

September 2018

# startup

20  
18

A magazine from Handelszeitung

WHY FOUNDERS  
RELY ON  
**DEEP TECH**

BEEKEEPER CEO  
**CRISTIAN  
GROSSMANN**  
KEEPS UP THE PACE

**TOP  
100**

**THE BEST  
SWISS  
STARTUPS**

**Pascal Koenig**

Head of Ava takes  
his team to first place  
for the second time



SWISS STARTUP AWARD  
2018



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emissions from the air.”**

Christoph Gebald and Jan Wurzbacher,  
founder team, Co-CEOs of Climeworks AG

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## GROWTH CAPITAL (FINALLY) EXPLODES IN SWITZERLAND

**T**aking top place in the 2018 ranking for the second consecutive year, Ava illustrates the good health of growth capital in Switzerland, with its CHF 30 million raised last June. In recent months, CHF 270 million in cumulative funds have been raised by just eight Venturelab-supported startups – Ava, Andrew Alliance, Climeworks, GetYourGuide, InSphero, Kandou, Neurimmune und Scandit. It wouldn't be surprising if 2018 were a record year in terms of investment!

With startup financing rounds of CHF 2 million or CHF 3 million by now commonplace, it is now the turn of growth capital to explode in Switzerland. We are seeing increasing interest from both Swiss and international investors, from Silicon Valley to China – a winning combination for startups with global ambitions – as well as from family firms and wealthy private individuals, who increasingly recognize the potential of Swiss startups. We are talking about CHF 1 billion in growth funding that will be available by 2019.

With 47 recently formed firms nominated this year, and the top 10 places occupied by scale-ups – the term now used to describe high-growth startups – the TOP 100 offers a panorama of the full range of startups, enabling discerning investors to make their mark in the phase that interests them, from start-up to growth. Expect to discover exciting investment prospects not only in the ranking laid out in this magazine, but also during the new TOP 100 events that will be held in Geneva in September and Lausanne in October, then throughout the year.

These developments are excellent news for startups. While we don't suggest that financing has become easy – startups hoping to benefit from the wealth of financing available funds must show hard results, now as much as ever – the arrival of capital does make it possible to compete internationally; to attract the necessary talent and invest in the commercial expansion that is so essential to the creation of future captains of industry.

The opportunity is open for Swiss startups to demonstrate this essential part of our culture: the secret is in the execution.



**Beat Schillig**, founder and president of Venturelab; **Stefan Steiner**, co-managing director of Venturelab; **Jordi Montserrat**, Venturelab co-founder and managing partner.



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**Three funding rounds in four years: Diego Gabriel Dupouy, Ata Tuna Ciftlik and Déborah Heintze of Lunaphore Technologies**

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Dorina Thiess and Sascha Bührlé of Piavita.**

### IMPRINT

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# WE WOULD LIKE TO CONGRATULATE THE **TOP 100** SWISS START-UPS AND WISH THEM EVERY SUCCESS!

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**Andreas Gerber,**  
Head of SME  
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President of the  
Swiss Venture  
Club

'The TOP 100 Startups demonstrates once again that the Swiss SME landscape is brimming with innovation and exemplary entrepreneurial spirit. And not only that, but it has a considerable impact abroad, as reflected by the high level of interest in company relocation here and the presence of international investors in Switzerland. The TOP 100 awards play an important role in promoting Switzerland as a business hub.'



**Thomas Pai,**  
Head Corporate  
Ventures &  
Development,  
Swiss Prime Site

'The impressive innovation of Swiss start-ups has earned them a place on the international stage, while the TOP 100 Startups serves as a platform on which the founders' outstanding achievements can be recognised and appreciated. These courageous entrepreneurs inspire ambitious innovators and show them what can be achieved – thus ensuring that Switzerland's innovative, entrepreneurial spirit continues.'

# HOW CAN THE TOP 100 SWISS STARTUPS CHANGE THE WORLD?



**Nicolas Bürer,**  
Managing Director  
digitalswitzerland

'Each year, the TOP 100 Startups presents the megatrends and the promising new players in the Swiss ecosystem, which is profoundly important in maintaining the momentum in our country – and around the world!'



**Maurice Pedergana,**  
General  
Secretary, SECA

'The TOP 100 Startups helps Switzerland to continue to position itself as the most innovative country in the world, creating new jobs with high added value. Both domestic and international investors value the attractive technology start-ups highly.'



Winner of the public prize: Smallpdf CEO Manuel Stofer (third from left) and his team.

TOP 100 STARTUPS 2018

THE CONCEPT

A hundred experts have selected the 100 startups with the greatest potential. These proven pros are true insiders of the startup scene. Each expert chose 10 startups, with first place receiving 10 points and 10th place receiving one point. The companies with the most points made it into the TOP 100. The ranking list was launched in 2011 by Beat Schillig (top) and Jordi Montserrat (below) from the IFJ Institut für Jungunternehmen.

Together, they have developed the national training program Venturelab and the international program Venture Leaders. They also manage the Venture Kick initiative, which provides spin-offs from Swiss universities with seed capital. Stefan Steiner, co-managing director of Venturelab, is project manager. The ranking list's co-initiator and implementation partner is JNB Journalistenbüro. Support for the project is provided by Credit Suisse, SVC, Swiss Prime Site, Swiss Private Equity & Corporate Finance Association (SECA), digitalswitzerland and the Gebert Rüt Stiftung. Handelszeitung acts as media partner, with PME Magazine for western Switzerland and www.startup.ch for the English and Chinese editions.



# SMALLPDF IS REALLY BIG

This year sees the eighth edition of the TOP 100 Swiss Startups award. And, for the second time, a public vote has also been held.

Every year, more than 800 innovative and promising startups founded in the last five years qualify for selection for the TOP 100 Startup award. All these candidates are listed on the [www.startup.ch](http://www.startup.ch) platform, which is also used for the public vote.

Zurich company Smallpdf, which was founded in 2013, took first place. Its online platform for simple PDF editing is already one of the most visited websites in the world.

'And we are continuing to grow fast,' says co-founder Manuel Stofer. The PDF software is now used by more than 15 million customers a month. Every day, more than a million PDFs are split,

merged, compressed or enlarged with the 17 different PDF tools.

'In the last five years, thanks to our simple design, we have set new standards for customers in what is an obscure industry,' says Stofer. The founders managed to set up the company without venture capital from investors, quickly gaining a foothold in the market.

1. **SMALLPDF, ZÜRICH, ONLINE**
2. **VISION TECHNOLOGIES, LAUSANNE, SOFTWARE**
3. **SKINOW GMBH, REICHENBACH (BE), ONLINE**
4. **LAMBDA HEALTH SYSTEM, YVERDON (VD), MEDTECH**
5. **KOMED HEALTH, ZÜRICH, SOFTWARE**

ALUMNI

## DESIGNED FOR GROWTH

Startups in the TOP 100 Swiss Startup award must be no more than five years old, which is why 16 companies from last year's ranking list – and still on a growth path – have dropped off. These include L.E.S.S. (rank 2), MindMaze (rank 5), Beekeeper (rank 8), Amal Therapeutics (rank 14) and Teralytics (rank 15). These companies still face enormous challenges, as shown by the rapidly expanding online platform Beekeeper. CEO Christian Grossmann explains how he has designed his company for growth on page 54.

WWW.STARTUPTICKER.CH

## THE BEST STARTUP NEWS

The Swiss startup scene is booming, as testified by startupticker.ch on its web and app platforms. Its newsletter informs the community about the week's highlights and the forthcoming deadlines. The ticker also publishes a list of investors and directories of research funding and loans, jobs at start-ups and awards. Registered subscribers can also sign up for the award alert, which notifies them about tenders, application deadlines and award ceremonies.

# COUNTER CYCLICAL

Women's constant companion:  
Ava's data tracker is due to become  
a driver of personalised medicine.

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**AVA AG, ZURICH**

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**SECTOR:** MEDTECH

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**FOUNDED:** 2014

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**EMPLOYEES:** 85

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**CONTACT:** [WWW.AVAWOMEN.COM](http://WWW.AVAWOMEN.COM)

# O

ne group is preparing a clinical study in Zurich-Wiedikon, another is planning a marketing campaign in San Francisco, a third group is programming self-learning algorithms in Belgrade, and someone is furnishing the office that has just opened in Hong Kong. But regardless of where the 85 employees of Zurich tech start-up Ava are at any one time, it's all about a coin-sized tracker and big data.

Ava's multisensor bracelet sits on the wrist and records nine vital functions: from resting pulse rate to perfusion to heat loss. The customer's data is sent via an app to a platform where software compares it with physiological models of the menstrual cycle, detects which phase of the cycle the woman is in, and sends its analysis back to her smartphone.

'Currently, our most important target group is women who have not yet managed to have children,' explains Pascal Koenig, CEO and one of the four founders of Ava. The Ava app cannot guarantee a pregnancy, but there are solid statistics showing that good timing doubles the chance of conception.

### **Many customers are in the US**

The tracker and app can be bought in Ava's webshop and cost about CHF 250 each. No specific sales or growth figures were provided by Koenig, but we do know that the majority of customers live in the US, where Ava has invested a seven-digit sum in online marketing, blogs, PR articles and YouTube videos since launching in summer 2016. ▶



**Back on top: The Ava team with  
Lea von Bidder (left), Philipp Tholen,  
Pascal Koenig, Sandra Erismann and  
Peter Stein**

## 4 questions for Pascal Koenig

### My last holiday?

Christmas in Kenya.

### Who or what inspires me?

Courageous people.

### My biggest mistake?

Not learning Chinese.

### My last mobile-free day? Must have been a couple of years ago...

► Cycle apps are popular: market studies show that about 150 million women around the globe put their trust in these digital tools, generating the raw material for what's known as data-driven women's healthcare. And Ava plans to become the global market leader.

'We have the advantage that our sensors sit on the wrist, a normal place,' explains Koenig. The second biggest plus is the variety of vital data that the Ava tracker collects. The data can be used not only to calculate the fertile days, but also to find out when a woman's fertility is at its lowest.

This makes the Ava app an alternative to the pill or condom. 'At the moment,' says Koenig, 'we are setting up a clinical study on the Pearl Index.' This provides information about the statistical safety of contraceptive methods. Ava has appointed an experienced manager from pharma group Bayer as chief medical officer to carry out the study.

But the tracker data can be used for more than just family planning: it can also be used for treating gynaecological complaints. For example, one in 10 women suffer complications dur-

ing pregnancy. Toxaemia in pregnancy can lead to a two-week stay in hospital. 'We are attempting to identify problems at an early stage and thereby optimise treatment,' says Koenig.

And then there's the menopause: the gynaecological profession still finds it difficult to assess and treat the complaints described by women. Given the large number of physiological data records it collects, the wristband could one day provide indicators for treatment, which is why Ava is now setting up a global medical network. One team is negotiating with the US Food and Drug Administration (FDA), while another is contacting health insurers, gynecologists and women's clinics in Europe, the US and Asia.

'Together with our customers, we can provide the health-care sector with data of a previously unknown quality,' says Koenig, a former McKinsey advisor. And conversely a second sales channel, alongside the webshop, is opening up for Ava. 'Through cooperation with gynecologists and hospitals, we would like to set up in the B2B sector,' explains Koenig.

However, Ava has – to date at least – ignored partnerships with major medtech companies, since, according to Koenig, 'as a startup, we can be more agile by implementing disruptive innovations'.

### Experienced team of founders

A graduate from the University of St. Gallen, the 43-year-old speaks from experience. He has been active at the interface of IT and medtech for 15 years, has established two startups and knows the market for wearable healthcare products from the inside. 'We are now benefiting from the fact that all four founders had relevant experience as entrepreneurs or medtech experts at the launch of Ava.'

Investors trust the team: they have just injected USD 30 million of growth capital in a second funding round. The money will be used for further development of the business model and marketing. Koenig and his colleagues set up production of the tracker and established the platform in order that output could be ramped up quickly, and that is now paying off. The platform is cloud-based. The tracker is produced by a partner in Valencia.

This means resources are free for customer service. Ava is currently building an additional support centre in Manila. As the Philippines are in a different time zone to both Zurich and San Francisco, customers worldwide are guaranteed round-the-clock service. 'We are planning everything so that it can still function if it is 10 times bigger,' explains Koenig. Welcome to the world of Ava.

Flashback: Almost five years ago, there was a memorable meeting in a Zurich restaurant. As well as Pascal Koenig, those present comprised entrepreneur Lea von Bidder and ETH engineers Philipp Tholen and Peter Stein. They chatted about pregnancy and children, and later discussed modern data-tracking technologies. Why had no one come up with the idea of recording the physiological parameters of the female cycle from a woman's wrist?

The four are now directors of a company that has good prospects of becoming a leading light in the Swiss medtech industry. For the second year in succession, Ava was voted most attractive start-up in Switzerland. ●

# 'Our data is of a quality never before seen.'

Pascal Koenig, CEO and co-founder of Ava

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# IN THE DRIVING SEAT

When it comes to the autonomous vehicle revolution, EPFL spin-off Bestmile is on the front line. The product: software for fleet management.

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**BESTMILE SA, LAUSANNE**

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**SECTOR:** SOFTWARE

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**FOUNDED:** 2014

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**EMPLOYEES:** 60

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**HEADQUARTERS:** LAUSANNE

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**CONTACT:** WWW.BESTMILE.COM

## 4 questions for Raphaël Gindrat

### My last holiday?

Cycling in Spain in April.

### Who or what inspires me?

Helping to develop a technology that influences how people live in the future.

### My biggest mistake?

I should have employed really experienced people much earlier.

### My last mobile-free day?

Three years ago on holiday. My colleagues definitely started worrying.

**B**eing in the right place at the right time! These words must spin in Raphaël Gindrat's head when he looks through the applications for the 10 positions he needs to fill by the end of the year.

'We have our pick of exceptionally qualified applicants,' says Bestmile's 30-year-old CEO. 'We are one of the most exciting employers in Europe for ambitious software engineers in the field of autonomous vehicles.'

The interest from these crack IT engineers has its reasons, since self-driving or autonomous vehicles are heralding the next technical revolution – comparable in its impact on our everyday lives with the advent of the internet 20 years ago. 'The internet in actual, not virtual life,' stresses Gindrat.

A major upheaval in mobility is knocking at the door. The large car makers are planning to launch mass-market autonomous vehicles as early as 2020, although it's not the traditional car manufacturers leading the way but Waymo, a subsidiary of Google parent Alphabet. The company intends to launch driverless robot taxis in Phoenix, Arizona, by the end of this year.

The impending market launch of self-driving vehicles is the moment of truth for the Lausanne start-up. 'The window of opportunity is small. Within the next two years, we need to partner with the various players driving this development forward at a fast pace,' says Gindrat, who, like Bestmile co-founder Anne Mellano, studied civil engineering. The pair had their first experience of autonomous vehicles when they were still students. They were part of an ETH Lausanne team that tested one of the first of these vehicles in Europe.

The software company, which the pair founded in 2014, focuses on fleet management rather than, for example, on steering self-driving cars. In simple terms, Bestmile's Mobility Service Platform takes over the job that dispatchers in a taxi firm carry out when deciding which car goes where and when, and which passengers it picks up. The great potential of Bestmile's cloud-based solution is that it



**Fleet underway: Anne Mellano and Raphaël Gindrat**

is flexible, can be extended as required and not only includes fleet operators but also, via an app, their customers.

### **Mobility on demand**

Network, manage and optimise. These are the key terms of combined mobility and, in the opinion of Bestmile's founders, the future. And as in the future we will rent cars from mobility providers rather than own them, we need intelligent, automated fleet management.

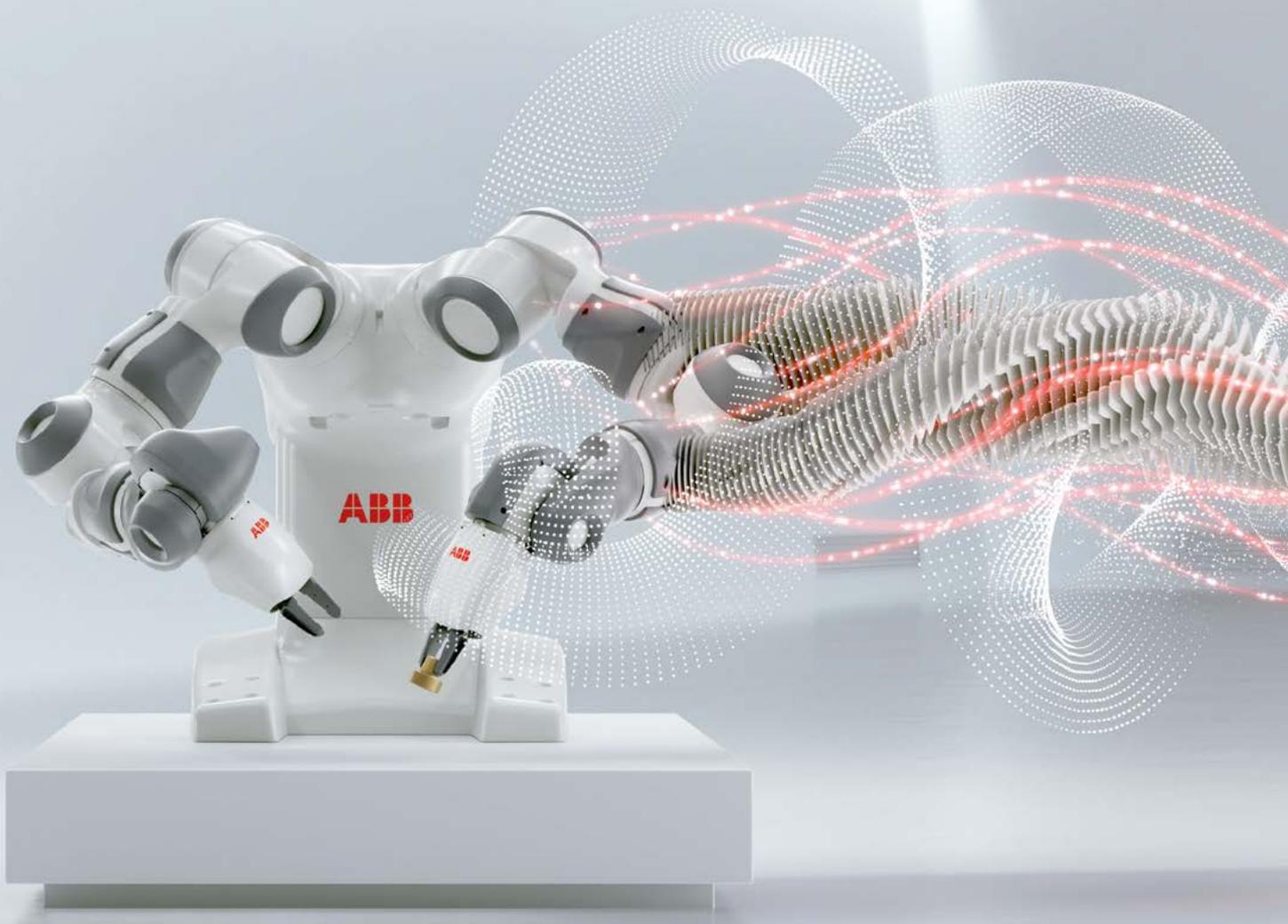
Bestmile's success seems to have justified its founders' vision: the startup already has 60 employees and during the last funding round secured USD 11 million of new venture capital. According to the World Economic Forum, the Lausanne company is one of the 61 most promising technology pioneers in 2018.

Interest in collaborating with Bestmile is growing and growing. From small-scale pilots, such as PostAuto's self-

driving SmartShuttle in the old town of Sion, which has been operating since 2016, the startup is now partnering with companies such as transport giant RATP, which carries more than 3 billion passengers a year in the greater Paris area.

But Bestmile's real ambitions lie on the other side of the Atlantic. 'Above all, we need to become visible in the US,' explains CEO Raphaël Gindrat. So it's only logical that the Lausanne company has set up a branch in San Francisco. The 15 employees in the US handle marketing and sales, since the US, particularly California, is where the largest trials with self-driving cars are taking place.

