

## The Swiss Entrepreneurial Ecosystem Report 2015/2016

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The Swiss Entrepreneurship Ecosystem Report 2015/2016 is conceptualized and written by the team of the Start-up Monitor Foundation. The Start-up Monitor foundation was established by ETH Zurich, University of St.Gallen and University of Basel, and is financially supported by the Commission for Technology and Innovation (CTI). The Start-up Monitor Foundation maps, monitors and helps develop start-up ecosystems in Switzerland and beyond. Moreover, it supports start-ups during their growth phase and lets them track their own performance and benchmark themselves against their peers.

# Executive Summary

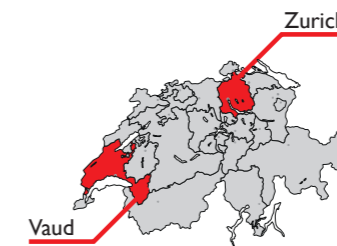
## THE SWISS ENTREPRENEURSHIP ECOSYSTEM

- Switzerland is one of the **most competitive and innovative countries in the world**. However, there is **some work to be done** to increase the commercialization of technological innovation, to build globally scalable high-growth ventures and to **turn Switzerland into an internationally recognized Start-up Nation**.
- Switzerland is a **relatively small yet highly attractive market for entrepreneurs**. Especially the healthy economic situation and market stability provides a solid ground for starting a business.
- The **smallness of the domestic market** in Switzerland causes **significant scalability challenges** for new ventures.
- The Swiss **infrastructure** and the **geographical location** provide young companies with an easy access to the European market and stronger trade links.
- There are **various institutions that provide start-up support** at all stages of the entrepreneurial process. However, even if universities have put greater emphasis on supporting start-ups in recent years, there is still a **considerable need for action, especially from universities of applied sciences, field-specific and private universities, as well as research institutes** as they may have the potential to further catalyze entrepreneurial activities in Switzerland.
- **Visibility for Swiss start-ups** mainly happens on a **national level** – with the exception of a few initiatives – and therefore does not sufficiently support founders in building a global reputation and an ambition to grow a locally embedded yet globally operating enterprise.
- **Venture financing** is generally available in Switzerland, but not equally for all stages of the entrepreneurial process. Start-ups in the seed stage have access to an abundance of different forms of financing. However, there is a clear **lack of early growth-stage funding**. Later stage funding, again, is more readily accessible.
- There is still room for improvement with regards to **entrepreneurship education** at all stages of the learning process of an individual entrepreneur.

## KEY FACTS ABOUT ENTREPRENEURIAL ACTIVITIES IN SWITZERLAND

>50%

of **high-growth startups**, which are tracked by the Start-up Monitor, are founded in the **cantons of**



### ENTREPRENEURIAL ACTIVITY & INTENTION

According to the Global Entrepreneurship Monitor (2014), Switzerland ranks in the **mid-range** of all European countries regarding

ENTREPR. ACTIVITY      ENTREPR. INTENTION



7,1%

7,1%

### SWISS GAZELLES

The share of **Swiss gazelles**, i.e. high-growth enterprises with less than five years of age, is comparatively high. With **0.5%** of the population of Swiss firms, the country lies in the midfield with other OECD countries.



12.000 NEW FIRMS

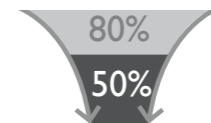


are created **each year**, corresponding to **2%** of the **entire population** of Swiss companies.

### SURVIVAL RATES ABOVE AVERAGE

When compared internationally, Swiss startups have **above-average survival rates**.

1. YEARS



5. YEARS

### JOB CREATION

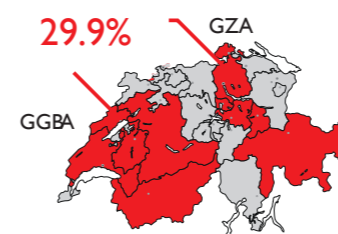


50%

of all self-employed workers have one or more employees.

