

Life Sciences Start-ups in Switzerland: CTI and its Support for Young Entrepreneurs

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Abstract: According to the Global Entrepreneurship Monitor 2013, perceived opportunities to start a business in Switzerland are high and rank above average compared to other innovation-based countries. 2013 was a record year for start-ups in Switzerland. Around 40,000 new businesses were recorded in the commercial register and the trend is set to continue. There are two main criteria that lead to success, particularly for science- or technology-based start-ups: first of all, it is the business or product idea itself, and secondly it is the entrepreneurial team. CTI is supporting innovation in a manner that responds to a need in the market identified by industry.

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Professional Coaching Leads Start-ups to Success

Switzerland is currently in the favorable situation that many entrepreneurs are starting their own businesses. 2013 was a record year. Around 40,000 new businesses were recorded in the commercial register and the trend is set to continue. Between January and May of this year the number of new companies listed in the commercial register rose by 5% compared to the previous year. The strongest growth has been in business services, wholesale and the hotel and restaurant industry. The chemicals industry and pharmaceuticals registered 56 new entries. According to the Global Entrepreneurship Monitor 2013, perceived opportunities to start a business in Switzerland are high and rank above average compared to other innovation-based countries.

But how do you set about turning a newly listed business into a successful company, and how do you transform registered patents into strong products with market appeal?

There are two main criteria that lead to success, particularly for science- or technology-based start-ups: first of all, it is the business or product idea itself. That is the foundation to prevail as a start-up against

established competitors. In order to market your idea you need to present customers with an attractive benefit. The uniqueness and innovative dimension of the product or service should be a key consideration and these aspects must be easily presentable. If the idea is too complex, potential buyers may be discouraged. And the focus should be on the needs of the market and of customers, rather than on the idea itself. Without a potential market, even the best idea is bound to fail. The second factor, which is at least as important as the idea itself, is the entrepreneurial team. In order to attract investors the team needs to be balanced so that members complement one another. The team not only needs to have sound knowledge in a special field, which helps them to turn an innovative science or technology based idea into a novel product or service, but it also needs to understand that a good business idea needs money and customers, and that the idea might have to be adapted accordingly depending on the circumstances. Founders need to be flexible and know how to move in a corporate environment. They must be able to communicate and sell effectively, as well as be able to convince those around them, and potential investors, of the merits of their business idea. Furthermore, starting your own business requires experience and stamina. Especially during the first few years, the investment in terms of time is high, while the salary is low.

Not all entrepreneurs are born as such all-rounders and they often lack the above-mentioned experience. The good news is, however, that there are ways to learn the missing elements. Founding your own company requires careful planning and in Switzerland there are numerous possibilities to get the necessary support.

Top Quality Courses for Entrepreneurs

As the Confederation's innovation promotion agency, the CTI helps to optimize knowledge and technology transfer through the use of national thematic networks and innovation mentors. It lends support to R&D projects and provides coaching in entrepreneurship, as well as in developing start-up companies.

The 'CTI Entrepreneurship' training program supports the next generation of scientists and entrepreneurs in the shape of four specific training courses run by experienced serial entrepreneurs. The basic courses focus on students with business ideas and help them to think and act like entrepreneurs by providing both the theoretical and practical expertise to set up and run a company. The advanced courses are aimed at start-up founders before and after setting up the company. They focus on Business Creation and Business Development. The topics discussed include financial planning, developing a business plan, legal matters, growth and international strategies and people and team management.

Coaching Paves the Way to Success

Once a business idea is further developed, coaching, such as that provided by the CTI, is highly recommended. Science- or technology-based start-ups can apply to the CTI, and when accepted, are assigned a personal coach who can bring in experts from various fields for the early stage of the venture. The coaching process, which can last between 6 and 24 months, requires

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a significant commitment in both time and effort. Start-ups may apply for CTI coaching at any time. Roughly 150 applications are submitted annually (Fig. 1). Around half are accepted and enter the coaching process. Twenty-two companies accepted for coaching in 2013 were involved in life sciences.

One of the first steps taken by the coach is to help draw up a business plan. The company's portfolio is evaluated in terms of marketability, technology, feasibility, management teams and patents. Experts also support entrepreneurs in preparing presentations for potential investors or partners. It is important to emphasize the right aspects. Entrepreneurs tend to focus too much on technical details, but they need to include the customer's perspective. The product has to sell on the market so distribution channels are needed. If the market in Switzerland is not large enough, CTI Market Entry Camps in the USA, China, India and the UK can help start-ups to enter new markets.