That's not only because the new technology will first gain a foothold in bottlenecked metropolitan areas like Los Angeles – the mild Californian climate is also a positive for self-driving vehicles. Cars of the future will have to deal with the vagaries of the weather; snow on their sensors simply puts them out of action. ●



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# MINUTES NOT HOURS

Lunaphore's laboratory automatons speed up personalised medicine.

**M**edical research is taking giant steps forward. In the last 10 years, for example, the number of biomarkers for diagnosing breast cancer have risen two to three-fold. This trend has opened up unforeseen opportunities for personalised medicine – which means more and more laboratory tests are needed.

This is precisely why Lunaphore's future looks so promising. Founded in 2014, the company's mission is to automate tissue diagnostics. 'We want to make these tests so efficient that no doctor has to ask how many they can perform,' says Ata Tuna Ciftlik, Lunaphore's CEO. Thanks to completely innovative technology, his machines to speed up workflow are streets ahead in efficiency.

'Hitherto, diagnostics of this type took between two and eight hours; we have reduced the time required to only a few minutes and are just starting to deliver more reliable results.'

**LUNAPHORE TECHNOLOGIES SA, LAUSANNE**

**SECTOR:** MEDTECH

**EMPLOYEES:** 20

**CONTACT:** WWW.LUNAPHORE.CH



**Priority, efficiency: Ata Tuna Ciftlik, Diego Gabriel Dupouy and Déborah Heintze**

## 4 questions for Ata Tuna Ciftlik

**My last holiday?** Turkey in July, although I did a bit of work as well.

**Who or what inspires me?** What employees can achieve if you give them the right tasks.

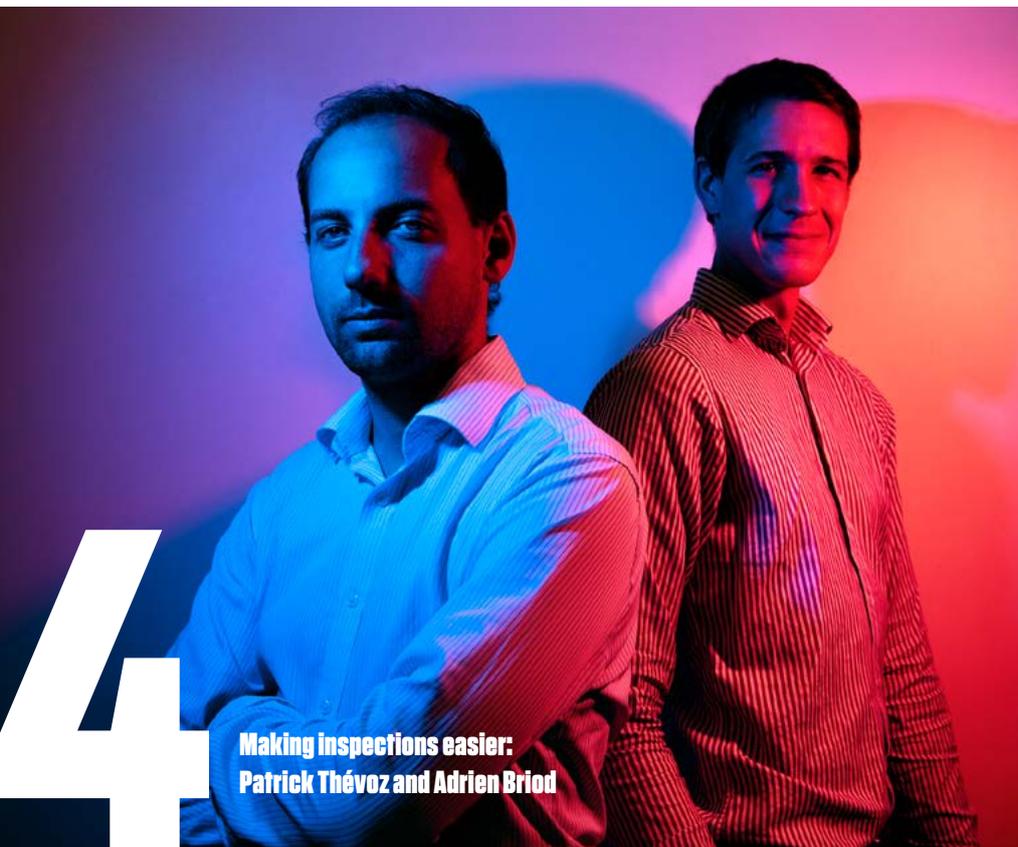
**Biggest mistake:** I used to put all my plans on the table at presentations. These days, I reveal only about 20% of them. People prefer that.

**My last mobile-free day?** I can't remember when that was.

This improvement in efficiency benefits the patient and is attractive to the diagnostics laboratory since the sample throughput is multiplied. Founded by Ciftlik, Déborah Heintze and Diego Gabriel Dupouy, the medtech company's potential is also attracting numerous investors. The startup has raised a total of CHF 13 million in three financing rounds, the last of which has just been closed.

Lunaphore is currently testing the first mass production of diagnostics machines at EPFL Innovation Park. It has outsourced production to an experienced Swiss medtech manufacturer – a maximum of 100 machines are due to be built in 2019.

The Lausanne-based company has also turned to partnerships for development of the market. It is working with well-established, international companies that manufacture, inter alia, reagents for traditional tissue analysis. 'It's not advisable as a startup at our stage to build a market from scratch,' says Ciftlik, 'we must first win the trust of our customers.'



Making inspections easier:  
Patrick Thévoz and Adrien Briod

# ROUND, LIGHT AND AGILE

Flyability's collision-proof spherical drones are in demand worldwide. The jewel of the Swiss drone scene doubles its staff every six months.

**FLYABILITY SA, LAUSANNE / SECTOR:** DRONES **FOUNDED:** 2014

**EMPLOYEES:** 70 **CONTACT:** WWW.FLYABILITY.COM

## 4 questions for Patrick Thévoz

**My last holiday?** Skiing in Norway in April.

**Who or what inspires me?** When I see that customers are setting up their own companies around our products.

**Biggest mistake:** Being too optimistic. We never thought setting up the company would require so many people and so much money.

**My last mobile-free day?** Before the company was founded. I took a round-the-world trip for a year in 2013.

**W**hen, in spring 2018 at the VivaTech global startup fair in

Paris, Switzerland introduced itself as 'Home of Drones', there was no doubt who was lined up to blow away the 200 guests in the Swiss embassy: Flyability. As well as producing collision-proof drones – perfect for wowing the audience with demo flights – the startup is a success story par excellence.

The startup was founded by Patrick Thévoz and Adrien Briod in 2014 as an ETH Lausanne spin-off, where Briod gained a doctorate at the Laboratory of Intelligent Systems. Flyability now employs 70 people and has more than 350 customers worldwide.

The Elios range of spherical drones can be used, for example, to scan a cooling tower for cracks, or customers may need the drones to inspect refineries, steelworks and gas terminals. Various police forces have also bought the drones for rescue and anti-terror deployment.

A drone costs CHF 25,000, including training and replacement parts. 'Measured in terms of the costs that our products save,' says CEO Patrick Thévoz, only half in jest, 'we are too cheap.' A customer told him recently he had used an Elios over the weekend to save USD 3 million.

The Lausanne-based company is currently working on a new model. It is designed to be partly automated, which lowers many of the barriers to use.

'Launching a second product is a challenge,' explains Thévoz, 'because it's now about matching up to customer expectations and defending a brand.'

Flyability wants to grow quickly. This means not only driving the company forward, but also expanding the market for inspection drones, which means more investment. The startup has raised another CHF 10 million in risk capital to do this.



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# MAKER OF SKIN

Cutiss, a University of Zurich spin-off, grows large areas of natural skin quickly from just a few cells.

**I**t rarely happens that a startup not yet 18 months old raises more than CHF 8 million of risk capital – in a first financing round from the UZH Life Sciences Fund, and in a second round from an investor group from Italy, Taiwan, South Africa and Switzerland.

But there's a good reason for Cutiss' success: CEO Daniela Marino, a biotechnologist by training, is in no way a beginner. She has been working on growing personalised skin since 2009.

Marino and two doctors from University Children's Hospital Zurich are the first global team to develop a process that

can be used to produce plate-sized pieces of skin from just a few cells and in only four weeks.

Engineered skin enjoys many advantages over skin transplanted from other parts of the patient's body: fewer operations and less scarring. An international study involving 40 adult burns victims is currently running, designed, says Marino, 'to show that denovoSkin is safe and effective'.

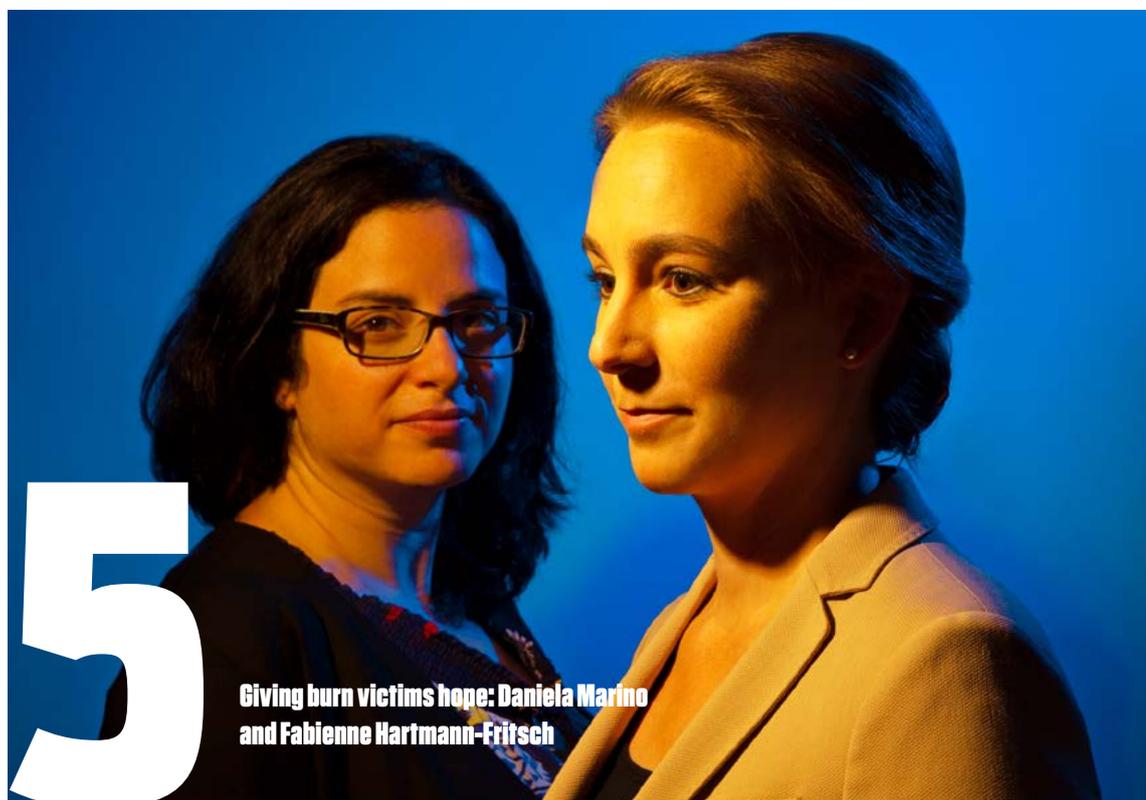
Under its business model, Cutiss will produce machines that hospitals can use themselves to grow personalised skin for their patients. As Marino explains: 'That's how we can reduce the costs of the procedure by about 40%.' The startup is now looking for suitable partners in the engineering and medtech sector.

If everything goes according to plan, denovoSkin should receive marketing authorisation by 2022. The medical need is already well established: India alone sees about a million burn victims with irreversible and life-threatening skin injuries every year.

The market that Marino and her team are opening up in reconstructive medicine is likely to be several times larger. Apart from the removal of birthmarks and skin tumours, Cutiss' engineered skin could be used to replace unsightly scars. 'About 5 million procedures take place every year in the US and Europe,' says Marino.

**CUTISS AG, ZURICH / SECTOR:** BIOTECH

**FOUNDED:** 2017 **EMPLOYEES:** 9 **CONTACT:** WWW.CUTISS.CH



## 4 questions for Daniela Marino

**My last holiday?** Skiing in February.

**Who or what inspires me?** Helping patients in need.

**My biggest mistake?** I thought too late about the marketing for Cutiss.

**My last mobile-free day?** I can't remember when that was.

# 5

Giving burn victims hope: Daniela Marino and Fabienne Hartmann-Fritsch



6

Riding high (tech): Dorina Thiess and Sascha Bührle

## HORSE SENSE

Sensor systems monitor the vital data of horses. An inconspicuous business with potential.

**D**igitalisation is also coming to veterinary medicine. 'There's a lot of catching up to do,' says Piavita founder Dorina Thiess. Thus, together with engineer Sascha Bührle, she has invented a sensor system for horses. Attached to the animal, it records vital data and sends these to the cloud for analysis.

'Horses are animals of flight,' explains Thiess. That's why it is a long time before it is apparent that something is wrong with them; sometimes in the convalescent phase after an illness or accident. Thus, in order to protect their investments, the owners of riding, racing and jumping horses have their animals checked regularly. The Piavita app gives equestrian clinics and vets the opportunity to monitor the animals remotely.

Both of the first two small batches were sold out within weeks. Another 1,000 sensor packets are coming to market this autumn. Piavita has operated a branch in Berlin since April, and is expanding its presence in other European countries. 'And from the end of the year, we will also be active in the US,' explains Thiess. About 6,000 equine cardiologists practise in the US, which is where – at a Venture Leaders roadshow – Thiess and Bührle met their current investors. They raised CHF 5.5 million in January.

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**PIAVITA, ZÜRICH / SECTOR:** MEDTECH **FOUNDED:** 2016

**EMPLOYEES:** 35 **CONTACT:** WWW.PIAVITA.COM

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7

Cameras shall fly: Maximilian Boosfeld, Basil Weibel and Armin Ambühl

## GOING STRAIGHT UP

Helicopter and mini aeroplane in one: Wingtra's drones are in demand worldwide.

**W**ingtra's sales are 500% higher than last year. 'We don't see the strong growth ending,' comments Maximilian Boosfeld, CEO of the ETH Zurich spin-off. Wingtra launched the first drone more than a year ago. The second product followed a few months ago; it delivers particularly high-resolution images and pinpoints the location with great precision. The drone can also travel long distances and is simple to start.

These advantages are achieved through the particular type of construction used. The drone takes off vertically, like a helicopter; the wings then fold down and the machine can fly like a mini aeroplane. This enables a larger payload, which in the case of the high-precision drone is a camera with full-format image sensor and 42 megapixel resolution. That has enticing possibilities for a range of industries

The drones are used by land surveyors, opencast miners and scientists around the globe. Wingtra is well established in Switzerland. The markets with the greatest growth and potential are China and the US, so the rapidly expanding team is also being built up abroad. 'We are planning a branch in the US,' says Boosfeld.

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**WINGTRA AG / SECTOR:** DRONES **FOUNDED:** 2016

**EMPLOYEES:** 50 **CONTACT:** WWW.WINGTRA.COM

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**8** Friends of farmers: Dragos Constantin and Yosef Akhtman

## DRONING OUT

Agrotech Gamaya has acquired its first customers in Brazil, thanks in part to a strong Swiss network.

**P**ure high-tech: Gamaya combines innovative image sensors with machine learning and knowledge of agronomy. The results of the data analysis delivered by satellites and drone cameras can help farmers detect weeds at an early stage or even plant disease, pests and nutrient deficiency. 'This makes farming more efficient and sustainable,' says Gamaya CEO Yosef Akhtman. Savings of up to 50% are possible for chemical inputs alone.

The company has developed solutions for sugar cane and tobacco plantations, and has won its first customers in Brazil for both crops. The Swiss startup is currently setting up a sales team there. A former Syngenta marketing manager is in charge, having joined the startup in spring.

Gamaya also has the support of a strong Swiss network. Its investors include former Nestlé boss Peter Brabeck and it is receiving support from Philip Morris for the market launch of its solution for tobacco plantations. The US group operates a research and development centre in Lausanne.

'Swiss agriculture has no potential as a market for Gamaya, given its small-scale structure,' says Akhtman. 'But thanks to the high density of large companies, Switzerland is an ideal location for us.'

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**GAMAYA, LAUSANNE / SECTOR:** ENGINEERING **FOUNDED:** 2015

**EMPLOYEES:** 24 **CONTACT:** WWW.GAMAYA.COM

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Factoring alternatives: Stijn Pieper and Phil Lojaco

## THE SUCCESS FACTOR

Advanon's financing solution is gaining a foothold in Germany and attracting established SMEs.

**I**nvoices worth almost CHF 100 million have already been pre-financed through Advanon's platform. The pace of growth is high. 'The last nine months were particularly exceptional,' comments CEO Phil Lojaco. So far, a third of the volume has come from Germany, where the Swiss company has been active since last year. Through a German partner, Wirecard Bank, Advanon was able to start there without its own banking licence. It has also managed to partner with Deutsche Bank.

A significant part of its success is the fact that more and more established SMEs are discovering the online platform for factoring outstanding invoices and using it to secure their liquidity.

**ADVANON AG, ZÜRICH / SECTOR: FINTECH FOUNDED: 2015**

**EMPLOYEES: 28 CONTACT: WWW.ADVANON.COM**

## LIVER SAVER

Versantis plans to conduct the first patient trials with its drug candidates in 2019.

**V**ersantis is developing a medicine for a life-threatening liver disease for which doctors currently have no suitable treatment. It has attracted several international luminaries, who have joined the Medical Advisory Board and are now promoting the startup.

As part of their tangible commitment to the company, which is preparing for its first human trials, they provide advice and scrutinise development of the protocols for the clinical studies.

Versantis has also impressed the European Medicines Agency (EMA), which has granted the ETH spin-off orphan drug designation for rare diseases, enabling it to conduct shorter clinical trials. Chief executive Vincent Forster faces another challenge in 2019 – that's when the next financing round is scheduled.

