its direct air capture technology to help achieve this goal.

"Our machines consist of modular CO₂ collectors that can be stacked to build machines of any size," explains Jan Wurzbacher, co-founder and co-CEO of Climeworks. "Direct air capture machines are powered solely by renewable energy or energy from waste. Gray emissions are below 10 percent, which means that out of every 100 metric tons of CO₂ that our machines capture from the air, at least 90 are permanently removed and only up to 10 metric tons are re-emitted.



Jan Wurzbacher
Co-Founder and Co-CEO, Climeworks

"Climeworks' purpose is to empower people to reverse climate change. We are the first company worldwide that is really enabling everyone to do what science tells us we need to do in order to eliminate global warming, which is to actively remove CO₂ from the atmosphere and store it safely. We are partnering with companies like Iceland's Reykjavik Energy, and more specifically with their subsidiary Carbfix, and together we are developing this methodology for safely storing CO₂."

Wurzbacher, who is based at the company's headquarters in Zurich, says private individuals can also benefit from the technology by taking out subscriptions with Climeworks to remove CO₂ from the air in their name, so neutralizing parts of the individual's carbon footprint. "Anyone can go to our website and purchase a subscription for a certain amount of CO₂ removal," he adds. "The subscription fee is used to finance the construction

"We are the first company in the world to actively remove carbon dioxide from the atmosphere and store it safely. Our purpose is to empower people to reverse climate change."

Jan Wurzbacher, Co-Founder and Co-CEO, Climeworks

and operation of our plants. Our vision is to inspire 1 billion people to remove CO₂ from the air. It's really important to get everyone on board with this issue and enable people to take action. Humans need to work, travel, have fun and we should look at it positively—not just looking at what we should stop doing, but at what we can start doing to help. Switzerland is among the first countries to have a carbon-negative goal.

"With our technical equipment we can achieve the net-zero target. Climate change is a big challenge, yet we really can do something about it. We can accomplish a lot of things. There's not one silver bullet, but many solutions, and we are now moving forward with ours."



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