### ICT

is the **most prominent sector** in the Start-up Monitor and has a particularly strong basis in the Greater Zurich Area (GZA) and Greater Geneva Bern Area (GGBA).



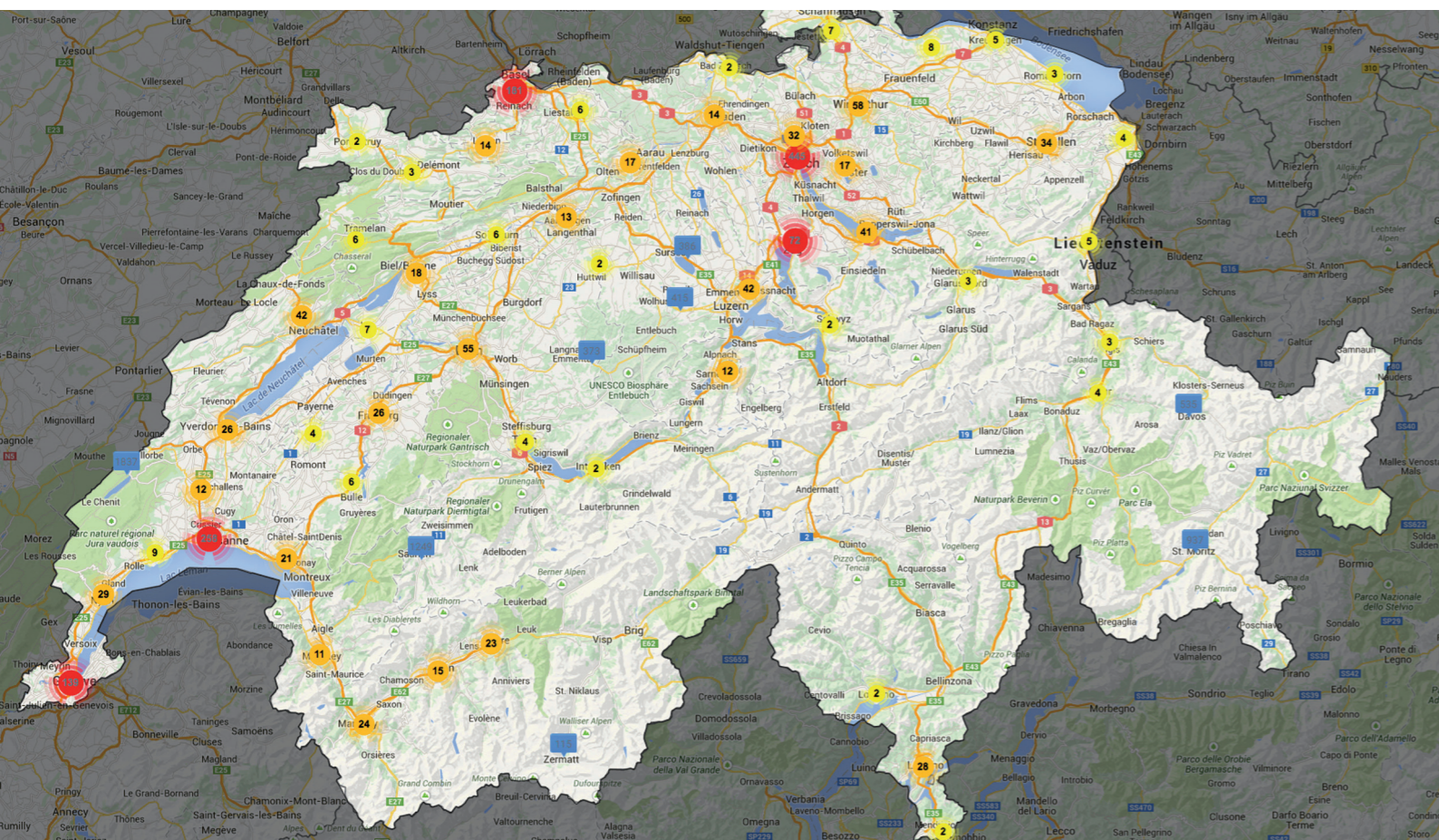
### SELF-EMPLOYMENT

in Switzerland is comparable to the **European average**, with self-employment rates being in the range of

8-11%

**EMPLOYER ENTERPRISES** as a percentage of the population of active enterprises with at least **one employee**, is very low.