**VERSANTIS AG, ZÜRICH / SECTOR: BIOTECH FOUNDED: 2015**

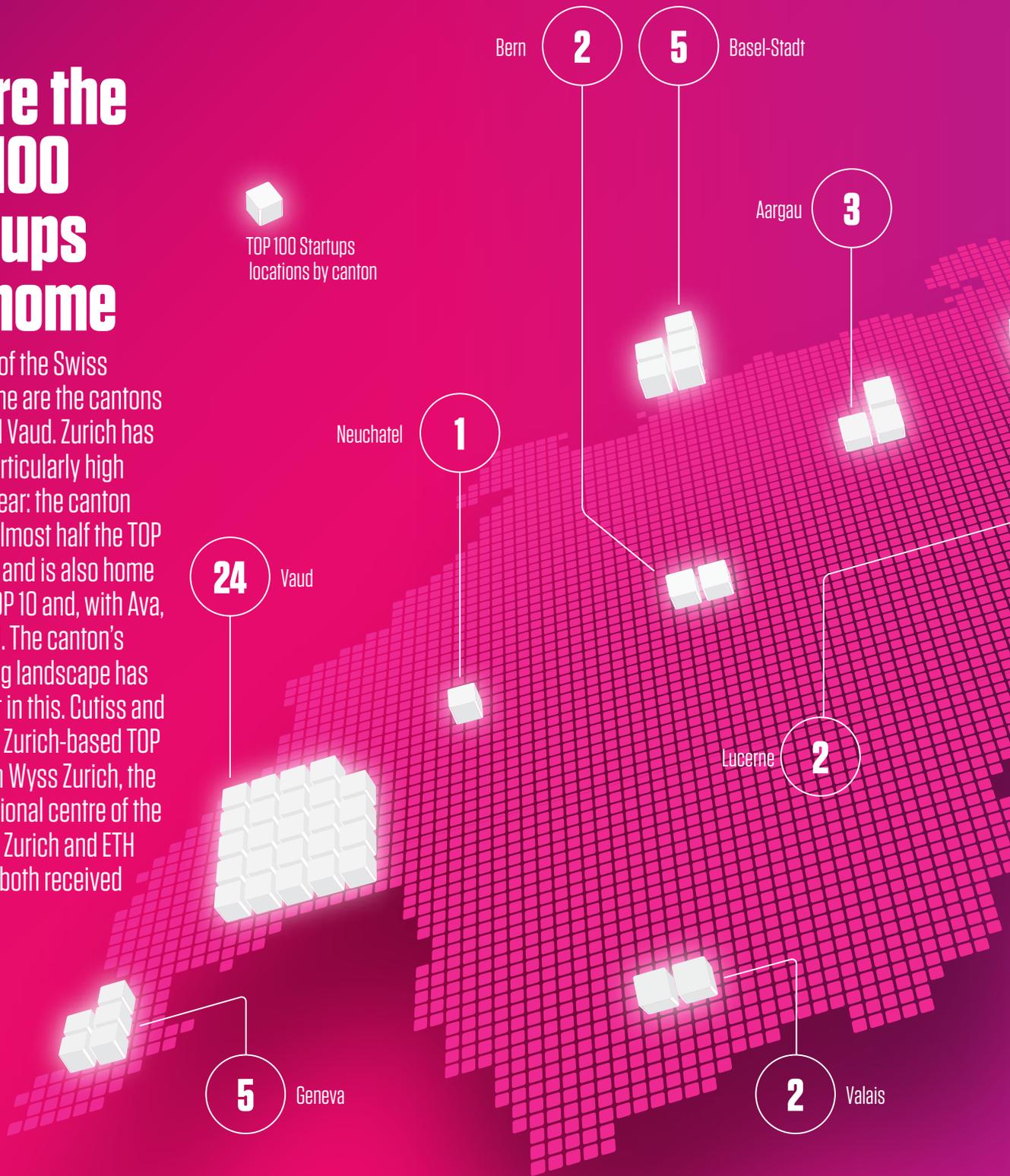
**EMPLOYEES: 5 CONTACT: WWW.VERSANTIS.CH**



Fighting a rare disease: Meriam Kabbaj and Vincent Forster

# Where the TOP 100 startups call home

The centres of the Swiss start-up scene are the cantons of Zurich and Vaud. Zurich has enjoyed a particularly high profile this year: the canton represents almost half the TOP 100 startups and is also home to half the TOP 10 and, with Ava, the number 1. The canton's broad funding landscape has played a part in this. Cutiss and Wingtra, two Zurich-based TOP 10 firms from Wyss Zurich, the joint translational centre of the University of Zurich and ETH Zurich, have both received funding.



**CHF 2 683 683 000**

in financing has flowed into the TOP 100 Startups since 2011

**5197 Jobs**

have been created since 2011 by all the TOP 100 Startups.

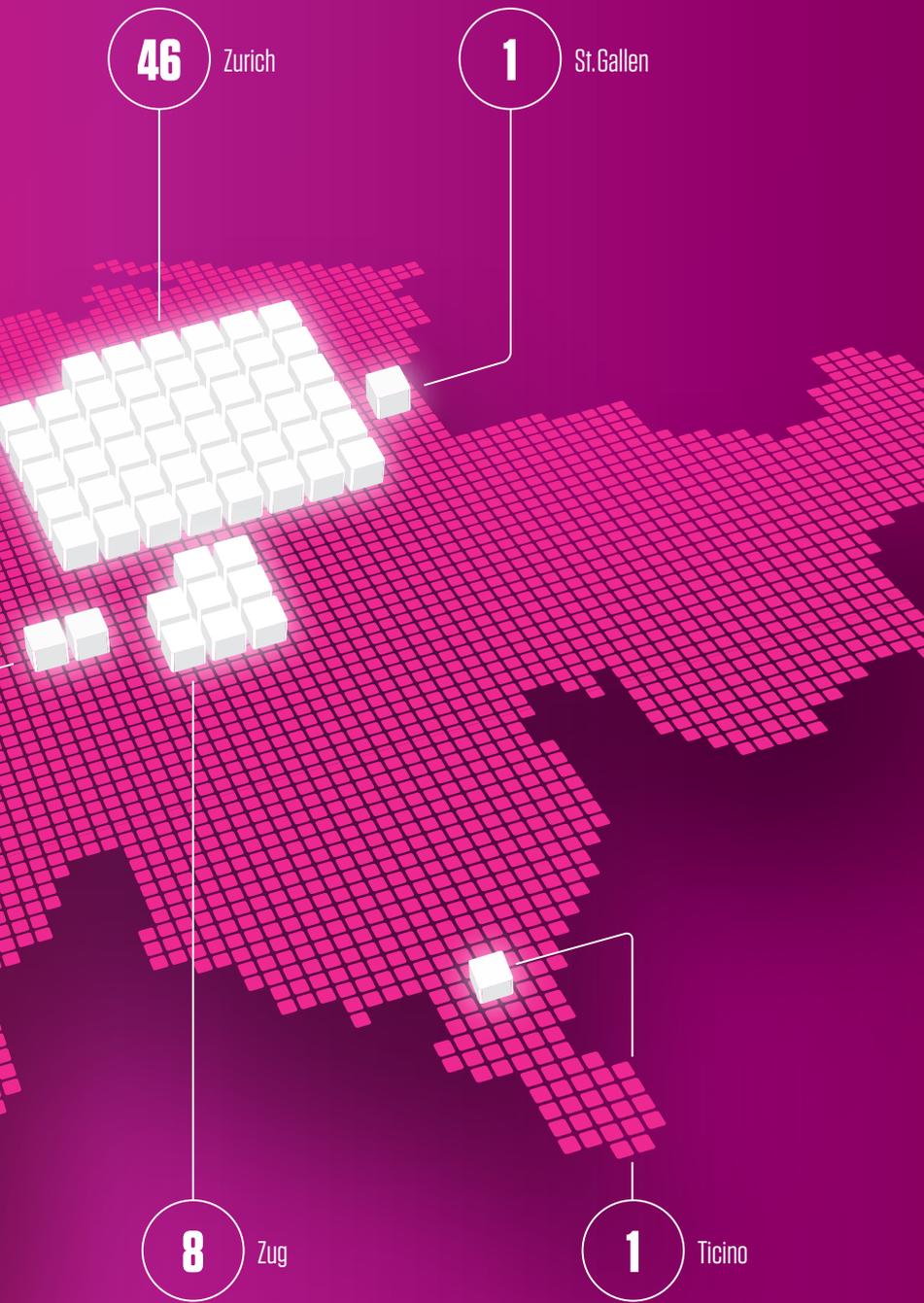
**371 startups**

have been ranked in the TOP 100 since 2011. 36 of those have been sold, two have held IPOs.

→ Graphic page 56

**28**

of the TOP 100 Startups 2018 were founded by a woman or have a woman in management.

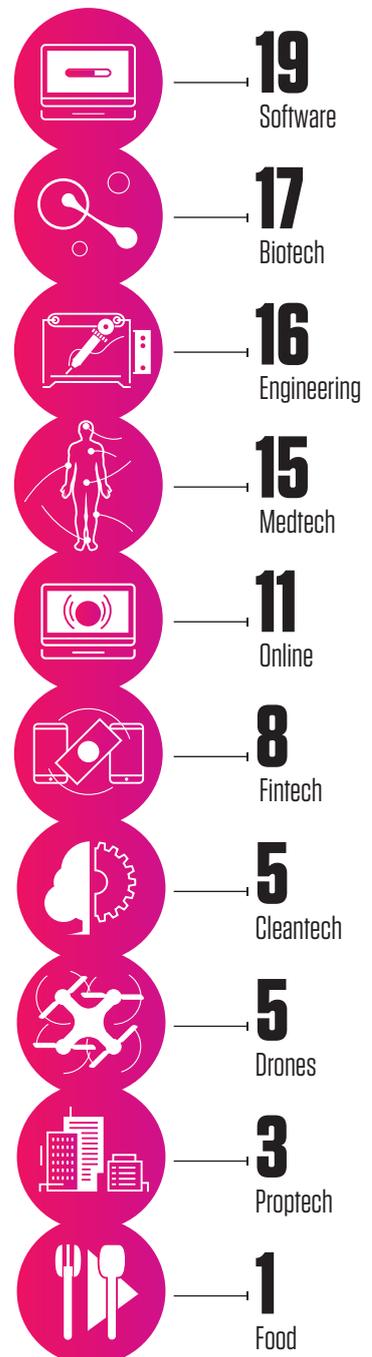


These startups have collected the most capital from investors in the past 12 months.



# High bandwidth

Startups from the TOP 100 are active in every important tech sector. This isn't true just for fields in which Switzerland has traditionally been strong, such as life sciences. Young IT firms are also well represented, developing software or platforms to digitize for instance the finance industry.



## 11 ALLTHINGS TECHNOLOGIES

BASEL | PROPTech

[WWW.ALLTHINGS.ME](http://WWW.ALLTHINGS.ME)

Allthings has created an app that enables digital communication and interaction between tenants, home owners and management companies. Its customers include Credit Suisse Asset Management, which alone will equip more than 11,000 apartments with the Allthings service platform by the end of the year. European expansion will now follow, thanks to a funding round of more than CHF 13 million.

## 12 EXEON ANALYTICS

ZURICH, SOFTWARE

[WWW.EXEON.CH](http://WWW.EXEON.CH)

Exeon's cybersecurity solution can distinguish between criminal data outflows from large companies and normal internet traffic. After a successful funding round and winning the Venture Kick final, the company launched its first standardised offer at the start of the year. Tens of thousands of PCs and servers have already been analysed. The team is now busy opening further sales channels in partnerships with established companies.

## 13 NANOLIVE

LAUSANNE, MEDTECH

[WWW.NANOLIVE.CH](http://WWW.NANOLIVE.CH)

In a first of its kind, Nanolive's 3D Cell Explorer enables living cells to be microscopically observed for long periods of time. It has already sold 150 machines. As well as employing more than 20 members of staff, the startup also has more than a dozen suppliers. Its vision is to sell not only the microscopes but also data, and it recently launched its first database offer for schools.

## 14 IMVERSE

PLAN-LES-OUATES, SOFTWARE

[WWW.IMVERSE.CH](http://WWW.IMVERSE.CH)

Imverse's graphics software makes the creation of photorealistic 3D content 10 times faster and cheaper than current

solutions. The first field of application is entertainment. There is already plenty of interest from Hollywood, which is why CEO Javier Bello Ruiz is preparing to open a branch on the US West Coast.

## 15 ORBIWISE

PLAN-LES-OUATES, SOFTWARE

[WWW.ORBIWISE.COM](http://WWW.ORBIWISE.COM)

Low-power wide-area networks are the backbone of the Internet of Things, since they enable data to be transferred more cheaply than over wifi or mobile phone networks. Geneva-based server manufacturer OrbiWise is the leading player, enjoying success in India, South America, eastern Asia and, since the summer, Australia.

## 16 SCANTRUST

LAUSANNE, SOFTWARE

[WWW.SCANTRUST.COM](http://WWW.SCANTRUST.COM)

The success of ScanTrust, which has developed tamper-proof QR codes, can be measured in numbers. In November 2017, it completed an initial funding round of CHF 4.2 million. ScanTrust also received several million in grants from the Eurostars-2 programme for its most recent project: real-time monitoring of the flow of goods. This will ensure product authenticity and supply chain integrity.

## 17 TESTINGTIME

ZURICH, SOFTWARE

[WWW.TESTINGTIME.COM](http://WWW.TESTINGTIME.COM)

TestingTime is losing no time. The startup has a pool of more than 150,000 testers to draw from for user and market research on behalf of customers including Zalando, Deloitte, UBS and Migros. In June, TestingTime announced a CHF 2.8 million funding round.

## 18 YAMO

ZUG, FOOD

[WWW.YAMO.CH](http://WWW.YAMO.CH)

Baby food should be as fresh and natural as possible. Yamo's puréed food retains natural vitamins, colours and

taste, thanks to high-pressure pasteurisation. Online sales started in Switzerland, Germany and Austria, and Yamo, which had a financing round in June, has had also a production site in Germany since January. As of summer 2018, its puréed food can also be found on the shelves of German pharmacy chain dm and Coop.

## 19 CREAL3D

ECUBLENS, ENGINEERING

[WWW.CREAL3D.COM](http://WWW.CREAL3D.COM)

Although there's a lot of talk about smart glasses, they have still to make their mark in everyday life. One problem is that virtual images are projected on to the eye from a fixed distance, which means the eye cannot focus naturally. CREAL3D is the first company to develop a fundamental solution to this problem. It now intends to develop its high-end VR glasses with a well-known Swiss engineering company.

## 20 CRISPR THERAPEUTICS

ZUG, BIOTECH

[WWW.CRISPRTX.COM](http://WWW.CRISPRTX.COM)

This company's invention is good enough to win a Nobel prize. Its Crispr/Cas9 genetic scissors can cut out, alter and then reinsert genetic material. This is the basis of Crispr Therapeutics, the share price of which quadrupled after its IPO in 2016. The rise in its share price was stopped at the end of May, when the US Food and Drug Administration (FDA) put a temporary hold on a trial. Crispr has now announced that a second, European, trial will start in autumn 2018.

## 21 FIXPOSITION

ZURICH, ENGINEERING

[WWW.FIXPOSITION.COM](http://WWW.FIXPOSITION.COM)

Autonomous vehicles need a real-time positioning system with unparalleled reliability and precision. Zurich-based Fixposition supplies this by combining satellite-based positioning systems such as GPS with computer vision technologies which can give precise positions to within a centimetre. Its customers include groups such as Huawei.

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## 22 MAXWELL BIOSYSTEMS

BASEL, MEDTECH

[WWW.MXWBIO.COM](http://WWW.MXWBIO.COM)

The MaxOne screening platform enables analysis of the clinical potential of drugs in brain cells. This speeds up research into active ingredients considerably. At the moment, the fully automated analysis machine is used mainly for research purposes in neuroscience, drug development and cell movement.

## 23 GLYCEMICON

BRUGG, BIOTECH

[WWW.GLYCEMICON.COM](http://WWW.GLYCEMICON.COM)

Last year, this Aargau start-up raised CHF 3.25 million of venture capital. It completed the first funding round in April, generating another CHF 1.8 million. Glycemicon uses a substance that occurs naturally in humans and animals to develop dietary food supplements for tackling obesity and other precursors of diabetes. Two clinical trials are now under way.

## 24 PERSPECTIVE ROBOTICS (FOTOKITE),

ZURICH, DRONES

[WWW.FOTOKITE.COM](http://WWW.FOTOKITE.COM)

A drone controlled like a kite on a line – that's the Fotokite Pro. Employed by major broadcasters such as CNN and the BBC, it is the first commercial drone to be authorised by the US regulator for use above crowds of people. In April, the start-up won USD 1 million in prize money at the GENIUS NY Business Accelerator competition in New York.

## 25 CRYPTO REAL ESTATE

ZUG, PROPTECH

[WWW.SWISSREALCOIN.CH](http://WWW.SWISSREALCOIN.CH)

This Zug-based company is bringing blockchain to the real estate business – from the investment phase to building maintenance. At the beginning of the year, Mobimo CEO Christoph Caviezel joined the board of directors. SwissRealCoin's IPO, which was planned for this

spring, had to be postponed owing to regulatory considerations. It is now scheduled to take place in the autumn.

## 26 9T LABS

ZURICH, ENGINEERING

[WWW.9TLABS.COM](http://WWW.9TLABS.COM)

Carbon-fibre components are light and stable, but time-consuming to manufacture. Zurich ETH spin-off 9T Labs has now developed a 3D printer for the material. At the start of the year, Giovanni Cavolina's team raised CHF 300,000 of seed capital, from investors including GetYourGuide co-founder Pascal Mathis.

## 27 INSOLIGHT

LAUSANNE, ENGINEERING

[WWW.INSOLIGHT.CH](http://WWW.INSOLIGHT.CH)

Insolight's solar modules are twice as efficient as conventional modules, thanks to a highly efficient combination of solar cells and magnifying lenses that track the sun and concentrate the light. It completed the first funding round in January, generating more than CHF 2.3 million. The first pilot projects are now under way. The start-up is also involved in GRECO, a European project that researches cheap, environmentally friendly and sustainable photovoltaic products.

## 28 PROTON TECHNOLOGIES

PLAN-LES-OUATES, ONLINE

[WWW.PROTONMAIL.COM](http://WWW.PROTONMAIL.COM)

Data abuse scandals such as Cambridge Analytica's have meant that more and more internet users have developed an awareness of data protection. This benefits services such as Protonmail. Aside from a secure email service, the Geneva-based company also offers a service for creation of virtual private networks. More than 5 million users already employ its services.

## TOP 5

### THE BEST NEWCOMERS



#### 1. EXEON ANALYTICS

Zurich, rank 12

#### 2. IMVERSE

Plan-les-Quates, rank 14

#### 3. YAMO

Zug, rank 18

#### 4. CREAL3D

Ecublens, rank 19

#### 5. FIXPOSITION

Zurich, rank 21

In the security sector, startups often take a long time to build up the necessary trust to attract the interest of large companies. It is all the more remarkable, therefore, that **Exeon** acquired its first customer almost before it was even founded. Founder and CEO **David Gugelmann**: 'Our offer means we are racing ahead.'

Exeon has developed a clever solution for an urgent problem. If a PC in a large corporation is infected after a targeted hack, data sometimes flows out unnoticed for months. Hackers exploit the fact that data is continually sent externally during normal surfing. The data theft is hidden within this normal data traffic.

Large corporates are aware of this problem, and now Exeon has a solution. With the help of machine learning, the software of the ETH spin-off can distinguish between data theft and normal surfing – or at least identify suspicious cases, which the company's IT staff can then assess using clever visualisation.





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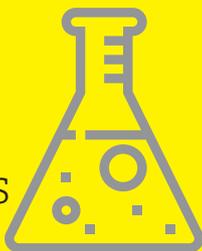
Industry Partners



**SWISS PRIME SITE**



## TOP 5 THE BEST BIOTECHS



### 1. CUTISS

Zurich, rank 5

### 2. VERSANTIS

Zurich, rank 10

### 3. CRISPR

Zug, rank 20

### 4. GLYCEMICON

Brugg, rank 23

### 5. TOLREMO

Zurich, rank 31

Last year, the 20 largest pharma companies earned CHF 160 billion with cancer treatments – a lucrative, but very competitive market. So rather than launch another cancer drug, ETH Zurich spin-off **TOLREMO** has taken another approach. Cancer treatments often fail because patients develop resistance to them, in a very similar way to bacterial infections. After working initially, the

drug loses its efficacy and the cancer returns. 'We have a totally innovative approach, which we can use to inhibit the development of resistance at the outset of

treatment. The aim is to lengthen the lives of cancer

patients,' explains CEO **Stefanie Flückiger-Mangual**. Initial human trials are due to start in 2021 at the earliest. Drug development is a long road, but the start-up looks set to make it, thanks to its experienced team of founders – in addition to Flückiger, it contains not only two professors from ETH Zurich but also the former Chief Medical Officer of Actelion.

### 29 BRING! LABS

ZÜRICH, ONLINE

[WWW.GETBRING.COM](http://WWW.GETBRING.COM)

The Bring! app let users create shopping lists on their smartphone and share them with other people, enabling them to plan their shopping together. They are helped by a self-learning shopping memory. In February, the Zurich-based company raised CHF 2.3 million as part of a series A funding round. The startup's growth plans include direct integration of online shops in the app.

### 30 CODECHECK

ZÜRICH, ONLINE

[WWW.CODECHECK.INFO/](http://WWW.CODECHECK.INFO/)

Within the space of a few years, CodeCheck has become Europe's largest product adviser. By scanning a bar code with the app, consumers receive information about the contents and their effects of more than 38 million products. CodeCheck completed its third funding round last November, generating more than CHF 1.5 million. The funds will be used for international expansion and further development.

### 31 TOLREMO THERAPEUTICS

ZÜRICH, BIOTECH

[WWW.TOLREMO.COM](http://WWW.TOLREMO.COM)

The human body can become resistant or immune not only to pathogens but also to drugs. This is a phenomenon seen in the treatment of tumors. TOLREMO's therapeutic approach targets the tumor sites responsible for resistance precisely, destroying them at the outset of cancer treatment.