A Label for more Opportunities

Awards or labels may help to get investors' attention. The CTI Start-up Label, which may be awarded after completion of the coaching process, demonstrates that the company has a good basis on which to grow and survive. In 2013, 30 new businesses were awarded the CTI Start-up label. Thirty-one companies from the biotech, pharmaceutical and medtech fields have been awarded the label since 2003 (Fig. 2).

The label is a significant step on the path to success. CTI Start-up Label companies manage to secure around CHF 100 million in venture capital every year. This goes some way to explaining why 87% of CTI label companies prevail on the market – an exceptionally high number.

Investors prefer start-ups in the 'early stage' as they have limited alternatives at this time. However, young entrepreneurs are making increasing use of crowd funding. Another alternative can be found in business angels. As well as contributing financially, business angels often share their knowledge and contacts. They, too, are mostly active in the early stages.

The Fascination of Surgical Precision

A good example on how CTI support leads to success is the spin-off company CAScination. The company successfully completed the CTI coaching process and was awarded the CTI Start-up Label in 2010. CAScination's navigation technol-

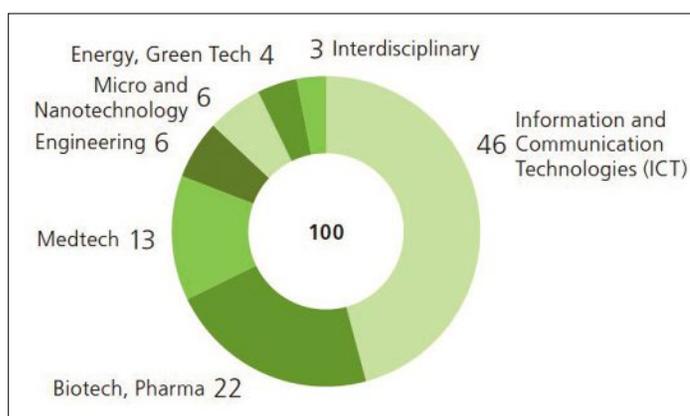


Fig. 1. Industry distribution of companies having received CTI Coaching Acceptance in 2013 (%). Around half of the start-ups admitted to the Coaching Process are active in the ICT sector.

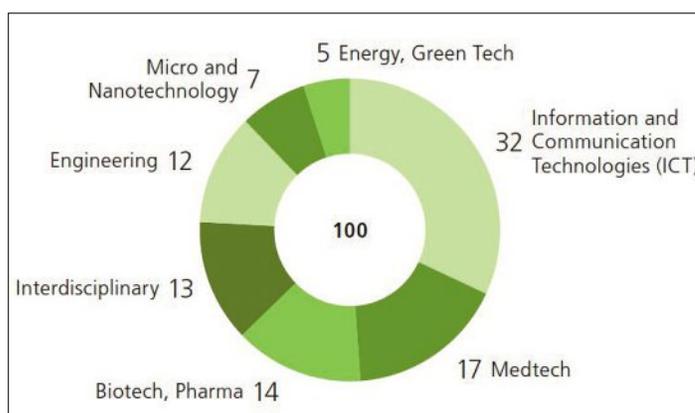


Fig. 2. Industry distribution of companies awarded the CTI Start-up Label from 2003–2013 (%).

ogy is designed to assist surgeons in the everyday challenge of making the impossible possible. Their navigation system now enables liver surgeons to target and destroy metastases.

Stephan Weber, Director of the ARTORG Center for Biomedical Engineering at the University of Bern, joined up with his former doctoral student Matthias Peterhans, the current CEO, and visceral surgeon Daniel Candinas to found CAScination. A first prototype was developed in 2009, and sparked a very positive response from experts in liver surgery. Since then, Matthias Peterhans has continued to improve the technology at CAScination's base in Bern. In May 2013 he completed a CTI project. Partnered by the ARTORG Center, the project lasted two years and cost around CHF 600,000. It proved possible to reduce the maximum deviation of the previously created 3D visualization of the ultrasound image to less than 5 mm, meaning that the quota of operable patients can be increased still further.