6.7%



## Introduction

### DEAR READER,

Switzerland is one of the most competitive and innovative countries in the world. The country is ranked first in the World Economic Forum's Global Competitiveness Report for the seventh consecutive year. Switzerland owes its success to a combination of factors, which includes stable, transparent and effective institutions, healthy public finances, attractive taxes, excellent infrastructure and connectivity, a world-class education system, stable relations among social actors within a flexible and attractive labor market, the highest level of business sophistication, and an exceptional capacity for innovation. But despite all these exceptional conditions for innovation and competitive business development, Switzerland does not rank among the most entrepreneurial countries in the world.

There is still much work to be done to increase the commercialization of technological innovation and built globally scalable high-growth ventures and thus, turn Switzerland into an internationally recognized Start-up Nation. However, fostering entrepreneurship is a difficult challenge because there is no best practice to promote the successful establishment of a company. It is rather necessary to understand the underlying economic, environmental, socio-cultural and political factors that entrepreneurs face in particular regions, countries, or industries in order to establish a vibrant entrepreneurship ecosystem.

Yet, the current state of our knowledge about the Swiss entrepreneurial ecosystem is limited. We do not know what factors characterize the Swiss entrepreneurship ecosystem, how much entrepreneurship activity we have in Switzerland, and how the entrepreneurial ecosystem can be adapted to increase productive entrepreneurship. Therefore, we aim to address all of these questions in the present report.

The main purpose of the Swiss Entrepreneurship Ecosystem Report 2015 is to provide a first in-depth analysis of entrepreneurial activities in Switzerland. In this report,

the concept of entrepreneurship ecosystems will be discussed and the Swiss entrepreneurial ecosystem assessed, following an established ecosystem framework. This is the second report provided by the SSM. It follows the report "The Start-up Monitor Landscape of Switzerland - First Insights from the Swiss Start-up Monitor", which was published in 2013.

We hope that you find the report a worthwhile read. We very much look forward to engaging in a dialogue with you.

Yours sincerely,

**Prof. Dr. Dietmar Grichnik**  
University of St.Gallen



A handwritten signature in black ink that reads "D. Grichnik".

**Prof. Dr. Peter Vogel**  
University of St.Gallen



A handwritten signature in black ink that reads "P. Vogel".

**Barbara Burkhard**  
University of St.Gallen



A handwritten signature in black ink that reads "B. Burkhard".

# Taking an Ecosystem Approach

## DEFINING THE ENTREPRENEURIAL ECOSYSTEM

Entrepreneurship is widely recognized as the engine of social and economic development. As a consequence, entrepreneurs and new ventures have become the focus of attention for policy makers and entrepreneurship scholars (e.g. Audretsch, 2002).

However, while entrepreneurs drive innovation and change, they alone cannot be held responsible for the development of an economy. It is rather the dynamic interplay between the entrepreneur and his / her environment that drives economic development (Van de Ven, 1993; Spilling, 1996). In line with these insights, the entrepreneurship ecosystem approach looks at entrepreneurship from a holistic and interactive perspective.