### 32 XORLAB

ZÜRICH, SOFTWARE

[WWW.XORLAB.COM](http://WWW.XORLAB.COM)

Security software is not usually updated until after new threats become known, but Xorlab's solution is proactive and protects against fraudulent emails. The key element is that the software can distinguish between trustworthy communication partners and hackers.

CEO Antonio Barresi's team is currently working on making ActiveGuard cloud-ready.

### 33 POLYNEURON PHARMACEUTICALS

BASEL, BIOTECH

[WWW.POLYNEURON.COM](http://WWW.POLYNEURON.COM)

The technology platform Antibody-Catch enables the development of new drugs for the treatment of autoimmune diseases. The startup's first drug has received orphan drug status from the European Medicines Agency for accelerated approval and a licensing agreement with the University of Basel. In May 2018, it received a second tranche of funding, thus completing its first financing round of CHF 3.1 million.

### 34 FASHWELL

ZÜRICH, ONLINE

[WWW.FASHWELL.COM](http://WWW.FASHWELL.COM)

Fashwell's technology, which is revolutionising online shopping, is based on artificial intelligence combined with visual search. It enables customers to look for items of clothing using images, and shows them similar products and outfit suggestions. Zalando is a strategic investor, and along with other online retailers in Europe, already uses Fashwell. Last month, the ETH Zurich spin-off opened a branch in New York.

### 35 DAPHNE TECHNOLOGY

ECUBLENS, CLEANTECH

[WWW.DAPHNETECHNOLOGY.COM](http://WWW.DAPHNETECHNOLOGY.COM)

International agreements require ocean-going vessels to slash their emissions of sulphur and nitrogen oxide by 2020. Higher-quality fuels would cost shipyards billions, which is the opportunity being exploited by Valais cleantech start-up Daphne Technology, founded by Björn Asplind and Mario Michan. Their technology washes the emissions with ammonia and water, and in the process creates fertiliser as a saleable byproduct.



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## 36 ALTOIDA

LUCERNE, MEDTECH  
WWW.ALTOIDA.COM

Developed by Altoida, this app helps doctors – by means, inter alia, of fine motor tests – to identify patients with an increased risk of dementia. Klinik Hirslanden in Zurich will use the app in a prevention programme. A second funding round of several million Swiss francs is planned for later this year after market entry, paving the way to launch on the US market.

## 37 BIOWATCH

LAUSANNE, ENGINEERING  
WWW.BIOWATCHID.COM

Biowatch's armband brings together the whole gamut of authentication methods, such as PIN codes, car keys, entry authorisations and credit cards. Identification is by means of the user's individual pattern of veins and is active only when the armband is worn. The product is due to be launched at the beginning of next year. Awarded the CTI Start-up Label, the spin-off from research institute Idiap is based in Lausanne, with further offices in Martigny and Paris.

## 38 GUURU

ZURICH, SOFTWARE  
WWW.GUURU.COM

With cloud platform guuru, B2C companies are turning their core customers into new customer advisers. Within seconds of a question being asked, a proprietary algorithm finds the right guru. For customers such as Brack.ch and Intersport, the reaction time is less than a minute. At the beginning of the year, its three founders – Benno Marbach, Antoine Meier and Tonio Meier – completed a funding round of CHF 800,000. Expansion into Germany is now under way.

## 39 CHIMPY (FORMERLY: BATTERE)

ZURICH, CLEANTECH  
WWW.HEYCHIMPY.COM

In May this year, the founders of Battere changed its name to Chimpy – its solar-driven batteries have been available to hire at all kiosk, avec and Press&Books branches for a year. Smartphones can be charged from the powerbank, on the go, and users simply hand back the empty battery at the nearest kiosk. The bright green batteries were much sought after at this summer's many open-air events.

## 40 PRICEHUBBLE

ZURICH, PROPTTECH  
WWW.PRICEHUBBLE.COM

Proptech is booming: PriceHubble, a startup founded in 2016, raised several million Swiss francs of growth capital from investors in 2017. Stefan Heitmann's team analyses portfolios based on more than 100 data sources. A self-learning algorithm identifies price-driving factors and can quickly give recommendations on valuations and locations.

## 41 PREGNOLIA

ZURICH, MEDTECH  
WWW.PREGNOLIA.COM

This medtech's mission is to prevent premature births. Pregnolia has developed a probe that checks the stiffness of the cervix, which is an early indicator of the risk of an imminent premature birth. A funding round to the tune of CHF 3.25 million was completed in February. Product approval is expected in autumn 2018.

## 42 INOSITEC

ZURICH, BIOTECH  
WWW.INOSITEC.COM

This ETH Zurich spin-off develops innovative drugs based on inositol phosphate, a naturally occurring messenger molecule with a diverse



## TOP 5

### THE NEWEST COMPANIES



#### 1. DOTPHOTON

Geneva, rank 68, 19.04.2018

#### 2. CARVOLUTION

Bannwil (BE), rank 60, 08.03.2018

#### 3. MIRRAKOI

Lausanne, rank 61, 15.01.2018

#### 4. DAPHNE TECHNOLOGY

Ecublens, rank 35, 22.12.2017

#### 5. CRYPTO REAL ESTATE

Zug, rank 25, 19.12.2017



These days, instead of fine-tuning the technology behind closed doors, top startups are seeking feedback from customers and investors as soon as possible. The Dotphoton team is one of those that tested the market before the company was even founded. This also explains how at just a few months old, the start-up made it into the TOP 100. 'We founded the company only after we had had positive signals from potential customers and investors, and had signed off on an initial funding round,' says CEO **Eugenia Balysheva**. Winning the Venture

Leaders Technology competition was a big help in building up the necessary contact list. The communication continued after foundation, as **Dotphoton** has developed a compression technique for images that can be employed in a wide range of applications. Which is why things needed to be focused from the start. Balysheva explains that the startup, which was founded only in April, now has a clear strategy as well as its first customers: 'Our first step will be to concentrate on B2B customers in the fields of microscopy and space travel.'

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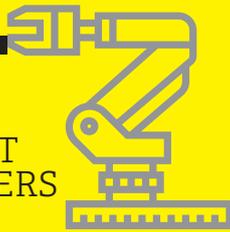
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## TOP 5 THE BEST ENGINEERS



### 1. GAMAYA

Lausanne, rank 8

### 2. CREAL3D

Ecublens, rank 19

### 3. FIXPOSITION

Zurich, rank 21

### 4. 9T LABS

Zurich, rank 26

### 5. INSOLIGHT

Lausanne, rank 27

**CREAL3D** CEO **Tomas Sluka** recently hired several new employees. 'It was a unique opportunity,' explains the former CERN and EPFL researcher. The startup benefits from the fact that it is not the first company in Lausanne dedicated to projection technology for virtual and augmented reality. The city's Intel branch had already been working on smart glasses, but the group recently stopped the project. Some

staff have now switched to CREAL3D. In a first, the startup's technology enables images to be projected on to glasses in such a way that the eye can

change focus on individual objects in the image naturally. In the VR glasses currently available, all objects appear equally sharp or always the same distance away, regardless of where they are positioned in the virtual space; this means our eyes tire quickly and our brain becomes confused.

The startup's plans are ambitious. It wants the technology to become the benchmark in smart glasses and other head-mounted displays.

range of cell functions. The small molecules help, for example, in arterial calcification and intestinal infections. Last November, Inositec won the Swiss Technology Award, one of the most important awards for innovation and technology transfer in Switzerland, in the startup category.

### 43 H55

SION, CLEANTECH

[WWW.H55.CH](http://WWW.H55.CH)

Andre Borschberg sits in the cockpit. Solar Impulse's co-pilot is the driving force and executive chairman of H55. Founded in 2017, the company develops electric propulsion systems for air transport. That may seem high-blown, but it has already attracted investors. In February, a Swiss-US risk capital company invested in H55.

### 44 PHARMABIOME

ZURICH, BIOTECH

[WWW.PHARMABIOME.COM](http://WWW.PHARMABIOME.COM)

CEO Tomas de Wouters and his team develop therapies for diseases linked to intestinal flora. This March, PharmaBiome won the Spark Award, which is given to the most promising inventions at ETH Zurich. It was the first time a team has won that has already founded a startup and is generating revenue.

### 45 LEMAN MICRO DEVICES,

LAUSANNE, MEDTECH

[WWW.LEMAN-MICRO.COM](http://WWW.LEMAN-MICRO.COM)

LMD turns smartphones into medical devices. At the press of a button, the Lausanne startup's V-Sensor measures blood pressure, body temperature, breathing frequency, pulse and oxygen saturation in the blood with the accuracy of a medical measuring instrument. The last clinical trial was conducted on the sensor and its related app at Lausanne University Hospital at the start of 2018. LMD expects to receive international authorisation before the end of the year.

### 46 DAEDALEAN

ZURICH, SOFTWARE

[WWW.DAEDALEAN.AI](http://WWW.DAEDALEAN.AI)

Luuk van Dijk, founder and CEO of Daedalean, predicts that the first passenger drones will come to market in 2021. In order to develop an autopilot, the former Google employee has surrounded himself with a team of experts in robotics, image recognition, machine learning and air transport technology. The project is being funded by business angels and venture capitalists, which have so far provided almost CHF 6 million.

### 47 AVRIOS INTERNATIONAL

ZURICH, SOFTWARE

[WWW.AVRIOS.COM](http://WWW.AVRIOS.COM)

Many SMEs manage their vehicle fleets using Excel tables. Vendor-neutral platform Avrios Fleet Management 4.0 offers an alternative. The software automates the entry and structuring of all fleet-relevant data and enables key figures and costs to be quickly compared. Founded in 2015, Avrios employs 60 members of staff and has more than 600 corporate customers.

### 48 CELLESTIA BIOTECH

BASEL, BIOTECH

[WWW.CELLESTIA.COM](http://WWW.CELLESTIA.COM)

Cellestia has an active ingredient that targets cancers driven by NOTCH signalling pathways, which are usually very aggressive and respond to conventional treatment only temporarily, if at all. Since the beginning of the year, the active ingredient has been tested on patients in clinical trials in Spain, Switzerland and the Netherlands. The testing programme is due to be expanded to the US in the next year.

### 49 REALLOOK (SELFNATION)

ZURICH, ONLINE

[WWW.SELFNATION.CH](http://WWW.SELFNATION.CH)

The founding team is committed to making tailor-made jeans and chinos to order online. And it has paid off: the





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The online desk for companies  
**easygov.swiss**

**easygov**



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

fashiontech startup has more than 10,000 customers in Switzerland, Germany and the UK. This year, ReallLook's Selfnation product received the inaugural Fashion Innovation Award.

## 50 VIU VENTURES

ZÜRICH, ONLINE

[WWW.SHOPVIU.COM](http://WWW.SHOPVIU.COM)

With its handmade designer glasses, affordable prices and try-at-home model, VIU Ventures is revolutionising online buying in the optical sector. But the Zurich-based company is not only online: VIU glasses are available in flagship and partner stores in Switzerland, Germany and Austria, and can now also be bought in Belgium, Denmark, the Netherlands and Spain.

## 51 GRZ TECHNOLOGIES

SION, CLEANTECH

[WWW.GRZ-TECHNOLOGIES.COM](http://WWW.GRZ-TECHNOLOGIES.COM)

This Valais-based company is taking hydrogen-based energy storage a significant step forward. Instead of storing hydrogen under high pressure or in liquid form, GRZ uses a metal that binds with the hydrogen. This increases energy density and needs far less energy for storage.

## 52 ASTROCAST

ECUBLENS, ENGINEERING

[WWW.ASTROCAST.COM](http://WWW.ASTROCAST.COM)

The Internet of Things is taking over near-Earth space. Astrocast develops nanosatellites designed to provide around-the-globe communication between machines and devices while orbiting. The Lausanne-based company is also working on a chip that makes existing machines network-compatible. Astrocast completed a seed funding round of CHF 4.1 million at the end of 2017.

## 53 FARMY

ZÜRICH, ONLINE

[WWW.FARMY.CH](http://WWW.FARMY.CH)

Online farm shop Farmy.ch connects regional producers with consumers and

delivers the produce directly to the customer's home. Thanks to a CHF 3 million guarantee from the Technology Fund, founders Tobias Schubert and Roman Hartmann and their team were able to set up their own e-mobile fleet at the beginning of the year. The company now offers a free delivery service in two of Switzerland's main regions – Zurich and Lake Geneva.

## 54 ANYBOTICS

ZÜRICH, ENGINEERING

[WWW.ANYBOTICS.COM](http://WWW.ANYBOTICS.COM)

ANYmal, the autonomous walking robot from Zurich ETH spin-off ANYbotics, can climb stairs, avoid obstacles and read measuring devices. It has already appeared in US series The X-Files and created a sensation at the last Hannover Messe. CEO Hanspeter Fässler and his team are now working to define the market for their innovation, which has taken more than 100 man years to develop.

## 55 ELTHERA

ZUG, BIOTECH

[WWW.ELTHERA.COM](http://WWW.ELTHERA.COM)

Cancer patients whose tumors produce the LICMA protein have a much shorter life expectancy. Elthera is developing an antibody that inhibits the tumor-promoting properties of LICAM and activates the body's own immune system to fight the growth. The Zug-based startup was founded by a team under the leadership of Anne Schmidt, an immunologist with many years' experience in pharma.

## 56 FRONTIFY

ST. GALLEN, SOFTWARE

[WWW.FRONTIFY.COM](http://WWW.FRONTIFY.COM)

Frontify's customers include giants such as IBM, Nasdaq, Lufthansa, Vodafone, Bosch, ProSieben and Sat.1. The online platform makes it easier to always use the right logos, text, colours and images in digital communication tools. Last year, Frontify expanded into Germany and has grown by 300%.

## 57 LOANBOOK

ZÜRICH, FINTECH

[WWW.LOANBOOK.CH](http://WWW.LOANBOOK.CH)

The Loanbook platform brings municipalities that want to borrow into contact with institutional investors. With just a few clicks, they can create a loan application and at the same time talk to a large number of investors. Loanbook already operates in Germany and Austria. Founder and CEO Stefan Mühlemann is preparing for entry into the Swiss bond market.

## 58 NOMOKO

ZÜRICH, ENGINEERING

[DEV.NOMOKO.WORLD](http://DEV.NOMOKO.WORLD)

The photorealistic 3D models, such as those of a town, taken with Nomoko's proprietary camera are indistinguishable from reality to the naked eye. The areas of application are correspondingly big: town and traffic planning, game production, virtual test environments for self-driving cars. The founders have so far raised CHF 4.7 million in seed and growth capital in two financing rounds.

## 59 EQUIPPO

ZUG, ONLINE

[WWW.EQUIPPO.COM](http://WWW.EQUIPPO.COM)

Equippo is the Zalando for second-hand construction equipment. If customers are not satisfied with their machine, they can return it within five days and get their money back. Equippo takes care of the entire process, including transport to anywhere in the world. The Zug start-up has had a branch in France since early 2018, and there are plans for other branches in Francophone Africa and Belgium.

## 60 CARVOLUTION

BANNWIL (BE), ONLINE

[WWW.CARVOLUTION.COM](http://WWW.CARVOLUTION.COM)

Customers choose their car online, have it delivered to their home and pay a fixed monthly price that includes all costs, except petrol. They can keep the car as long as they wish or cancel the

subscription with 30 days' notice. Carvolution hopes to compete with sales and leasing. Serial entrepreneur Peter Schüpbach is a participant.

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## 61 MIRRAKOI

LAUSANNE, SOFTWARE  
[WWW.MIRRAKOI.COM](http://WWW.MIRRAKOI.COM)

Users of normal CAD programs require a lot of training. Mirrakoi has changed this with a technology called Augmented CAD, which simulates real, physical contact between the user and the CAD model. This allows models to be worked intuitively. The first product is called Xirus and is compatible with the most popular CAD programs.

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## 62 GRATXRAY

VILLIGEN (AG), MEDTECH  
[WWW.GRATXRAY.COM](http://WWW.GRATXRAY.COM)

Breast cancer is the second most common cancer. Mammograms are unpleasant and often produce a false positive. GratXray's unique computed tomography device produces painless, high-precision 3D images that enable early diagnosis. Moreover, the technology works without contrast agents and provides a more comfortable experience for patients.

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## 63 CLEVERDIST

PLAN-LES-QUATES, SOFTWARE  
[WWW.CLEVERDIST.COM](http://WWW.CLEVERDIST.COM)

Cleverdist is all about Industry 4.0; that is, the integration of large software and management and control systems. The startup is a spin-off of engineers at CERN, where it is involved in two projects. It has also developed a system for Siemens Mobility to monitor and manage rail and metro infrastructure. This solution is now being used in two metro projects.

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## 64 VANGUARD INTERNET (BATMAID)

LAUSANNE, ONLINE  
[WWW.BATMAID.COM](http://WWW.BATMAID.COM)

The international domestic cleaning market is worth more than CHF 500 bil-

lion. Valais company Vanguard Internet is seeking a slice of this market for itself. Using the Batmaid platform, tenants and home owners can book cleaning staff in their neighborhood. Batmaid currently works with 1,000 cleaners in Switzerland and Luxembourg. Founded in 2014, the company has broken even and in June acquired a new investor, Geneva real estate group Investis.

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## 65 APIAX

ZÜRICH, FINTECH  
[WWW.APIAX.COM](http://WWW.APIAX.COM)

Most financial institutions still administer legal and regulatory provisions manually. Apiax co-founder Ralf Huber intends to change this. Apiax provides customers with the applicable regulations via an interface as a service. At the end of 2017, the start-up completed a CHF 1.5 million funding round. Financial backers include former UBS chairman Peter Kurer.

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## 66 MELONPORT

ZUG, SOFTWARE  
[WWW.MELONPORT.COM](http://WWW.MELONPORT.COM)

If you want to invest today, you need a bank. The financial industry is the intermediary between savers and the economy. But this position is under threat from blockchain, which enables forgery-proof, contract-based interactions between peers. Zug-based startup Melonport, led by Mona El Isa, has developed a protocol on the Ethereum platform that allows participants to create, trade and manage digital assets.

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## 67 CYANO GUARD

ZÜRICH, BIOTECH  
[WWW.CYANO GUARD.CH](http://WWW.CYANO GUARD.CH)

This University of Zurich spin-off is marketing an innovative process for the detection of cyanide. Potential customers are those companies legally required to monitor their wastewater for poison, such as plastics manufacturers, electroplating operations and gold mine operators. Previously, they had to take samples and send them to a laboratory

for testing. CyanoGuard's test shortens the time between testing and results to just a few seconds.

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## 68 DOTPHOTON

GENEVA, SOFTWARE  
[WWW.DOTPHOTON.COM](http://WWW.DOTPHOTON.COM)

Digital cameras are getting better and high-resolution images are used in more and more fields of application. The alternative to continually increasing storage space and computing capacity for processing is the compression of images. Dotphoton has developed a technology that enables the size of photos to be reduced by a factor of 10, without loss of quality. Eugenia Balyшева and her team intend to create a new industry standard for high-resolution images.

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## 69 SKYPULL

LUGANO, CLEANTECH  
[WWW.SKYPULL.COM](http://WWW.SKYPULL.COM)

Winds at high altitudes blow more constantly and strongly than winds at ground level, which is why ETH spin-off Skypull has chosen drones to generate power. Gliding at a height of 200 metres, they unroll a cable connected to a generator on the ground. According to founder and CEO Nicola Mona, the flying power generator is 10 times lighter than a wind turbine but achieves the same performance, making it more environmentally friendly and cheaper to build and operate.

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## 70 KOMED HEALTH

ZÜRICH, SOFTWARE  
[WWW.KOMED-HEALTH.COM](http://WWW.KOMED-HEALTH.COM)

According to a trial by Lausanne University Hospital, every year misunderstandings and lack of communication cause more than 1,000 avoidable deaths in Swiss clinics alone. Komed Health, founded by Luiza Dobre, has developed a communication platform for doctors and other healthcare workers to prevent this. The chat program contains a prioritisation and alarm function and a bot that makes case-related treatment

## TOP 5

## THE BEST ONLINE STARTUPS



## 1. PROTON TECHNOLOGIES

Plan-les-Ouates, rank 28

## 2. BRING!

Zurich, rank 29

## 3. CODECHECK

Zurich, rank 30

## 4. FASHWELL

Zurich, rank 34

## 5. REALLOOK AG (SELFNATION)

Zurich, rank 49

'Revenue, not large funding rounds' is the maxim of the online startups in the TOP 100. The best example of this is

**Proton.** The Geneva-based company offers an encrypted email service and the ability to set up virtual private networks. More than 5 million users have signed up to the email service, while half a million use the VPN service. The revenue generated is enough to pay the wages of 80 employees.

