Interview: Walter Steinlin – President, Federal Commission of Technology and Innovation (CTI), Switzerland

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Walter Steinlin describes the Federal Commission of Technology and Innovation as a catalyst for turning research into innovation. Based in Bern, Switzerland, the commission funds research institutes in corporate projects, and provides mentorship and coaching support for start-ups.

Could you give our international audience an overview of the Federal Commission of Technology and Innovation's responsibilities?

The CTI is the agency of the federal government responsible for the promotion of science-based innovation. We work in parallel to the Swiss national science foundation, which promotes basic research. We promote applied research from the federal level. There are some relatively small initiatives at cantonal levels, but we are the biggest government initiative in terms of innovation promotion. The agency dates back to 1943 when it was founded to fight the recession in Switzerland. The idea was to promote innovation and turn science into value in order to make up for Switzerland's lack of natural resources. For many years it was only an advisory commission to the government, who would finance projects based on the commissions proposals. Recently in 2011, it was turned into a formal commission with the financial power to use government appointed funds. We are currently a legal commission, but by 2018 we will become a more independent legal body, an institution under public law.

The mandate is to turn science-based innovation and ideas from basic research into economic value. We do this through promoting projects with existing companies and through promoting start-ups. Compared to other countries and compared to the government's funding of basic research, the government's promotion of innovation is relatively small. The mindset in Switzerland is that basic research is a government's task, but turning it into economic value is industries task. The government should only participate through subsidiaries. It is a liberal mindset that says that the responsibility of what and how they innovate should remain with the companies. The government should only step in when there is lost opportunity. Switzerland spends three per cent of GDP in R&D, which is about 18 billion CHF (USD 18.38 billion). Of this 18 billion our budget is only one per cent. The CTI is not a massive machine that keeps Switzerland running, but instead it is a catalyst for opening opportunities that fertilize the ground for innovation.

Could you elaborate on your role in supporting the Swiss economy?

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We support the Swiss economy by funding projects. Approximately three fourths of our budget is used to fund projects. To give you a concrete example, if a pharmaceutical SME comes to us with a proposal for a partnership with the University of Basel, we will finance the University of Basel to work with the company. This is an example of funding projects for existing companies, and then for start-ups and entrepreneurs we have services that provide advice. With a relatively small amount of money we engage part-time coaches and we organize seminars to help turn scientific ideas into businesses. Financing is their own responsibility, although we will help them find risk capital.

You have been the president of the CTI for over six years, what have been some of your main milestones over this time?

The first has been to keep the commission running and progressing. I am proud of initiating and supporting the commission's transition into an independent public entity, which will happen in a year and a half. I would not say we created miracles over the past six years in terms of innovation. Switzerland has been at the top in terms of innovation performance, but much of our innovations are incremental.

One important milestone was the creation of an energy program. Like many countries, Switzerland has an emerging energy problem regarding nuclear power plants and CO_2 emissions. We have created a program to accelerate innovation in energy. Innovation does not happen overnight in energy, similarly to pharmaceuticals. It takes a long time to stimulate an innovation ecosystem that can create something. Many forces have come together to make this program happen.

In terms of life sciences innovation, 40 per cent of R&D in Switzerland is spent in pharmaceuticals. By far the majority of this spending is private by Novartis and Roche, and many other players. They are in control of this realm of innovation, and we focus more on the smaller players with small injections of project funding.

CTI has a separated med-tech from the life sciences. Indeed, med-tech is often not considered part of the life sciences. What are your views on this?

Med-tech is a combination of engineering and biological knowledge. I see it as driven by engineering. With pharmaceuticals, the scientists are working with living material; Med-tech is working with micro robotics and artificial control systems. This latter has not been fully explored by the pharmaceutical industry and; therefore, there are lost opportunities if the state does not intervene.

Does Switzerland have the potential to achieve the same level of leadership in the med-tech realm as it has in the pharmaceutical industry?

Yes, because we have first class life sciences researchers in Switzerland that create the appropriate knowledge, and we have world-class competence in micro engineering and micro-nano technology. Micro engineering and micro analytics need know-how at every level of manufacturing. It does not take just a brilliant idea, but it also takes a capable workforce to reliably and sustainably execute the idea. We have these people in Switzerland on all levels, from the academic to the mechanic. That is why I am very optimistic that med-tech fits well in Switzerland.

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The CTI hosts a number of events including Swiss Med-tech Day, CTI Micro-Nano Event, and the Swiss Innovation Forum. What are the goals of these events, and how do they support the mission of the CTI?

These events create and encourage ideas rather than immediate specific solutions. The idea is to bring the right people together from the engineering side and the life sciences side in order to create projects. We consider such events successful if afterwards there are new projects based on the ideas created at the event, and also if there are new relationships.

How do you think that Switzerland fairs in comparison to the likes of the United States when it comes to bringing scientific ideas into commercialization?

We could improve in terms of breakthrough innovations. Switzerland does not have any companies like Amazon, Skype, Facebook, or Uber. We do have, as mentioned, strong incremental innovations. The areas that are particular strengths to Switzerland are in scientific findings, and in the diligence and strength of execution. We have perseverant, reliable, and intelligent people with strong skills in producing things. If you compare the companies in Switzerland now to the companies here 20 years ago, they are remarkably different, but not due to one single element. Instead it is that the economy has adapted to globalization, and technological possibilities. The logic is that Switzerland must give way to innovation because the economic landscape is so different now than it was 20 years ago, and there has been no disruption. All these changes happened with practically full employment. Switzerland is a special place because we have the academic researcher for producing ideas, but also the skills for executing these ideas. This is a special place to be, especially for a small country.

The CTI works with many start-ups, what is your view on the entrepreneurial culture here? Some of our interviewees have noted that Swiss are more conservative than Americans. Do you view this as a hindrance or a misconception?

It is a hindrance. It used to be a strong hindrance about 20 years ago when hardly anybody dared to create a new company before anybody was absolutely certain that it would succeed. This is because it was viewed as a shame to fail. This has changed a lot because younger people are educated at universities about the importance of entrepreneurship, and also because society has started to understand that failing in entrepreneurship is not a disgrace but instead a signal of an initiator. There are an increasing number of young people with good ideas and an interest in entrepreneurship, but many of them struggle to find the money to take the idea to the next level. We still have a way to go in terms of changing people’s mindset, and in finding mobilizing money.

Although people often benchmark themselves to Silicon Valley, I do not think that Switzerland should become like a Silicon Valley. While more innovative compared to Switzerland, in terms of unemployment and social disparity, it is not something we should aspire to. We want to find our own kind of fruitful and productive ecosystem.

Is there a final message that you would like to leave our international audience?

Switzerland is an extremely fertile ground for scientific findings. We have some of the best researchers in the world. We also have skills at every level from the PhD to machinery operators. We have no gaps in the value chain. We believe in the whole value chain of high value goods, supported by government assistance. The CTI is not the main driver of innovation, but we help to provide a fertile ground.

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