The term entrepreneurship ecosystem can be traced back to James Moore, who claimed that innovative businesses don't evolve in a „vacuum“, but coevolve within a community interacting with suppliers, customers and financiers (Moore, 1993). It is argued that firms which evolve in well-functioning ecosystems can benefit from favorable economic conditions because they have better opportunities to grow and create employment (Rosted, 2012). The entrepreneurship ecosystem is defined as “an interactive community

within a geographic region, composed of varied and inter-dependent actors (e.g. entrepreneurs, institutions and organizations) and factors (e.g. markets, regulatory framework, support setting, entrepreneurial culture), which evolves over time and whose actors and factors coexist and interact to promote new venture creation” (Vogel, 2013). This perspective highlights the importance of context in enabling new venture creation. More specifically, it emphasizes the crucial role of local and regional environments and the conditions required to generate and support entrepreneurship (Mason & Brown, 2014). In other words, entrepreneurship is embedded in a community of interrelated entities that are in constant interactions with one another. Consequently, successful new venture creation does not only depend on the behavior of entrepreneurs, but also on the comprehensive set of resources and actors within this community and on the way these interactions are orchestrated. In order to establish efficient entrepreneurial

ecosystems it is crucial to understand the underlying economic, educational and socio-cultural conditions that entrepreneurs face in particular regions, countries, or industries (Vogel, 2013; Vogel & Grichnik, 2014).

The entrepreneurial ecosystems approach incorporates established concepts such as clusters, industrial districts, innovations systems and learning regions. What these concepts have in common is their focus on external conditions for innovation and business performance. However, the entrepreneurship ecosystem approach differentiates itself by placing the entrepreneur at the center, and not the firm. Hence, at the center of analysis is not innovation or economic development in general, but the ability of the local environments in supporting entrepreneurs. Viewed from this perspective, entrepreneurs are not simply the outcome of a healthy ecosystem but rather key players in generating and maintaining it (Stam, 2014).

## CORE PILLARS OF THE ECOSYSTEM

According to Vogel (2013), an entrepreneurial ecosystem consists of a variety of components which strongly influence entrepreneurial activities (Figure 1).

The components can be grouped into three overarching categories:

(1) the non-entrepreneurial-specific context which is formed by infrastructure, governments and regulations, markets, innovation as well as the geographic location (2) the entrepreneurship-specific context, containing elements such as

financing, entrepreneurial education, culture, networks, startup support and exposure of entrepreneurs and (3) the entrepreneurial actors on an individual-level.

A detailed summary of the various sub-categories and components is provided in Table 1. All these components comprise a multitude of elements which interact in complex and idiosyncratic ways.

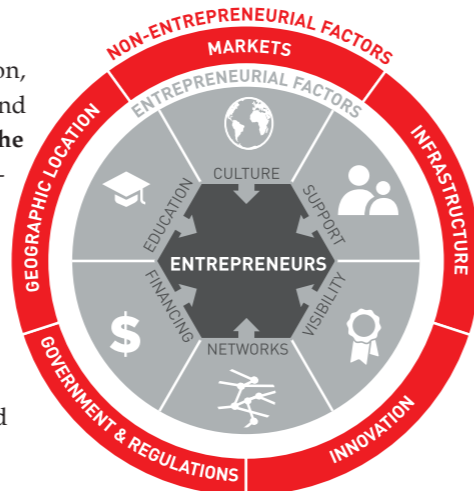


Figure 1: Entrepreneurship Ecosystem Framework (Source: Vogel, 2013).