'You should tap into external funding only if it's necessary,'

explains Proton CEO **Andy Yen.**

Although a large number of investors were interested, Yen is

convinced that too much

money could have been damaging: 'I think we are quicker and better without external investors.' He benefits in this respect from the fact that so far the startup has not spent a single franc on marketing. Its growth is based on word-of-mouth recommendation from users. This proved its worth once again when the second product, the VPN service, was launched. It looks as though this service could reach a million users within a year.

suggestions. One of the first customers of Komed Health is Inselspital Bern.

## 71 NANOLEQ

ZURICH, ENGINEERING

WWW.NANOLEQ.COM

Cables abrade under a mechanical load, which in robots and medical devices can cause expensive damage. Zurich ETH spin-off nanoleq has developed an unbreakable, stretchable and bendable cable for critical applications. The patented FlexOne cable has a life of up to 100 times longer than that of a standard cable. In May, co-founder and CEO Vincent Martinez was one of the five winners of the WA de Vigier Award, which comes with prize money of CHF 100,000.

## 72 COMPHYA

PRÉVERENGES (VD), MEDTECH

WWW.COMPHYA.COM

After spinal cord injuries or prostate operations, many men suffer from erectile dysfunction that cannot always be remedied by drugs. EPFL spin-off Comphyra offers a new technology as an alternative to penile implants and injections, based on a neurostimulator in the pelvic floor. Comphyra was one of the 20 winners of the European Venture Contest last December.

## 73 CRYPTO FUND

ZUG, FINTECH

WWW.CRYPTOFUNDAG.CH

By mid-June, it had happened: Crypto Fund AG became the first crypto company in Switzerland to be authorised by FINMA to sell collective investment funds. The company aims to provide institutional investors with simple and transparent access to the rapidly growing, blockchain-based asset management business. The first of the funds launched by the Zug-based company tracks the performance of 10 cryptocurrencies.

## 74 ZIPPSAFE

ZURICH, ENGINEERING

WWW.ZIPPSAFE.CH

Zippsafe is a textile locker that can save up to 70% of the space normally required for employee cloakrooms. Its Swiss customers already include well-known companies such as Swiss International Airlines and the cantonal hospitals in Winterthur and Baden. In July, the start-up closed a CHF 1.1 million funding round that will enable international expansion to start.

## 75 SONECT

ZURICH, FINTECH

WWW.SONECT.CH

The Sonect app gives retailers the option to let their customers withdraw cash. The service is free for both consumers and businesses. Sonect's contractual partners are small and medium-sized banks, which can use the virtual ATM to lower the cost of maintenance of their stationary ATM network. At the start of the year, Sandipan Chakraborty and his team acquired their first customer in Hypothekbank Lenzburg.

## 76 LIGENTEC

LAUSANNE, ENGINEERING

WWW.LIGENTEC.COM

Data is the oil of the 21st century. But it must be able to flow freely – traffic jams on data highways are not welcome. EPFL spin-off LiGenTec is developing a production process for optical chips based on silicon nitride. These new photonic integrated circuits (PIC) should increase the data throughput of existing fibre-optic cables 200 times. In May, LiGenTec was awarded seed funding of CHF 130,000 as a Venture Kick finalist.

## 77 COAT-X

LA CHAUX-DE-FONDS, ENGINEERING

WWW.COAT-X.COM

Coat-X is developing an ultra-thin biocompatible coating. Used as thin, hermetic encapsulation, it protects



electronics, wearables, implants and other devices from body fluids, water and chemicals up to 2,000 times better than traditional solutions. ISO certification is under way and production capacity is being expanded.

## 78 IRSWEEP

STÄFA (ZH), BIOTECH

[WWW.IRSWEEP.COM](http://WWW.IRSWEEP.COM)

The laser-based infrared spectrometer of this ETH spin-off offers much faster measurement than traditional devices – microseconds instead of seconds or minutes. Its applications include the analysis of protein folding mechanisms, which are involved in diseases such as Parkinson's and Alzheimer's. With the involvement of a strategic investor, its market launch is now being accelerated.

## 79 EMBOTECH

ZÜRICH, SOFTWARE

[WWW.EMBOTECH.COM](http://WWW.EMBOTECH.COM)

When it comes to software solutions for self-driving vehicles, drones and even space rockets, this ETH Zurich spin-off is ahead of the game. Its motion planning software controls the steering, braking, accelerating and parking of an autonomous vehicle using real-time calculations performed 50 times a second. Renault and Volvo have already implemented the technology. A project involving rocket landings has been started in conjunction with the European Space Agency.

## 80 NANOGENCE

RENENS, ENGINEERING

[WWW.VENTUREKICK.CH/NANOGENCE](http://WWW.VENTUREKICK.CH/NANOGENCE)

The most frequently used hard material in the building industry is concrete, which accounts for up to 8% of global carbon emissions. But EPFL researcher Kumar Abhishek is now creating a minor revolution. He has developed a nanoparticle additive that reduces CO<sub>2</sub> emissions by half, and at the same time massively increases strength and service life. Nanogence is close to market entry.

## 81 ONESKY (INVOLI)

RENENS, DRONES

[WWW.INVOLI.COM](http://WWW.INVOLI.COM)

Near-collisions between drones and air traffic are becoming more and more frequent. INVOLI enables drones to be safely integrated into air traffic. The startup, previously called OneSky, closed CHF 500,000 of seed financing this year and in May won the WA de Vigier award.

## 82 LEDGY

ZÜRICH, FINTECH

[WWW.LEDGY.COM](http://WWW.LEDGY.COM)

Ledgy's cloud-based tool for the online management of share ledgers is a big hit and has excited a number of notable investors, such as the founders of Doodle. The online share ledger gives privately held firms control of administration, transfer and trading of shares. The fintech startup has recently launched a dashboard for investors, where they can see their investments, convertible loans and other key figures for their holdings at a glance.

## 83 CARU

ZÜRICH, MEDTECH

[WWW.CARUHOME.COM](http://WWW.CARUHOME.COM)

CARU, an intelligent alarm device for elderly or ill people, is simply placed in an apartment and functions without maintenance. If someone calls 'help' or the sensors register unusual routines, it notifies a trusted person. Although the IoT device has been launched, it is due to become even more intelligent. This is the aim of a pilot being undertaken in conjunction with Tertianum AG, which operates 78 retirement and care homes in Switzerland.

## 84 RETINAL MEDICAL

BERN, MEDTECH

[WWW.RETINAL.COM](http://WWW.RETINAL.COM)

Prevention is better than cure. RetinAI is working on an automated solution to identify pathologies of the eye and causes of blindness using artificial intelligence. This can improve

preventative medicine and provide support to ophthalmologists and patients during treatment. The founders, a research team from the universities of Bern and Lausanne, won stage 3 of Venture Kick last year and are taking part in the Venture Leaders China roadshow later this month.

## 85 FUTURAE TECHNOLOGIES

ZÜRICH, FINTECH

[WWW.FUTURAE.COM](http://WWW.FUTURAE.COM)

Futurae offers a comprehensive and innovative authentication suite; its core product SoundProof, a two-factor authentication solution, functions without user interaction. The technology is based on a machine learning algorithm that reliably recognises the user by means of ambient noise. The startup was founded by an ETH security systems group. The highly secure authentication solution will soon be in use by several fintech companies.

## 86 ONEVISAGE

LAUSANNE, SOFTWARE

[WWW.ONEVISAGE.COM](http://WWW.ONEVISAGE.COM)

On average, a person needs to remember between 25 and 150 passwords and codes these days. This is set to change. In mid-2017, OneVisage launched the first 3D facial authentication solution for iOS and Android devices. A CHF 400,000 loan from the Foundation of Technological Innovation (FIT) has enabled CEO Christophe Remillet to pursue rapid international expansion.

## 87 GNUBIOTICS

EPALINGES (VD), BIOTECH

[WWW.GNUBIOTICS.COM](http://WWW.GNUBIOTICS.COM)

Gnubiotics develops products that contain up to 130 imitated carbohydrates that are otherwise found only in breast milk. The first product combats pet obesity, while the second is a supplement for baby food. In December, the start-up completed a CHF 2.3 million funding round. Since spring 2018, the Vaud-based company has been domiciled in the life sciences incubator StartLab at Epalinges.

## TOP 5 THE BEST MEDTECHS



### 1. AVA

Zurich, rank 1

### 2. LUNAPHORE

Lausanne, rank 3

### 3. PIAVITA

Zurich, rank 6

### 4. NANOLIVE

Ecublens, rank 13

### 5. MAXWELL BIOSYSTEMS

Basel, rank 22

How does a company bring a revolutionary technology to market? Many Swiss tech startups face this question, and **Nanolive** has found an interesting answer. The EPFL spin-off has developed the first microscope that can look inside living cells in 3D, without any interference. Nanolive launched a product last year that combines its ground-breaking technology with the proven technology of

fluorescence microscopy. 'We reacted to the feedback from researchers, who wanted to combine the results of our new method with a proven technology,' explains CEO **Yann Cotte**,

adding that this had a very positive impact on the device's acceptance.

The company also benefited from the fact that it enjoys the support of a broad and diverse base of customers, partners and collaborations, which pays off in the form of unique market insight and voice-of-customer developments. The Nanolive tools are now sold through more than 24 partners worldwide.



## 88 LEGAL TECHNOLOGY SWITZERLAND (PROXEUS)

ZURICH, ONLINE

[WWW.PROXEUS.COM](http://WWW.PROXEUS.COM)

Everyone's talking about blockchain, but there are very few applications suitable for everyday use. Antoine Verdon, who has founded several enterprises, has developed a document management system based on blockchain and already tested it for his start-up Proxeus. The initial coin offering (ICO) of his XES Token raised USD 25 million of seed capital within 48 hours. Proxeus has just launched the beta version for blockchain applications that can be created without specific programming knowledge.

## 89 INTERAX BIOTECH

VILLIGEN (AG), BIOTECH

[WWW.INTERAXBIOTECH.COM](http://WWW.INTERAXBIOTECH.COM)

InterAx identifies G protein-coupled drugs with improved efficacy and reduced side effects. Its potential benefits include the advancing of cancer research and a significant reduction in the cost of development of new drugs. The Paul Scherrer Institute spin-off works with universities in Germany and the Netherlands.

## 90 OLYMPE

LAUSANNE, SOFTWARE

[WWW.OLYMPE.CH](http://WWW.OLYMPE.CH)

Users can develop software on Olympe's platform without writing code, and this also applies to distributed industrial systems. The startup is already profitable, less than three years after foundation. Multinational groups such as Givaudan and SICPA are using Olympe to switch their supply and product chains to the Internet of Things. SICPA has also become a strategic investor.

## 91 TWENTYGREEN

ROOT (LU), BIOTECH

[WWW.TWENTYGREEN.COM/](http://WWW.TWENTYGREEN.COM/)

Worldwide, 80% of antibiotics are used in agriculture and excessive use is creating life-threatening resistances. This probiotic, developed by TwentyGreen, strengthens the immune system of animals and replaces the use of antibiotics. At the end of last year, the startup won the ZKB Pionierpreis and completed a funding round. It is now starting the first production of a supplement for fish food.

## 92 TOPADUR PHARMA

SCHLIEREN, BIOTECH

[WWW.TOPADUR.COM](http://WWW.TOPADUR.COM)

Located in the Schlieren biotech park, the startup develops innovative therapies for wound healing. These include a product for the healing of chronic foot wounds in diabetics, which can prevent the need for amputation. The clinical trial is due to start at the end of 2018. Topadur won the Swiss Economic Award in June.

## 93 GLOBAL IMPACT FINANCE (MONITO)

LAUSANNE, FINTECH

[WWW.MONITO.COM](http://WWW.MONITO.COM)

Monito is a comparison website for international money transfer services, and has more than 450 service providers from 170 countries on its books. According to Forbes, the startup is one of the top 10 most promising tech SMEs in 2018. Monito has so far raised CHF 1.5 million in venture capital and is preparing for the next financing round.

## 94 INSIGHTNESS

ZURICH, ENGINEERING

[WWW.INSIGHTNESS.COM](http://WWW.INSIGHTNESS.COM)

Insightness develops high-speed tracking systems, inspired by the human eye, that recognise and localise the environment. Thanks to this system, for example, drones can avoid dynamic

objects. CEO Christian Brändli and his team are working on augmented and virtual reality products.

## 95 XSENSIO

LAUSANNE, MEDTECH  
[WWW.XSENSIO.COM](http://WWW.XSENSIO.COM)

Xsensio uses portable sensor technologies – wearables – that can evaluate biochemical information from body fluids such as sweat. This year, the startup is leading a research consortium, which has received EUR 2.4 million in financing from the European funding and support program Eurostars, for the development of next-generation devices for health monitoring. Xsensio CEO Esmeralda Megally plans to introduce the first product next year.

## 96 VOLUMINA MEDICAL

LAUSANNE, MEDTECH  
[WWW.VOLUMINA-MEDICAL.CH](http://WWW.VOLUMINA-MEDICAL.CH)

This summer, the ETH Lausanne spin-off moved into the life sciences incubator at Biopôle science park, in order to accelerate the development of a biocompatible paste called AdiPearl and go to market quickly. This injectable biomaterial can reconstruct tissue destroyed after the removal of a tumor, or through an accident or a genetic malformation.

## 97 IDUN TECHNOLOGIES

ZURICH, MEDTECH  
[WWW.IDUNTECHNOLOGIES.CH](http://WWW.IDUNTECHNOLOGIES.CH)

To monitor the heart, brain and muscles, several electrodes need to be attached to the patient. In order to improve wearing comfort and signal quality, health scientists Séverine Chardonnes and Simon Bachmann have developed electrodes with mini suction cups, modelled on the grasshopper, that self-adhere. A clinical trial has been started, and in June IDUN closed its first funding round.

## 98 URBANALPS

ZURICH, ENGINEERING  
[WWW.URBANALPS.COM](http://WWW.URBANALPS.COM)

Security keys can be copied using 3D printers. Engineers Alejandro Ojeda and Felix Reinert have developed a stealth key for a secure, mechanical locking system. The mechanical features of this 3D-printed metal key are hidden internally and protected against copying. UrbanAlps' existing customers come from the high-security sector. Negotiations are under way with locking system manufacturers.

## 99 VERITY STUDIOS

ZURICH, DRONES  
[WWW.VERITYSTUDIOS.COM](http://WWW.VERITYSTUDIOS.COM)

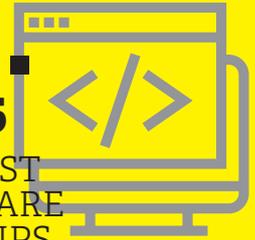
ETH Zurich spin-off Verity Studios is the leading provider of commercial autonomous indoor drones for live events. Verity has just raised USD 18 million in an initial funding round from investors including Airbus and Sony, and will use the financing to expand growth in the US market and take its security technology into new areas of autonomous flying objects.

## 100 INOFEA

BASEL, BIOTECH  
[WWW.INOFEA.COM](http://WWW.INOFEA.COM)

Last December, Inofea raised a second tranche of seed funding from business angels. The spin-off from the University of Applied Sciences of North-West Switzerland has developed a nanotechnology platform technology that can be used to protect enzymes and enhance them with new properties. Inofea is focusing on several lines of business, including licensing and direct sales of enzymes.

## TOP 5 THE BEST SOFTWARE STARTUPS



### 1. BESTMILE

Lausanne, rank 2

### 2. EXEON ANALYTICS

Zurich, rank 12

### 3. IMVERSE

Plan-les-Quates, rank 14

### 4. ORBIWISE

Plan-les-Quates, rank 15

### 5. SCANTRUST

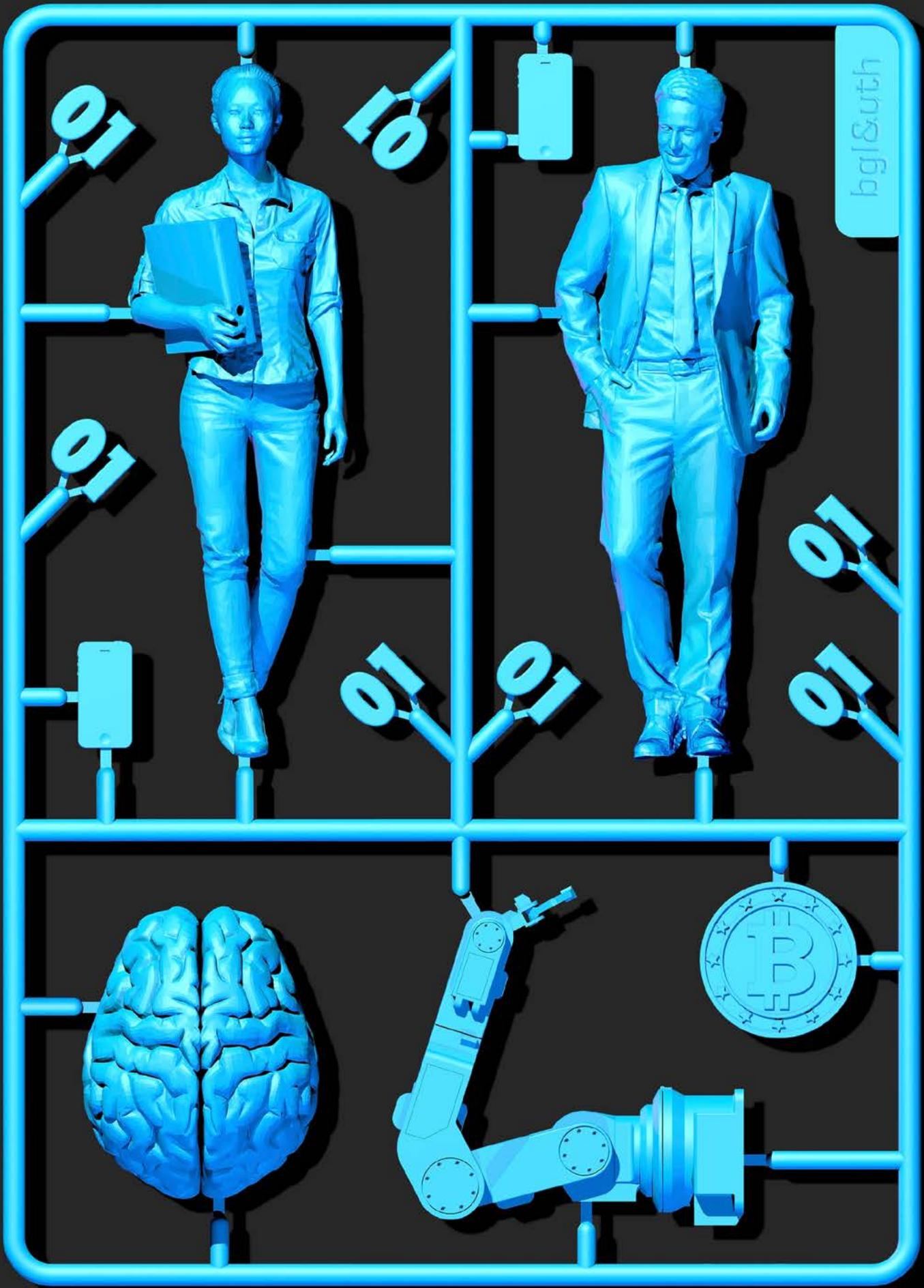
Lausanne, rank 16

The Sundance Film Festival, which takes place every January, is best known to film buffs. But it is where well-known directors such as Quentin Tarantino and Swiss film-maker Marc Forster made their breakthrough. The festival has become one of the most important marketplaces for new technology in the film industry, so Swiss startup Imverse could soon also become a well-known name. In January 2018,



**Imverse** caused a sensation at the festival with its technology, which can create 3D content extremely quickly. 'It means, for example, that users in a virtual reality film are no

longer represented by an avatar but by a 3D hologram of themselves,' explains CEO **Javier Bello Ruiz**. Behind this cool application is a technology with the potential to revolutionise the graphics for 3D content on computers and smartphones. Virtual reality is just the first market for the start-up. Javier Bello is convinced: 'We can become as important as Adobe.'