Bring Innovative Ideas to Market more quickly

As can be seen in the case of CAScination, the CTI's objective, besides leading start-ups to success, is to generate more innovative products and services by encouraging higher education institutions

and companies to work together on joint R&D projects. Each year, the CTI supports several hundred of these joint R&D projects. Companies – especially SMEs – are thus able to leverage the R&D resources of higher education institutions to develop their innovative ideas into marketable products and services. Only those who can quickly bring brilliant ideas to market will succeed in global competition. This is precisely what the CTI's project promotion activities seek to achieve. The CTI funds joint R&D projects involving companies, public authorities, non-profit organizations and higher education institutions. The CTI's project promotion activities are open to R&D projects in all disciplines.

The CTI divides its areas of funding into life sciences, micro and nanotechnology, engineering sciences and enabling sciences. A total of CHF 106 million in funding is available in 2014. In 2013, a total of 331 project proposals were approved. In the area of life sciences, 75 out of 158 project proposals were approved, resulting in an approval rate of 47% (Fig. 3).

Partnerships between medical technology companies and R&D institutions create successful products, which contribute to Switzerland's leading position worldwide. This is why the CTI organizes an annual Medtech Event to bring together the knowledge and expertise of the Swiss medical technology sector in the fields of research, production, distribution and ser-

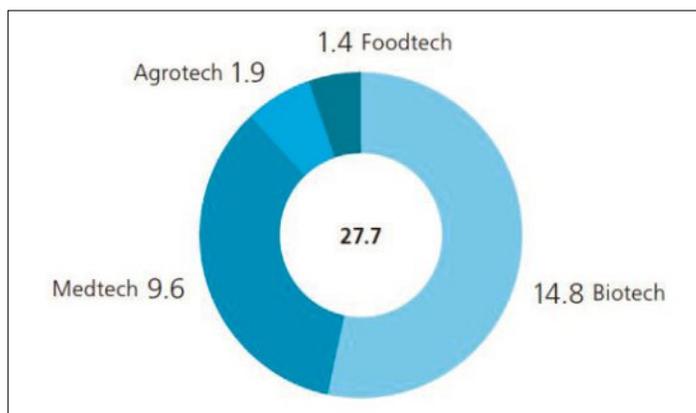


Fig. 3. Federal funding for Life Sciences in 2013 (million CHF).

vices. It is a platform for networking, as well as debating and exchanging ideas. Delegates are given an opportunity to find out about innovative technologies, interesting (CTI) projects, new products and services in the form of posters, presentations and roundtables. The audience can also vote for the best out of three outstanding CTI medtech projects. The winner then receives the CTI Swiss Medtech Award. A second award is granted for the best poster. CAScination, the company cited in the example above, was the winner of the CTI Swiss Medtech Award in 2013.

Ever Closer Collaboration between Industry and Research

Where necessary, the CTI facilitates the initiation and execution of research projects through innovation mentors (IM).

The mentors took up work in 2013, informing SMEs about innovation funding opportunities in Switzerland and helping them to develop their innovation projects. The IMs provide support during the initial phase of a science-based innovation partnership of national or international importance between a company and a public research institution. Thanks to their professional experience, IMs can use their contacts in both research and business circles to the benefit of SMEs. There is considerable demand for this kind of support. Already in the first year, CTI innovation mentors supported a total of 78 projects in the application process.

In addition to the innovation mentor scheme, the CTI runs two other programs designed to foster collaboration between industry and research. The CTI Voucher enables businesses to submit innovation proposals without having to provide the

name of a research partner. Once approved, they can then go in search of a suitable partner. In this way the CTI is supporting innovation in a manner that responds to a need in the market identified by industry. Higher education institutions in turn benefit from interesting research propositions from industry.

Innovation cheques are intended to encourage knowledge and technology transfer between research institutes and companies, thereby expanding Switzerland's research and innovation base. They are intended to encourage SMEs to work more closely with research institutes in the planning and development of new or considerably improved products, manufacturing techniques or services. They are therefore issued to SMEs that have not previously worked with the CTI, allowing them to benefit from R&D services from research institutions worth up to CHF 7500. It also helps to reduce another barrier to innovation by allowing businesses to have the feasibility of their innovative project assessed with the help of a higher education institution.

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“ “ As already demonstrated multiple times, *e.g.* Roche-Glycart or Covagen, Switzerland, with its outstanding universities and strong pharmaceutical industry, offers an excellent breeding ground for life-sciences start-ups. ” ”

Roland Siegwart, Vice President Research and Corporate Relations ETH Zurich