(1) NON-ENTREPRENEURSHIP-SPECIFIC LEVEL	
<p><b>Government &amp; Regulations</b></p> <ul style="list-style-type: none"> <li>• Policy framework</li> <li>• Immigration &amp; labor law</li> <li>• Property rights</li> <li>• Freedom of people</li> <li>• Regional economic development</li> </ul> <p><b>Geographic Location</b></p> <ul style="list-style-type: none"> <li>• Livability in the area</li> <li>• Cost of living</li> </ul> <p><b>Markets</b></p> <ul style="list-style-type: none"> <li>• Customers (including beta users and early adopters)</li> <li>• Competitors</li> <li>• Distribution channels</li> <li>• Suppliers</li> <li>• Large corporations (as customers or strategic partners)</li> </ul>	<p><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Physical infrastructure</li> <li>• Educational institutions (e.g. universities)</li> <li>• Energy, telecom &amp; ICT</li> <li>• Transport &amp; logistics</li> <li>• Workspace</li> </ul> <p><b>Innovation</b></p> <ul style="list-style-type: none"> <li>• Knowledge &amp; skill creation</li> <li>• Research &amp; development</li> <li>• IP</li> <li>• Published scientific papers</li> <li>• Technology transfer</li> <li>• New processes and methods</li> </ul>
(2) ENTREPRENEURSHIP-SPECIFIC LEVEL	
<p><b>Financing</b></p> <ul style="list-style-type: none"> <li>• Accelerators</li> <li>• Business angels, FFFs, VCs</li> <li>• Debt</li> <li>• Micro financing</li> <li>• Private equity</li> <li>• Loans &amp; grants</li> <li>• Smart capital</li> <li>• Crowdfunding</li> </ul> <p><b>Culture</b></p> <ul style="list-style-type: none"> <li>• Mindset, ambition, drive, creativity</li> <li>• Role models</li> <li>• Self-promotion skills</li> <li>• Social status of entrepreneur</li> <li>• Tolerance of failure &amp; risk</li> <li>• Tolerance towards success</li> </ul> <p><b>Visibility</b></p> <ul style="list-style-type: none"> <li>• Events &amp; meet-ups</li> <li>• Conferences</li> <li>• Startup awards / labels</li> <li>• Startup-related internet portals</li> <li>• Media / newspapers</li> </ul>	<p><b>Support</b></p> <ul style="list-style-type: none"> <li>• Accounting &amp; legal</li> <li>• Mentors &amp; coaches</li> <li>• Experts &amp; consultants</li> <li>• Export support</li> <li>• Labor &amp; talents</li> <li>• Information hubs</li> <li>• Cluster / Tech Parks</li> <li>• Foundations</li> </ul> <p><b>Education</b></p> <ul style="list-style-type: none"> <li>• Entrepreneurship degree</li> <li>• Skill training &amp; certificates</li> </ul> <p><b>Networks</b></p> <ul style="list-style-type: none"> <li>• Formal networks: organizations, institutions</li> <li>• Informal networks: friends, families, colleagues</li> <li>• Entrepreneurship associations &amp; organizations</li> <li>• Group networks (e.g. women entrepreneurship networks)</li> </ul>
(3) ENTREPRENEURIAL ACTORS	
<p><b>Entrepreneurs</b></p> <ul style="list-style-type: none"> <li>• Novice entrepreneurs</li> <li>• Serial entrepreneurs</li> </ul>	

Table 1: Entrepreneurial Ecosystem Measurement Indices (Source: Vogel, 2013).

# The Swiss Entrepreneurship Ecosystem

## THE SWISS ENTREPRENEURSHIP ECOSYSTEM

Having introduced the concept of entrepreneurship and the most essential components of an entrepreneurship ecosystem, this section focuses on the assessment of the Swiss ecosystem along the dimensions of the ecosystem framework, including non-entrepreneurial factors, entrepreneurial factors as well as entrepreneurial actors.

### SWITZERLAND AT A GLANCE

Switzerland is a small country located in the heart of Europe. Its political system is unique and among the world's most stable democratic systems. Switzerland is a modern market economy with a relatively high gross domestic product (GDP). The country has a strong tradition of political and military neutrality, but also of international cooperation. Table 2 provides an overview of key facts about Switzerland.

### NON-ENTREPRENEURSHIP-RELATED FACTORS

The non-entrepreneurship-related factors refer to general market and ecosystem-related factors, which do not directly relate to entrepreneurship, but indirectly foster or hinder entrepreneurs to start a business. They include the ecosystem's market environment, infrastructure, innovation input, governments and regulations, and the geographic location

### Market

Switzerland's GDP is around USD 661 billion and represents 0.8% of the world economy. The Swiss GDP has been growing constantly over the last ten years by an average of 1.8% (FSO, 2014; World Bank, 2014). Switzerland's GDP per capita is the fourth-largest in the world, or ninth largest when adjusted for purchasing power (Figure 2). In 2014, per capita GDP was far above the European Union (EU) average at USD 84'344. Switzerland outranks the UK by 27%, and Germany and France by 44% and 47%, respectively. The country is in a healthy financial situation. The budget deficit in 2015 of 0.4% as a percentage of GDP was significantly below the average