# DEEP TECH NATION

Machines do it, people do it: generate data. It's now about handling this commodity intelligently.

Illustrations: Brigitta Garcia Lopez

**M**artin Vetterli has his eye on the big picture: 'History,' says the president of EPL Lausanne, 'teaches us that every industrial revolution takes value creation a step higher; from agricultural products to machines and now from machines to data.'

The current data revolution has many faces: it is driven by enabling technologies, such as cryptography, data sciences, artificial intelligence, sensory technology and software engineering. It makes applications such as self-driving vehicles, the Internet of Things and distributed databases possible. And it opens up completely new perspectives in material, medical, micro and gene technologies.

Take blockchain as an example. Who can I trust? What do I do if my counterpart abuses my trust? This question has been driving people for millennia, but now it seems a partial solution may be available. A database that provides forgery-proof documentation of all the participants' transactions replaces trust with transparency.

Thomas Dübendorfer is a serial entrepreneur who has been involved in about 20 tech startups. He goes into raptures when he talks about the opportunities offered by the use of blockchain for peer-to-peer databases: 'We are reinventing the internet!' he exclaims.

European universities are leading the way in cryptography, the fundamental science that underlies blockchain technology. 'We now need to maintain this lead, expand it and above all ▶

## Artificial intelligence

Whether Nestlé, MunichRe, Bayer or Swisscom, new customers of Zurich-based AI firm Starmind are given a giant glass brain for illustrative purposes. It flashes and lights up every time two employees come together and share their knowledge. 'We link up people with the help of artificial intelligence,' explains Starmind co-founder Pascal Kaufmann. Behind the glass brain is a knowledge platform that learns who in a company knows what, and how they

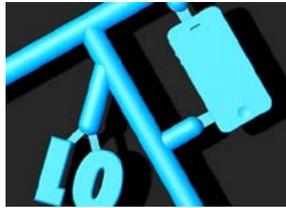


are available. Technologically, Kaufmann and his co-founder Marc Vontobel do not rely on the common big data machine learning methods, but instead on small data and Hebbian theory, which originates from neuroscience. This approach is seen as extremely promising around the world. Founded in

2010 and with roots in the ETH artificial intelligence laboratory in Zurich, the company is profitable, growing fast and in May this year raised CHF 15 million in risk capital. The headcount is due to rise from 45 to just under 100 in the medium term. At the beginning of the year, Starmind became the first Swiss AI company to be added to Microsoft's global accelerator programme ScaleUp.

## Internet of Things

In the past, if something – a fridge, a drill or a car park sensor – wanted to download information wirelessly, it needed a SIM card or wifi adapter. Both interfaces need a lot of electricity, have a small reach (wifi) or are expensive (SIM card). The solution is a Low Power Wide Area Network (LPWAN). Julian Studer, co-founder of Thalwil-based start-up Lorient, is convinced that 'this low-power network with a reach of a kilometre will get the Internet of Things really going'.



Having worked for many years as an investment banker, he and former IBM researcher Vit Prajzler started up an operating system for LPWAN applications that has set a benchmark. One of its customers is Lucerne's water and power company, Energie Wasser

Luzern (ewl). The utility uses the Lorient platform to regulate Lucerne's traffic, which is spiralling out of control, by means of occupancy sensors in the town's car parks. Lorient has taken it even further in middle and eastern Europe. In the Czech Republic, Slovakia, Hungary and Austria, local telcos are building nationwide LPWAN networks with Lorient technology. In parallel, the Zurich startup operates public servers on all five continents where third-party IoT networks can be set up. Even NASA is a user of the Miami server.

► use it to set up disruptive business models,' says Dübendorfer. Otherwise, Europe faces the threat of something that has already occurred before – the Americans will take over.

Indeed, a large proportion of global data traffic passes through the servers of GAFA. An acronym standing for Google, Apple, Facebook and Amazon, GAFA also includes Microsoft and global sector platforms such as Netflix and Booking.

### Insatiable GAFA

For researcher and science manager Vetterli, this is disturbing: 'There's no way that 30% of sales from a digital advertising deal in Europe should flow to California.' But that's exactly what happens, and no longer exclusively in B2C business.

Cloud platforms such as Microsoft's Azure or Amazon Web Services (AWS) are also used by industry. Traditional mechanical engineers lease easily scalable storage space and use the apps provided by the operators themselves or by third parties.

So deep tech stands not only for scientific and technical expertise, but also for the will of Europeans to carve out their place in the new data world. EPFL boss Vetterli and investor Thomas Dübendorfer both say that companies need to get involved in areas above and beyond the pure digitization of



## Robotics

The world's first marketable walking robot is Swiss. Called ANYmal, it is sold by ETH spin-off ANYbotics. The quadruped moves like a motorised cat in slow motion, seeking out its destination by means of stored map information or spontaneously via on-board cameras.

'The key element is the 12 joints with power sensors,' says ANYbotics CEO Hanspeter Fässler. These ANYdrives enable the robot to recognise external forces – such as an obstacle – and react to it in real-time.



After more than 100 man years of development of ANYmal at ETH, Fässler and his 18-strong team now have to commercialise this unique expertise. Fässler is not lacking in experience. Until

2015, he had a corporate career that took him, inter alia, to the top of ABB Switzerland and construction firm Implenia.

The first buyers of ANYmal come from an academic environment, but ANYbotics is aiming for the commercial market. 'It would be interesting, for example, to employ ANYmal on offshore platforms,' Fässler says. The Swiss robot could conduct inspections, read sensors and trigger an alarm if a leaking pipe is discovered, whatever the weather.

business models. A profitable area is the development of artificial intelligence.

AI is what the EU commission calls a key enabling technology on which the old continent can build. Niklas Zennström, CEO of UK venture capital firm Atomico and co-founder of Skype, wanted to find out the truth.

For the State of European Tech 2017 report, he asked founders and investors to identify the technology areas in which Europe would have a chance of becoming innovation leader within five years. The most mentions went to AI, cyber security, robotics and virtual reality.

'Europe, and Switzerland in particular, has the best prerequisites to get to grips with the digital transformation,' says Felix Mayer, co-founder and co-chairman of Sensirion. He should know because his company manufactures a key component of the data industry: sensors.

Sensirion is a global market leader in humidity, temperature and flow sensors. The small sensors sit in equipment like ventilators and air conditioning units. There is hardly a country where a sensor from the Stäfa-based company does not convert real-world states into digital signals. ►

**EPFL president Martin Vetterli: 'Computational thinking is our new basic subject.'**



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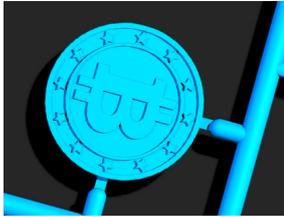
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# Blockchain

Olga Feldmeier has big plans. She wants Zug startup Smart Valor to build a platform for the creation and trading of programmable assets; these are contracts stored in a blockchain that guarantee the owner the right to an asset in the real world – part of a house, a share or a bond. The project is complex because it requires knowledge in three areas: financial market regulation, asset management and blockchain technology. The financial know-how



comes from Feldmeier herself, a Ukrainian national; before becoming self-employed, she worked for Barclays in London and at UBS. For cryptography and security, she has employed a top international, Frenchman Julien Bringer. A prototype of Smart Valor is due to go operational in the autumn. The full

version still needs a securities license from FINMA, for which it has now applied.

'We give companies and individuals the opportunity to do business together without the involvement of banks or trustees,' explains Feldmeier.

The medium-term plan for Smart Valor is to establish itself as one of the world's leading trading venues for digital assets. Its investors include Geneva-based serial entrepreneur Stéphane Pic-tet, a member of the eponymous private banking dynasty.

► Mayer and co-founder Moritz Lechner were doing deep tech before the term even existed. In 1998, they made the leap into self-employment with semiconductor technology developed at ETH Zurich. Sensirion was listed on the Swiss stock exchange at the beginning of the year. Its current market capitalisation is about CHF 600 million.

## Millions for deeptech start-ups

Stories like this will happen again and again, thanks to the fast-growing pipeline of deep tech startups which are in hot demand with investors. 'At the Venture Leaders roadshows in the US, Britain, India and China, our startups had meetings with the best risk capitalists in the world,' confirms Stefan Steiner, co-managing director of Venturelab. Another indicator comes from the Swiss Venture Capital Report. Every year, it lists the 20 largest funding rounds. In 2017, this included four rounds with companies that make their money with big data: Sophia Genetics, global leader in data-driven medicine, raised just under CHF 30 million.

Jurgi Camblong, founder and CEO of Sophia Genetics, is a member of the new Digital Transformation board of the Federal Council, alongside Martin Vetterli, Federal Councillor Ruedi Noser and Jürgen Schmidhuber, director of IDSIA, the internationally recognised AI laboratory at the University of Lugano.

They all have the same aim: making the innovation location of Switzerland fit for the digital future. A high priority here is to train the next generation of scientists and technicians, which is why EPFL has expanded its canon of core subjects for the coming winter semester. In addition to mathematics and physics, it is now offering computational thinking. ●



## DAVID VERSUS GOLIATH

GETYOURGUIDE, A TOUR AND ACTIVITIES PLATFORM FOUNDED IN ZURICH, IS DEFYING THE US SUPER-POWER.

There's always a hard battle in platform business, and in the end the Americans win. ETH spin-off GetYourGuide, co-founded by CEO Johannes Reck, wants to prove there are exceptions to this unwritten rule. According to Phocuswright, a market research company that specialises in travel, GetYourGuide is one of the world's three largest online sellers of tickets for tours, museums and other leisure activities. Its competitors are two US companies: TripAdvisor subsidiary Viator and online travel group Expedia.

GetYourGuide raised more than CHF 75 million of finance last year to keep going. Its staff of 450 manage and market offers in 22 languages; since last year, customers can now book a skip-the-line ticket for the Sistine Chapel in Chinese, Japanese and Russian. But the main thing is that the company is growing fast.

GetYourGuide sold 10 million tickets from its foundation in 2008 to 2016, and 6 million in 2017 alone. Meanwhile, it has even succeeded in establishing itself in the US, which it says is one of its most important source markets.

The five founders came up with their business concept during a Venturelab term course, where they also met their first business angel. Although the company's focus has shifted since 2011 towards Berlin, its Zurich branch remains the tech location and will be expanded massively as part of the growth plans, with the current staff of 25 due to double.



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**Cristian Grossmann, what does a founders' breakfast at Beekeeper look like?**

Cristian Grossmann: CTO Flavio Pfaffhauser and I meet every Wednesday morning for coffee and croissants. We exchange ideas and clear our minds; no agenda and we don't look at the key performance indicators.

**You both started with a flirting platform for students. Now you have customers including Heathrow airport and the Hilton hotel chain. How did that come about?**

The blickClick flirting platform was all about communication and building groups via smartphones. What we lacked was a business model. Until one day we wondered whether we could also use an app with news feed and chat functions for internal communication within companies. Everything then moved very fast: we ran a pilot project at three Swissôtel locations and shortly after that Swissôtel was taken over by the Canadian FRHI Group, so we had the opportunity to roll out the Beekeeper app for 50,000 employees.

**You're focusing on the hotel industry, construction and industry in general; sectors where a lot of manual work still exists. Why?**

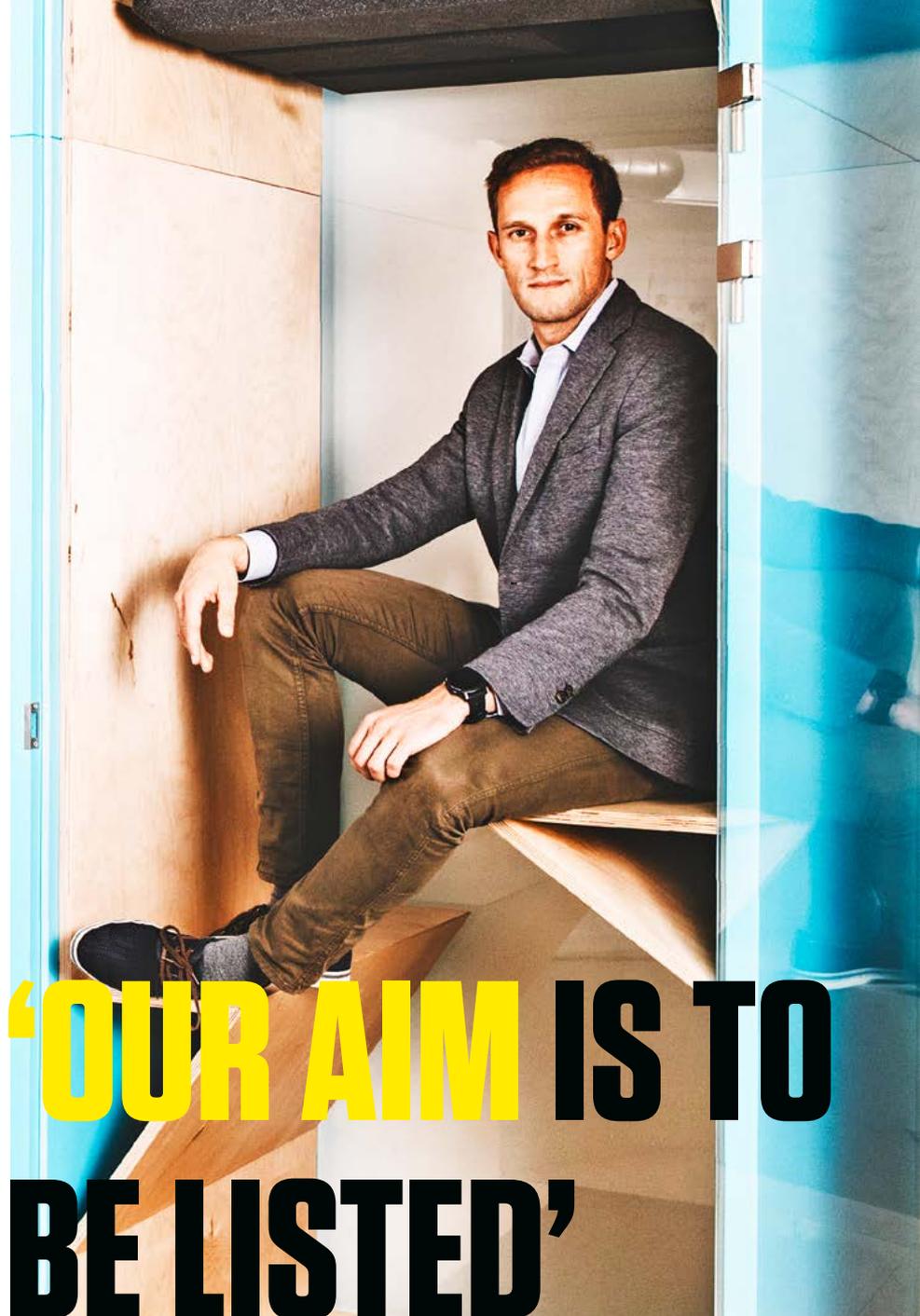
Because there have been software and internal communication systems for office workers for ages. That market is dominated by giants such as Salesforce and Microsoft. If you add up the market capitalisation of all existing companies, it comes to USD 180 billion. Conversely, up until a few years ago, there were very few solutions for communicating with blue-collar workers. It's a gap we have squeezed into.

**What's the competition like?**

There are a couple of competitors, but their platforms are set up for the needs of specific industries, whereas Beekeeper is for all sectors.

**Which in turn places high demands on marketing and sales. How are you going about this?**

We are trying to be as close as possible to our existing and potential clients. We have operational bases in Zurich and San



**'OUR AIM IS TO BE LISTED'**

Beekeeper is one of Europe's fastest growing startups. The founder and CEO, **Cristian Grossmann**, explains how he is managing expansion.

Francisco, and we are also running branches in London, Berlin, Madrid and Austin, Texas.

**Beekeeper has raised about CHF 26 million in capital to date. Is the next financing round imminent?**

We'll be ready at the start of 2019. We will close the next big round and put the money into further expansion: for example, building up a 100-strong team for software development, either in Poland or Portugal.

**At the same time, you are pursuing the Marketplace project. What's it all about?**

The best thing to compare it to is Apple's App Store or Google Play. Our Beekeeper platform is its operating system and can be used for running apps – ours and also third-party apps; for example, from customers and independent software developers – with additional functionality. This ecosystem approach is a way of accelerating our expansion.

**Funding rounds, new business models and more and more staff: how do you keep on top of it all?**

It's a challenge, but it's not black magic. The key thing is planning. As the boss of a fast-growing company, I always need to be thinking today about what will be needed tomorrow.

**Such as?**

Take the management structures, for example. If a startup has more than 15 staff, it becomes difficult for the founders to communicate directly with every individual person. You have to define responsibilities and delegate and control. When we reached this stage, we set up an eight-strong management team.

**So every other employee became a manager. Did that make sense?**

Definitely, because we created the organisational requirements for a company with 50 to 60 employees. I think that's the next tipping point, which is why we were quick to set up a middle management team that can lead 150 employees.

**You're likely to reach that threshold this year. What then?**

We are currently establishing training courses for future Beekeeper managers, based on role models and tried and tested practices. In a medium-sized business, an instruction and control system reaches its limits, so the aim is for participants to internalise our corporate culture.

**Switzerland has a lack of specialists. Where do you find all the people to recruit?**

## The engineer

Mexico-born Cristian Grossmann came to Switzerland to study. He gained a Master's in chemical engineering from ETH Zurich and then a doctorate in electro engineering. During the Venturelab courses, he worked on business models and founded Beekeeper with three colleagues. In his leisure time, the 37-year-old spends six to 10 hours a week on sporting activities.

# 'I make complicated things simple.'

Cristian Grossmann

We currently have 34 nationalities in our team. We recruit globally and are benefiting, for example, from Brexit, because it has forced many highly qualified people in the UK to look for a job on the Continent. The key factor is that we offer attractive jobs; besides a motivating environment, that includes things like an employee share option program.

**That sort of programme is complicated and time-consuming to manage.**

You obviously have to comply with certain rules and processes. But the same applies to data protection or employing non-EU nationals. My job is to set up internal processes that make complicated things simple.

**That doesn't sound particularly spectacular...**

...but our investors are very appreciative. An investor wants to see us grow, but we can achieve that only if we do our homework correctly.

**Looking ahead, where is Beekeeper heading?**

Around the world, 600 million people work in front of screens at office desks. More than three times that number – more than 2 billion – work outside on building sites, in warehouses, factories or hotels. Managers can communicate digitally with these people only via smartphones. Our aim is that 500 million employees will use our app by 2030.

**What are the implication of this for a potential exit?**

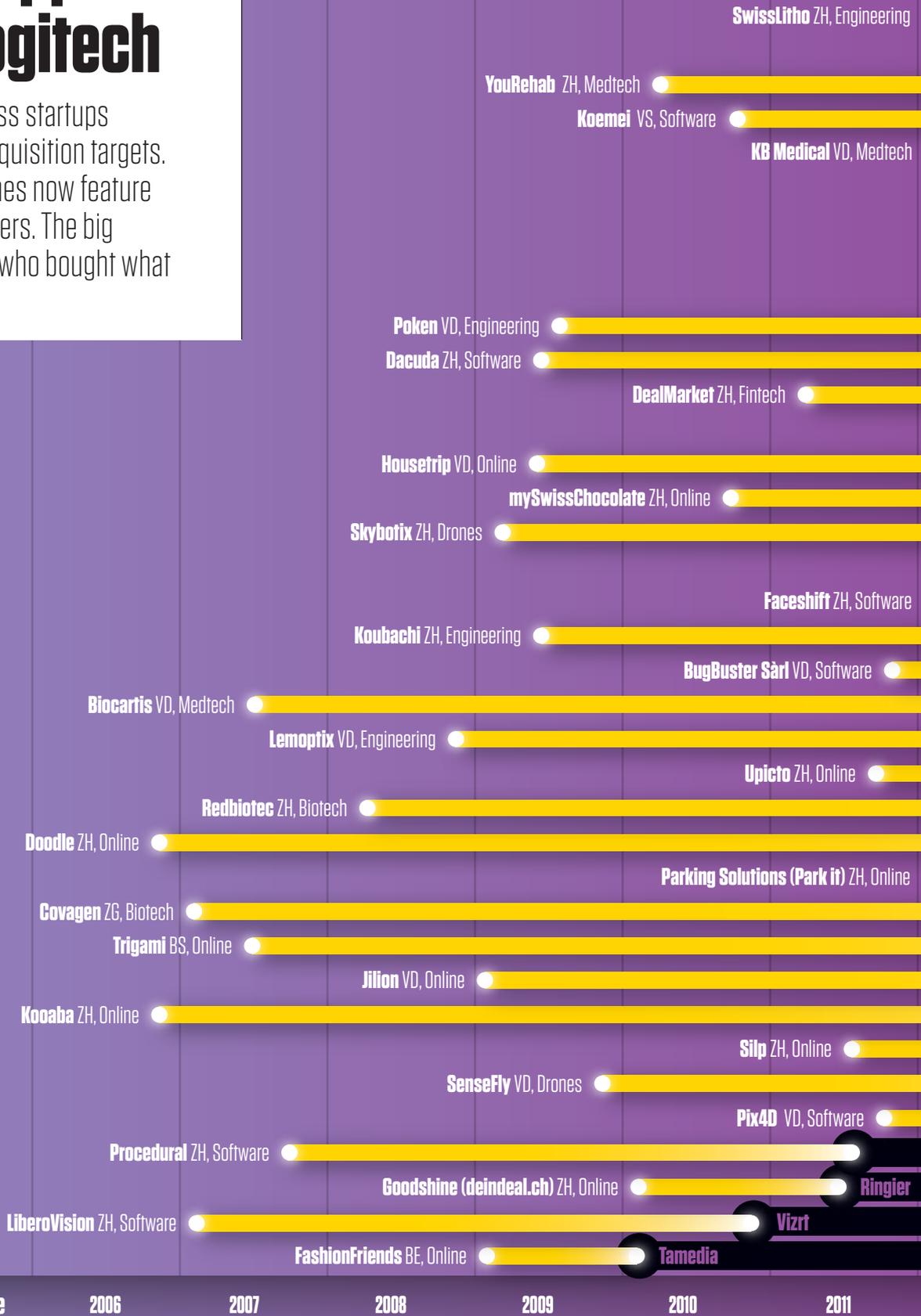
We are currently market leader with 2 million app users. If we manage to keep this position, a trade sale and thus loss of independence does not make sense. A company that's number one in a large, international market should be listed on the stock market.

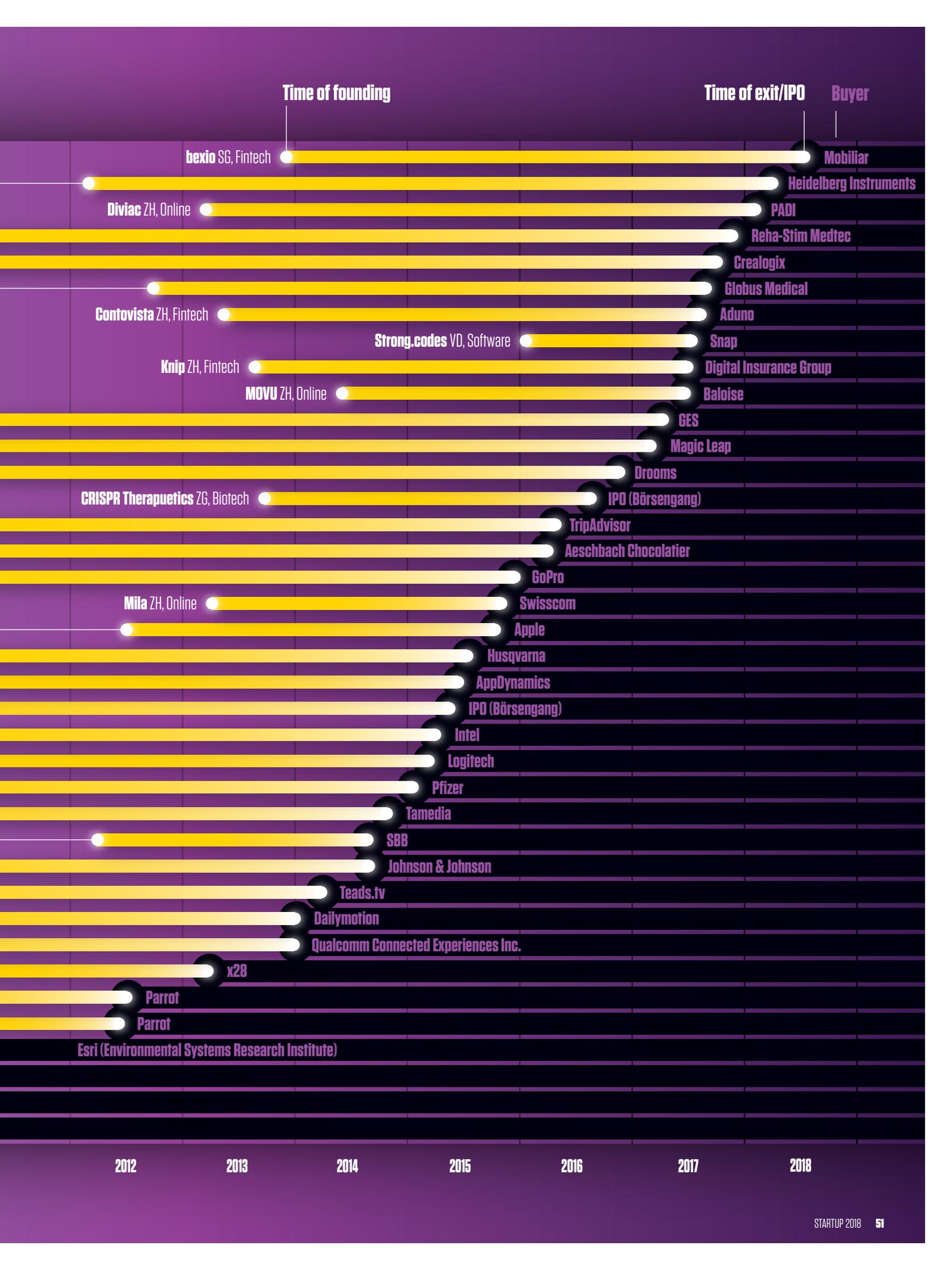
**What makes you sure you can achieve this goal?**

The experience of our customers' staff. When I was in San Francisco recently, I talked to a cleaner who uses our app. She used to have to spend an hour and a half driving to the office on a Sunday afternoon to view the shift schedules for the following week. Beekeeper saves her this journey. She had tears in her eyes when she was telling me this.

# Intel, Apple and Logitech

Innovative Swiss startups are coveted acquisition targets. Prominent names now feature among the buyers. The big picture shows who bought what and when.





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**Inputs:** news@startupticker.ch

# THE EXPERTS WHO KNOW THE SCENE

One hundred proven experts have chosen the 100 best startups in 2018. Each one selected and rated their 10 personal favourites: 10 points for rank 1, one point for rank 10. The final ranking is based on the total number of points awarded by all jurors.

## A

**Carole Ackermann, Zurich.** President, Business Angels Switzerland (BAS). CEO, Diamondscull, investment firm in the medical and environmental sector. Member of several boards.

[www.diamondscull.ch](http://www.diamondscull.ch)

**Michael Altdorfer, Zurich.** CEO, Swiss Biotech Association. [www.swissbiotech.org](http://www.swissbiotech.org)

**Lukas André, Zurich.** Venture partner, investment company Redstone Digital GmbH, Berlin.

Co-founder, various IT start-ups. [www.redstone.vc](http://www.redstone.vc)

**Rolf Auf der Maur, Zurich.** Partner, law firm VISCHER. IT legal expert. Business angel.

Venture Kick jury member. [www.vischer.com](http://www.vischer.com)

## B

**Thomas Bähler, Bern.** Partner, Kellerhals Carrard, private equity/venture capital. Business angel.

Jury member, Swiss Economic Award. SEF4KMU expert. [www.kellerhals-carrard.ch](http://www.kellerhals-carrard.ch)

**Patrick Barbey, Lausanne.** Managing director, InnoVaud promotion agency. Co-founder, several start-ups. [www.innovaud.ch](http://www.innovaud.ch)

**Brigitte Baumann, Zurich.** Co-founder and chairwoman, business angel platform Go Beyond Early Stage Investing. European Business Angel of the Year 2014. [www.go-beyond.biz](http://www.go-beyond.biz)

**Marc P. Bernegger, Zurich.** Serial entrepreneur. Angel investor with a focus on fintech and crypto assets. Board member, Crypto Finance Group.

[www.cryptofinance.ch](http://www.cryptofinance.ch)

**Laurent Bischof, Lausanne.** Managing Partner, Polytech Ventures. Focus: early phase and Series A funding for high-tech start-ups. Director, Fintech Factory. [www.polytechventures.ch](http://www.polytechventures.ch)

**Philip Bodmer, Dübendorf.** President, Swiss Federal Foundation for Promotion of the National Economy through Scientific Research. Business Angel of the Year 2017. Venture Kick jury member.

[www.volkswirtschaft-stiftung.ch](http://www.volkswirtschaft-stiftung.ch)

**Silvio Bonaccio, Zurich.** Head, ETH transfer/spin-offs. Co-founder and member, Swiss Technology Transfer Association (swiTT).

[www.transfer.ethz.ch](http://www.transfer.ethz.ch)

**Diego A. Braguglia, Zug.** General partner, venture capital company VI Partners. Focus: life sciences/biotech. [www.vipartners.ch](http://www.vipartners.ch)

**David Brown, Lausanne.** Founder/co-founder, various start-ups including buy.at and Flyability. Venture Kick jury member. Business Angel of the Year 2016. [www.hightechfondue.com](http://www.hightechfondue.com)

**Beat Bühlmann, Zurich.** Active business angel. Board president, Ferrum AG. Board member, Invision Private Equity AG. [www.ferrum.net](http://www.ferrum.net)

**Nicolas Bürer, Zurich.** Managing Director, digitalswitzerland. Start-up manager and investor. Business Angel of the Year 2018. [www.digitalswitzerland.com](http://www.digitalswitzerland.com)

## C

**Amanda Chang, Versoix (GE).** Manager, Yellowstone Holding. Long-term investments in Swiss companies entering the Asian market. [www.yellowstoneholding.ch](http://www.yellowstoneholding.ch)

**Raphaël Conz, Lausanne.** Responsible for business development and innovation policy, canton of Valais. [www.vd.ch/promotion-economique](http://www.vd.ch/promotion-economique)

## D

**Alberto De Lorenzi, Bioggio.** Founder, multiple enterprises. Business angel with a focus on ICT start-ups. Partner, De Lorenzi & Partners. [www.delorenzi.ch](http://www.delorenzi.ch)

**Alberto De Min, Geneva.** CEO, Preon Capital Partners. Co-founder and board member, several start-ups. Venture Kick jury member. [www.preoncapital.com](http://www.preoncapital.com)

**Marcel Denner, Zurich.** Corporate venturing & development, Swiss Prime Site Management AG. [www.sps.swiss](http://www.sps.swiss)

**William Dougherty, Zurich.** Head, investment strategies, family office QdN Partners. Business angel. Venture Kick jury member. [www.venturekick.ch](http://www.venturekick.ch)

**Thomas Dübendorfer, Zurich.** Internet entrepreneur and business angel. President, Swiss ICT Investor Club (SICTIC). [www.sictic.ch](http://www.sictic.ch)

**Florian Dünner, Zurich.** Investment manager, startup finance, Zürcher Kantonalbank. [www.zkb.ch](http://www.zkb.ch)

**Pascal Dutheil, Lausanne.** Founder, Andromede Consulting, high-tech startup coaching and venture capital. Focus: seed and early stage. [www.andromede.ch](http://www.andromede.ch)

## E

**Markus A. Eugster, Zurich.** Active business angel and start-up board member. Focus: finance and insurance sector. [www.markusaeugster.biz](http://www.markusaeugster.biz)

## G

**Antonio Gambardella, Plan-les-Ouates (GE):** Director, Geneva start-up incubator Fongit. Venture capital expert and angel investor. [www.fongit.ch](http://www.fongit.ch)

**Frank Gerritzen, Lausanne.** President and jury member, Business Angels Switzerland (BAS). Founder, Swiss branch of Wealth Peer Group. [www.businessangels.ch](http://www.businessangels.ch)

**Eric Gisiger, Zurich.** Partner, investment company Helvetica Capital. Chartered financial analyst. [www.helvetica-capital.ch](http://www.helvetica-capital.ch)

**Patrick Griss, Schlieren.** Co-founder and executive partner, Zühlke Ventures. Focus: high-tech startups. Member of the advisory board, Empa technology centre Glatec. [www.zuehlke.com](http://www.zuehlke.com)

**Daniel Gutenberg, Zug.** General partner, venture capital company VI Partners. Focus: IT. Business Angel of the Year 2011. [www.vipartners.ch](http://www.vipartners.ch)

## H

**Trudi Haemmerli, Basel.** Board member, Innosuisse – Swiss Innovation Agency. CEO, life sciences startup. Business angel with focus on pharma, medtech and ICT. [www.innosuisse.ch](http://www.innosuisse.ch)

**René Hausammann, Winterthur.** CEO, Swiss Parks, association of Swiss technology parks and incubators. Founder and long-standing CEO, Technopark Winterthur. [www.swissparks.ch](http://www.swissparks.ch)

**Wolfgang Henggeler, Zurich.** Expert in patents and research contracts, Unitecra (technology transfer organisation for the universities of Zurich, Bern and Basel). [www.unitecra.ch](http://www.unitecra.ch)

**Reto Hertler, Zurich.** Head, private equity/venture capital, family office Wille Finance AG. Founder, FriendsTip (Venturetech AG). [www.friendstip.com](http://www.friendstip.com)

**Bolko Hohaus, Geneva.** CEO and founder, asset management company HCP Hohaus Advisory Board member, Swiss ICT Investor Club (SICTIC). [www.hcp.ch](http://www.hcp.ch)

**Matthias Hölling, Zurich.** Team leader, Technopark Zurich. Jury member/expert, ZKB Pionierpreis and Swiss Technology Award. [www.technopark.ch](http://www.technopark.ch)

**David Hug, Zurich.** Managing director, Ringier Digital Ventures. Board member, several startups. [www.ringierdigital.ch](http://www.ringierdigital.ch)

**Thomas Huth, Baar.** Founder, multiple enterprises, and startup investor. Board member, several startups. [www.startup.ch](http://www.startup.ch)

## J

**Michel Jaccard, Lausanne.** Founder/partner, id est avocats sàrl. Expert in corporate finance, new technology and media. Jury member, numerous startup awards including Prix Strategis. [www.idest.pro](http://www.idest.pro)

**Mario Jenni, Schlieren.** Founder, multiple enterprises. CEO and founder, Bio-Technopark Schlieren life sciences centre. Managing director, Empa technology centre glatec. [www.bio-technopark.ch](http://www.bio-technopark.ch)

**Andreas Jurgeit, Amsterdam.** Investment manager with focus on life sciences. Board member, Indi Molecular. [www.indimolecular.com](http://www.indimolecular.com)

## K

**Matthias Kaiserswerth, Bern.** Managing director, Hasler Foundation; former director, IBM Zurich Research Laboratory. [www.haslerstiftung.ch](http://www.haslerstiftung.ch)

**Martin Kauert, Bern.** Head, energy solutions, energy company BKW. [www.bkw.ch](http://www.bkw.ch)

**Bea Knecht, Zurich.** Active angel investor. Founder and board president, web TV platform Zattoo. [www.zattoo.com](http://www.zattoo.com)

**Cédric Koehler, Zurich.** Managing partner, European investment company Creathor Venture. Focus: ICT, media, new materials. [www.creathor.ch](http://www.creathor.ch)

**Marjan N. Kraak, Zurich.** Group leader, spin-off companies, ETH Zurich/ETH transfer. Manager, Pioneer Fellowship program. Board of trustees member, Startupticker Foundation. [www.transfer.ethz.ch](http://www.transfer.ethz.ch)

**Pius Küng, St. Gallen.** Business angel. Owner, Dr. Pius Küng & Partner. Co-founder, IFJ Institut für Jungunternehmen. [www.kueng-partner.ch](http://www.kueng-partner.ch)

**Stefan Kyora, Lucerne.** Co-founder and editor-in-chief, news platform startupticker.ch. Editor, Swiss Venture Capital Report. Managing director and partner, JNB Journalistenbüro. [www.startupticker.ch](http://www.startupticker.ch)

## L

**Jean-Philippe Lallement, Geneva.** Director, EPFL Innovation Park. Business angel. Co-founder, several startups, including Prediggo and Attolight. Board of trustees member, startupticker.ch. [www.epfl-innovationpark.ch](http://www.epfl-innovationpark.ch)

**Yves Latour, Zurich.** Partner and founder, 3w Ventures. Partner and management, startup Lunchgate. [www.3wventures.com](http://www.3wventures.com)

**Hervé Lebreton, Lausanne.** Manager, support program Innogrants, ETH Lausanne. Former venture capitalist, Index Ventures.  
[www.startup-book.com](http://www.startup-book.com)

**Chandra Paul Leo, expert in private equity and venture capital.** Investment advisor, HBM Partners. Multiple board member.  
[www.hbmpartners.com](http://www.hbmpartners.com)

**Ariel Lüdi, Zurich.** Active angel investor. Founder and owner, Hammer Team, accelerator for software start-ups. [www.hammerteam.ch](http://www.hammerteam.ch)

## M

**Karim Maizar, Zurich.** Partner and head, startup desk, Kellerhals Carrard. Specialisation: company law, corporate financing. Board member, Swiss Startup Association. [www.kellerhals-carrard.ch](http://www.kellerhals-carrard.ch)

**Pascal Mathis, Zurich.** Co-founder, GetYourGuide. Partner, startup coaching firm Wingman. Business angel. Active board member, several startups. [www.wingman.ch](http://www.wingman.ch)

**Dominique Mégret, Bern.** Head, Swisscom Ventures. Co-founder, Kickstart Ventures.  
[www.swisscom.ch/ventures](http://www.swisscom.ch/ventures)

**Didier Mesnier, Geneva.** Executive officer, Alp ICT, high-tech cluster western Switzerland.  
[www.alpict.com](http://www.alpict.com)

**James Miners, Plan-les-Quates.** Serial entrepreneur. Business adviser, Geneva incubator for high-tech business Fongit. [www.fongit.ch](http://www.fongit.ch)

**Felix Moesner, Shanghai.** Swiss Consul. CEO, Swissnex China. Co-organiser, Venture Leaders China. [www.swissnexchina.org](http://www.swissnexchina.org)

**Jordi Montserrat, Lausanne.** Co-founder and partner, Venturelab. Managing director, Venture Kick and Venturelab. Business angel and startup executive board member. [www.venturelab.ch](http://www.venturelab.ch)

**Carolina Müller-Möhl, Zurich.** Investor and multiple board member. Board president, Müller-Möhl Group. [www.mm-grp.com](http://www.mm-grp.com)

## N

**Michael Näf, Zurich.** Co-founder, doodle.com. Venture partner, Cavalry Ventures. Business angel and multiple board member. [www.cavalry.vc](http://www.cavalry.vc)

**Steven Neftel, Geneva.** Director, Forestay Capital, growth equity/venture capital. Director, Waypoint Capital, investment company of Ernesto Bertarelli. [www.forestaycapital.com](http://www.forestaycapital.com)

**Peter Niederhauser, Zurich.** Serial entrepreneur and angel investor. Founding partner, venture capital company Redalpine Venture Partners. [www.redalpine.com](http://www.redalpine.com)