GENERAL FACTS ABOUT SWITZERLAND	
<ul style="list-style-type: none"> <li>Surface area: 41.300 km<sup>2</sup></li> <li>Population: 8.1 million (2013)</li> <li>Languages: German, French, Italian &amp; Romansh</li> </ul>	<ul style="list-style-type: none"> <li>26 Cantons (regions)</li> <li>Capital: Bern</li> <li>Currency: Swiss Francs</li> <li>Location: Central Europe (GMT +1)</li> </ul>
THE SWISS ECONOMY	
<ul style="list-style-type: none"> <li>Most competitive economy in the world (WEF, 2014)</li> <li>GDP '14 (nominal): USD 661 billion</li> </ul>	<ul style="list-style-type: none"> <li>GDP '14 (PPP) / capita: USD 58'087</li> <li>GDP '14 (nominal) share world: 0.8%</li> <li>Budget deficit: 0.4% (2015)</li> </ul>
THE SWISS SYSTEM FOR INNOVATION	
<ul style="list-style-type: none"> <li>Most innovative country in the world (GII, 2014)</li> <li>Greatest density of Top 500 universities per billion inhabitants</li> <li>High density of Nobel Prizes per capita</li> </ul>	<ul style="list-style-type: none"> <li>3.1% of GDP flows into R&amp;D.</li> <li>Among the highest density of publications per capita (Relative Citation Index)</li> <li>Among the highest density patents per million inhabitants</li> </ul>
DOING BUSINESS IN SWITZERLAND	
<ul style="list-style-type: none"> <li>Stable national economy</li> <li>Great government support for setting up and scaling up a business</li> </ul>	<ul style="list-style-type: none"> <li>Low corporate tax rates</li> <li>Early withdrawal of personal retirement savings to become self-employed</li> </ul>

Table 2: Overview of key facts about Switzerland.

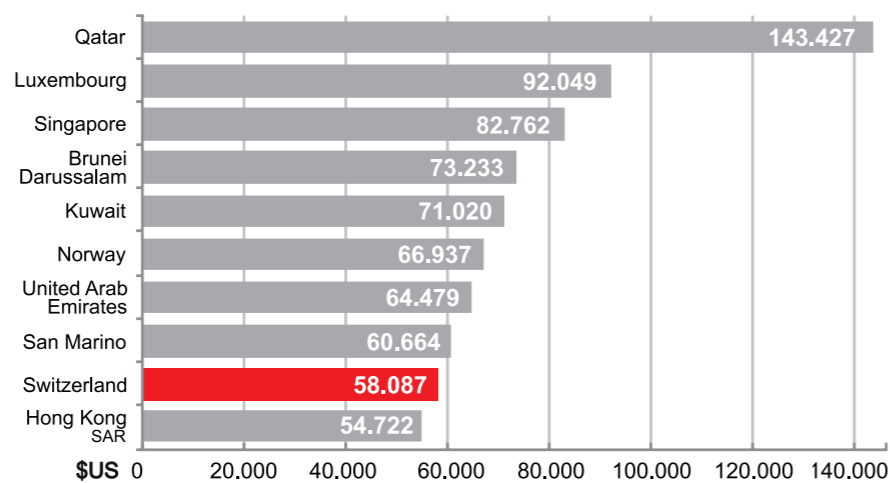


Figure 2: Top 10 world economies GDP (PPP) per capita (Source: IMF, 2014).

of EU and OECD member states (FFA, 2015). Switzerland is characterized by its market stability. As measured by the Swiss consumer price index, inflation has constantly remained below to the European (SGE, 2014). The end of the EUR/CHF exchange rate floor and subsequent appreciation in value of the Swiss Franc are likely to influence many industries in the following quarters. The main losers will be hospitality, the mechanical and electrical engineering industries, and retail (Christen, 2015).