**Lutz Nolte, Bern.** Director, Institute for Surgical Technology and Biomechanics, University of Bern. [www.istb.unibe.ch](http://www.istb.unibe.ch)

## O

**Magne Y. Orgland, Teufen.** Business angel. Managing partner, Norga Capital and Meridian Capital Holding. Venture Kick jury member. [www.startup.ch](http://www.startup.ch)

**Markus Oswald, Schwyz.** Venture capitalist. CEO, innovation foundation, Schwyzer Kantonalbank. [www.szkb.ch/innovationsstiftung](http://www.szkb.ch/innovationsstiftung)

## P

**Maurice Pedergrana, Zug.** CEO, SECA Swiss Private Equity & Corporate Finance Association; partner, Zugerberg Finanz AG. Professor, banking and finance, Lucerne University of Applied Sciences and Arts. [www.seca.ch](http://www.seca.ch)

**Eric Plan, Sion.** General secretary, CleantechAlps, cleantech cluster for western Switzerland. Steering board member, Swiss Water Partnership. Coach at cimARK. [www.cleantech-alps.com](http://www.cleantech-alps.com)

**Stefan Portmann, Rüschlikon.** Active angel investor and professional board member, Luzerner Kantonalbank, Calida, Stöckli Swiss Sports, Flaschenpost Services (online wine merchant). [www.calidagroup.com](http://www.calidagroup.com)

**Jim Pulcrano, Geneva.** Professor, IMD Business School. Coach, IMD Startup Competition. [www.imd.org](http://www.imd.org)

## R

**Jost Renggli, Zurich.** Co-founder and partner, rating platform Venture Valuation for technology companies. [www.venturevaluation.com](http://www.venturevaluation.com)

**Simone Riedel Riley, Zurich.** Head, Swiss Technology Fund. Expert in corporate funding, Emerald Technology Ventures. [www.technologyfund.ch](http://www.technologyfund.ch)

**Max Rimpel, London.** Investor, Index Ventures. Focus: early phase investments in technology sector. [www.indexventures.com](http://www.indexventures.com)

**Andreas Roth, Zurich.** Director, Credit Suisse; presenting partner, TOP 100 Swiss Startups. Expert in startup and SME funding solutions. [www.credit-suisse.com](http://www.credit-suisse.com)

## S

**Christian Schaub, Zurich.** Angel investor. Co-founder and CEO, Redbiotec. Mentor and coach, Venturelab. [www.redbiotec.ch](http://www.redbiotec.ch)

**Beat Schillig, St. Gallen.** Founder and president, Institut für Jungunternehmen (IFJ) and Venturelab. Initiator, Venture Leaders, Venture Kick and TOP 100 Swiss Startups. Business Angel of the Year 2012. [www.ifj.ch](http://www.ifj.ch)

**Daniel Schoch, Zurich.** Head, startup finance, Zürcher Kantonalbank. Jury member, ZKB Pionierpreis Technopark. [www.zkb.ch](http://www.zkb.ch)

**Jens Schulte, Bern.** Head, corporate venture capital, PostFinance. [www.postfinance.ch](http://www.postfinance.ch)

**Peter Schüpbach, Langenthal.** Business angel. Founder, multiple enterprises including Miracle, Fashion Friends, SwissCommerce. Partner, NewBorn Ventures. Focus: ICT projects. <http://peters.wordpress.com>

**Florian Schweitzer, St. Gallen.** Co-founder and partner, business angel network b-to-v Partners AG. [www.b-to-v.com](http://www.b-to-v.com)

**Paul E. Sevinç, St. Gallen.** Co-founder, Doodle AG, angel investor with IT focus. [www.squeng.com](http://www.squeng.com)

**Michael Sidler, Zurich.** Business angel. Founder and partner, Redalpine Venture Partners. Start-up coach. Board member, SECA. [www.redalpine.com](http://www.redalpine.com)

**Roland Siegwart, Zurich.** Co-director, Wyss Zurich (WTZ). Professor, autonomous mobile robots, ETH Zurich. Co-founder, several ETH spin-offs. [www.wysszurich.uzh.ch](http://www.wysszurich.uzh.ch)

**Robert Skrobak, Zurich.** Senior client advisor, Rothschild Bank. Partner, Venturelab. [www.rothschild.ch](http://www.rothschild.ch)

**Philipp Stauffer, San Francisco.** Founder and general partner, FyrFly Venture Partners. [www.fyrfly.vc](http://www.fyrfly.vc)

**Alexander Stöckel, St. Gallen.** Partner and board member, btov. [www.btov.vc](http://www.btov.vc)

**Nanja Strecker, Zurich.** Managing director, business incubator, European Space Agency (ESA). [www.esabic.ch](http://www.esabic.ch)

**Albert Zabo, Zurich.** Entrepreneur and private investor. Board president, mobit AG. Seed and growth investments in Swiss tech start-ups. [www.mobit.ch](http://www.mobit.ch)

## T

**Colin Turner, Geneva.** Business angel. Mentor, A3 Angels. Co-founder, greenTEK ventures. General partner, Rising Star Ventures and Rising Star Accelerator (cybersecurity). [www.risingstaraccelerator.ch](http://www.risingstaraccelerator.ch)

**V**

**Heiko Visarius, Burgdorf.** CEO, VISARTIS Healthcare. Startup coach, Innosuisse. [www.visartis-healthcare.ch](http://www.visartis-healthcare.ch)

**Paul-André Vogel, Sion.** Director, CimArk, startup support network. Start-up coach. [www.cimark.ch](http://www.cimark.ch)

**Pascale Vonmont, Basel.** Director, Gebert Rűf Stiftung. President, Startupticker Foundation. Board member, digitalswitzerland. Strategic council delegate, Venture Kick. Jury member, Venture Leaders and seif Awards. [www.grstiftung.ch](http://www.grstiftung.ch)

**Jean-Pierre Vuilleumier, Zurich.** Founder and director, Startup INVEST. Organiser, Startup DAYS. Vice-president, Startupticker Foundation. [www.startupinvest.ch](http://www.startupinvest.ch)

**W**

**Lucian Wagner, Zurich.** General partner, EuroUS Ventures, with more than a dozen startup investments. Board member and co-founder, Launch in US Alliance. [www.eurousventures.com](http://www.eurousventures.com)

**Steffen Wagner, Zurich.** Co-founder and CEO, Investiere/Verve Capital Partners AG. Expert, Global Entrepreneurship Monitor. [www.investiere.ch](http://www.investiere.ch)

**Christian Wenger, Zurich.** Partner, law firm Wenger & Vieli. Focus: private equity/venture capital/M&A. President, digitalswitzerland. President, Startup INVEST. Business angel. [www.wengervieli.ch](http://www.wengervieli.ch)

**Sandy Wetzel, Neuenburg.** CEO, Technopark Neode. Start-up coach. [www.neode.ch](http://www.neode.ch)

**Roger Wűthrich, Bern.** Head, digital business, Swisscom. Initiator, Swisscom StartUp Challenge. [www.swisscom.ch/startup](http://www.swisscom.ch/startup)

**Z**

**Jűrg Zűrcher, Zurich.** Partner, EMEA biotechnology leader, Ernst & Young. [www.ey.com](http://www.ey.com)

**TOP 100 STARTUPS****INDEX IN ALPHABETICAL ORDER**

NAME	FOUNDED	SECTOR	CANTON	RANK
9T LABS AG	04.12.2017	ENGINEERING	ZH	26
<b>A</b>				
ADVANON AG	03.03.2015	FINTECH	ZH	9
ALLTHINGS TECHNOLOGIES AG	17.01.2013	PROPTech	BS	11
ALTOIDA AG	17.05.2016	MEDTECH	LU	36
ANVBOTICS AG	09.09.2016	ENGINEERING	ZH	54
APIAX AG	02.05.2017	FINTECH	ZH	65
ASTROCAST SA	01.10.2014	ENGINEERING	VD	52
AVA AG	11.09.2014	MEDTECH	ZH	1
AVRIOS INTERNATIONAL AG	05.02.2015	SOFTWARE	ZH	47
<b>B</b>				
BESTMILE SA	28.01.2014	SOFTWARE	VD	2
BIDWATCH SA	03.02.2015	ENGINEERING	VD	37
BRING! LABS AG	14.04.2015	ONLINE	ZH	29
<b>C</b>				
CARU AG	08.02.2017	MEDTECH	ZH	83
CARVOLUTION AG	08.03.2018	ONLINE	BE	60
CELLESTIA BIOTECH AG	20.05.2014	BIOTECH	BS	48
CHIMPY AG (FORMERLY BATTE.RE AG)	04.04.2013	CLEANTECH	ZH	39
CLEVERDIST SA	08.04.2015	SOFTWARE	GE	63
COAT-X AG	28.04.2016	ENGINEERING	NE	77

NAME	FOUNDED	SECTOR	CANTON	RANK
CODECHECK AG	07.05.2014	ONLINE	ZH	30
COMPHYA SARL	16.05.2017	MEDTECH	VD	72
CREAL3D SA	03.11.2017	ENGINEERING	VD	19
CRISPR THERAPEUTICS AG	31.10.2013	BIOTECH	ZG	20
CRYPTO FUND AG	21.04.2017	FINTECH	ZG	73
CRYPTO REAL ESTATE AG	19.12.2017	PROPTech	ZG	25
CUTISS AG	08.03.2017	BIOTECH	ZH	5
CYANO GUARD AG	04.08.2016	BIOTECH	ZH	67
<b>D</b>				
DAEDALEAN AG	12.08.2016	SOFTWARE	ZH	46
DAPHNE TECHNOLOGY SA	22.12.2017	CLEANTECH	VD	35
DOTPHOTON SA	19.04.2018	SOFTWARE	GE	68
<b>E</b>				
ELTHERA AG	16.02.2016	BIOTECH	ZG	55
EMBOTECH AG	24.09.2013	SOFTWARE	ZH	79
EQUIPO AG	08.08.2014	ONLINE	ZG	59
EXEDON ANALYTICS AG	09.08.2016	SOFTWARE	ZH	12



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NAME	FOUNDED	SECTOR	CANTON	RANK
<b>F</b>				
FARMY AG	06.06.2014	ONLINE	ZH	53
FASHWELL AG	30.07.2014	ONLINE	ZH	34
FIXPOSITION AG	08.08.2017	ENGINEERING	ZH	21
FLYABILITY SA	23.09.2014	DRONES	VD	4
FRONTIFY AG	04.04.2013	SOFTWARE	SG	56
FUTURAE TECHNOLOGIES AG	13.12.2016	FINTECH	ZH	85
<b>G</b>				
GAMAYA AG	22.01.2015	DRONES	VD	8
GLOBAL IMPACT FINANCE SA (MONITO)	13.01.2015	FINTECH	VD	93
GLYCEMICON AG	23.01.2013	BIOTECH	AG	23
GNUBIOTICS SARL	08.09.2016	BIOTECH	VD	87
GRATXRAY AG	04.08.2017	MEDTECH	AG	62
GRZ TECHNOLOGIES AG	10.03.2017	CLEANTECH	VS	51
GUURU AG	15.10.2015	SOFTWARE	ZH	38
<b>H</b>				
H55 AG	05.06.2015	CLEANTECH	VS	43
<b>I</b>				
IDUN TECHNOLOGIES AG	16.11.2017	MEDTECH	ZH	97
IMVERSE AG	22.05.2017	SOFTWARE	GE	14
INOFEA AG	07.02.2014	BIOTECH	BS	100
INOSITEC AG	24.12.2015	BIOTECH	ZH	42
INSIGHTNESS AG	04.06.2014	ENGINEERING	ZH	94
INSOLIGHT SARL	31.08.2015	ENGINEERING	VD	27
INTERAX BIOTECH AG	29.04.2016	BIOTECH	AG	89
IRSWEEP AG	09.05.2014	BIOTECH	ZH	78
<b>K</b>				
KOMED HEALTH AG	22.06.2017	SOFTWARE	ZH	70
<b>L</b>				
LEDGY AG	03.07.2017	FINTECH	ZH	82
LEGAL TECHNOLOGY SWITZERLAND AG (PROXEUS)	22.07.2016	ONLINE	ZH	88
LEMAN MICRO DEVICES SA	29.01.2013	MEDTECH	VD	45
LIGENTEC SA	12.07.2016	ENGINEERING	VD	76
LOANBOOK AG	03.07.2015	FINTECH	ZH	57
LUNAPHORE TECHNOLOGIES SA	17.04.2014	MEDTECH	VD	3
<b>M</b>				
MAXWELL BIOSYSTEMS AG	01.09.2016	MEDTECH	BS	22
MELONPORT AG	16.08.2016	SOFTWARE	ZG	66
MIRRAKOI SA	15.01.2018	SOFTWARE	VD	61
<b>N</b>				
NANOGENCE SARL	18.12.2017	ENGINEERING	VD	80
NANOLEQ GMBH	16.05.2017	ENGINEERING	ZH	71
NANOLIVE SA	18.11.2013	MEDTECH	VD	13
NOMOKO AG	11.06.2015	ENGINEERING	ZH	58
<b>O</b>				
OLYMPE SA	11.11.2015	SOFTWARE	VD	90
ONESKY SARL (INVOLI)	20.07.2017	DRONES	VD	81
ONEVISAGE SA	19.10.2016	SOFTWARE	VD	86
ORBWISE SA	20.02.2014	SOFTWARE	GE	15
<b>P</b>				
PERSPECTIVE ROBOTICS AG (FOTOKITE)	10.03.2014	DRONES	ZH	24
PHARMABIOME AG	25.02.2015	BIOTECH	ZH	44
PIAVITA AG	01.03.2016	MEDTECH	ZH	6
POLYNEURON PHARMACEUTICALS AG	27.11.2014	BIOTECH	BS	33
PREGNOLIA AG	13.01.2016	MEDTECH	ZH	41
PRICEHUBBLE AG	28.01.2016	PROPTECH	ZH	40
PROTON TECHNOLOGIES AG	18.07.2014	ONLINE	GE	28

NAME	FOUNDED	SECTOR	CANTON	RANK
<b>R</b>				
REALLOOK AG (SELFNATION)	07.10.2013	ONLINE	ZH	49
RETINAI MEDICAL AG	16.12.2016	MEDTECH	BE	84
<b>S</b>				
SCANTRUST SA	15.01.2014	SOFTWARE	VD	16
SKYPULL SA	28.09.2017	CLEANTECH	TI	69
SONECT AG	26.08.2016	FINTECH	ZH	75
<b>T</b>				
TESTINGTIME AG	12.01.2015	SOFTWARE	ZH	17
TOLREMO THERAPEUTICS AG	16.03.2017	BIOTECH	ZH	31
TOPADUR PHARMA AG	10.03.2015	BIOTECH	ZH	92
TWENTYGREEN AG	27.10.2015	BIOTECH	LU	91
<b>U</b>				
URBANALPS AG	29.07.2014	ENGINEERING	ZH	98
<b>V</b>				
VANGUARD INTERNET SA (BATMAID)	07.11.2014	ONLINE	VD	64
VERITY STUDIOS AG	08.07.2014	DRONES	ZH	99
VERSANTIS AG	18.03.2015	BIOTECH	ZH	10
VILU VENTURES AG	08.08.2013	ONLINE	ZH	50
VOLUMINA MEDICAL SA	01.12.2017	MEDTECH	VD	96
<b>W</b>				
WINGTRA AG	01.04.2016	ENGINEERING	ZG	7
<b>X</b>				
XORLAB AG	29.07.2015	SOFTWARE	ZH	32
XSENSIO SA	19.03.2014	MEDTECH	VD	95
<b>Y</b>				
YAMO AG	23.08.2016	FOOD	ZG	18
<b>Z</b>				
ZIPPSAFE AG	05.12.2016	ENGINEERING	ZH	74

### 15 signs you are fit to be a founder:

1. You don't panic at the idea of being alone
2. You can't get an idea out of your head
3. You see having satisfied customers as a legitimate aim in life
4. You are mostly dissatisfied
5. You think your old employer is awful
6. You are always asking: what if...?
7. You have an issue with authority
8. At least two people dislike you because you ask uncomfortable follow-up questions
9. You were asked whether you might have ADHD
10. You swap ideas with people who are smarter than you
11. You don't need anyone to tell you the way
12. You can't sleep at night for thinking about the opportunity cost
13. You can distinguish between a period of uncertainty and the end of the world
14. You are driven to research by interest alone
15. You want to prove something to someone. And that someone is you

# ENTREPRENEUR OR FAKEPRENEUR

### 15 signs you are not fit to be a founder:

1. You feel very comfortable in your comfort zone
2. You want to be a founder and get rich quick
3. You think it doesn't matter whether something is done today or tomorrow
4. You think marketing is a replacement for substance
5. You think the world's problems will be solved – by other people
6. For you, harmony is a sign of success
7. Your private life is not negotiable
8. You can't say no
9. You have blind faith in your boss
10. You love the corporate atmosphere, hierarchical levels and multi-step reporting processes
11. You're a freelancer and think you're a founder
12. You think you're an infallible genius
13. Winning the lottery would be the pinnacle of your life
14. You think you're entitled to be rewarded immediately for all your efforts
15. You spend a lot of time decorating your office with personal objects – after all, you want to remain there for a long time



Aike Festini & Maite Mihm, LuckeBox Logistics AG

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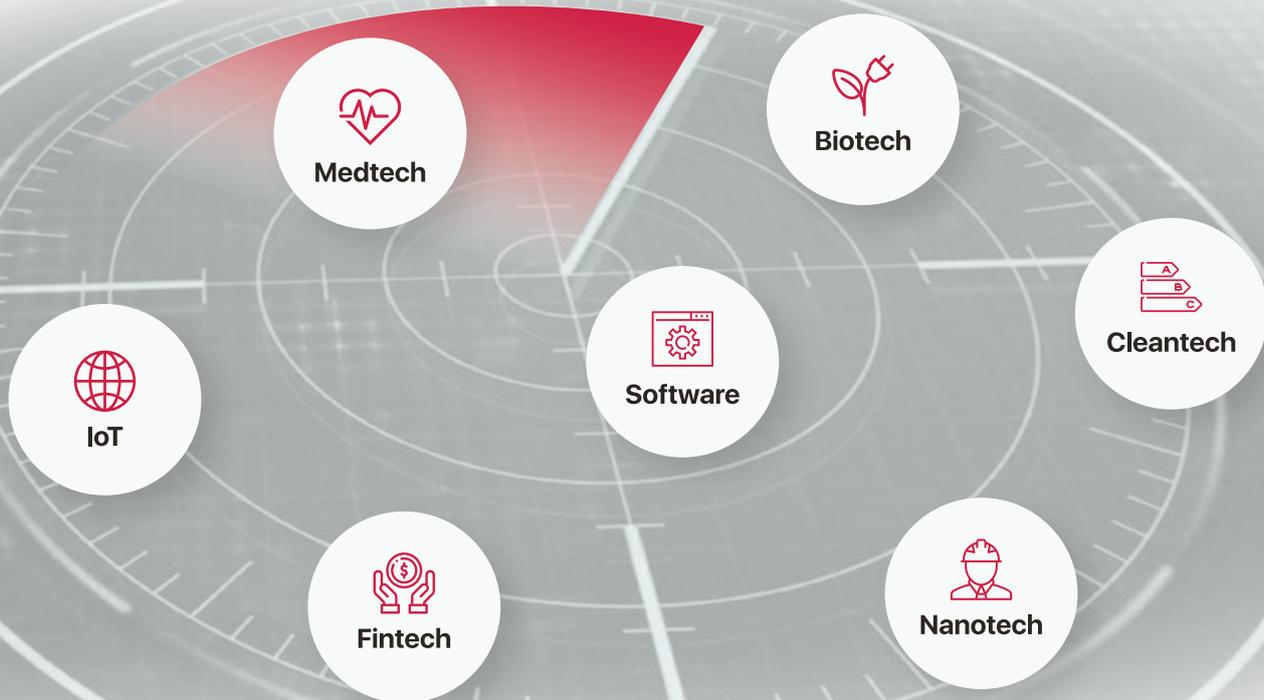
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