International trade has long been the key to prosperity in Switzerland since its home market is relatively small and resource scarce (SECO, 2009). Switzerland is one of the European Union's most important partners in the trade in goods and services as well as in direct investments. Four-fifths of all imports and three-fifths of all exports are traded with the EU (FSO, 2014a). One example of a successful export-oriented branch of industry are highly specialized manufacturing companies and problem-solvers providing components for areas ranging from precision and micro-mechanics to materials technology, plastics and textiles. Switzerland is a member of the World Trade Organization (WTO) and committed to the implementation of WTO agreements, and as a member of the European Free Trade Association (EFTA) and through bilateral agreements with the EU the country provides its companies with a high level of access to international markets. Due to its consistent market liberalization policy, Switzerland has become a globally significant trade center. But trading of goods and services is not the only international linkage. Thanks to its location, lack of resources and limited domestic market Switzerland has also international investment relationships. Switzerland is the sixth largest direct

investor in the world and an attractive location for foreign investors, in particular from the EU (83.6%) and the USA (SGE, 2014).

The economy of Switzerland is dominated by small and medium sized enterprises (SMEs). The vast majority of enterprises (99%) have less than 250 full-time employees (FSO, 2013). However, multinational companies contribute also significantly to the Swiss economy, particularly given that many international companies have the global or European headquarters in Switzerland. They account for one third of Swiss GDP and provide two thirds of all private sector jobs (SGE, 2014). These multinationals are important sources of corporate venture capital in Switzerland and hence an attractive source of late-stage funding for high-tech startups.

Since the 1950s, the population of Switzerland has more than doubled, from 3.3 million (1950) to 8.2 million (2014) (FSO, 2014b) for a territory of 41 300 km<sup>2</sup>. In 2014, Switzerland had almost five million employed residents. The Swiss labor market is characterized by fairly liberal labor laws – despite more recent political votes that are putting this liberal labor market at risk – with employer-friendly regulations. The unemployment rate in Switzerland has been comparatively low (below half the average EU unemployment rate) over the past decade (2014: 4.5%) (FSO, 2014c). A primary reason for the relatively low level of unemployment in Switzerland is the overall strong aggregate demand for labor, the dual education system which equips candidates with the right skills and capabilities, an unemployment insurance program that runs effectively and therefore leads to comparatively short periods of unemployment, and a variety of re-integration schemes (including a dedi-

cated program that helps unemployed set up their own companies) (Haas & Vogel, 2014; Vogel, 2015). In addition, a good employee / employer relationship, a lack of minimum wage as well as a low tax burden contribute to an overall strong labor market (Sheldon, 2010, 2013). Switzerland's workforce is highly educated (both tertiary and vocational), possesses many technical skills and is oftentimes multi-lingual as a result of the different national languages, an asset for most employers (SGE, 2014).

Switzerland is a relatively small yet highly attractive market for entrepreneurs. Especially the healthy economic situation and market stability provides a solid ground for starting a business. Switzerland is oftentimes considered an interesting "test market" for young businesses that seek to build international operations, especially with respect to neighboring countries such as Germany, Austria, France and Italy. Yet, with Europe's highest per capita income, but also appealing price levels and above-average margins, Switzerland represents a highly demanding market for young businesses, particularly given the high opportunity costs for the entrepreneurs (Medtech Switzerland, 2005). Moreover, operating in an expensive country like Switzerland forces small and medium-sized enterprises to look for new ways to manufacture even better products using more sophisticated processes (BDO, 2013). However, the smallness of the domestic market in Switzerland causes significant scalability challenges for new ventures.

### Infrastructure

Extensive and efficient infrastructure is an important factor for ensuring the effective functioning of the economy. It determines the activities or sectors that can flourish within a country. Switzerland has one of

# Non-Entrepreneurship-Related Factors

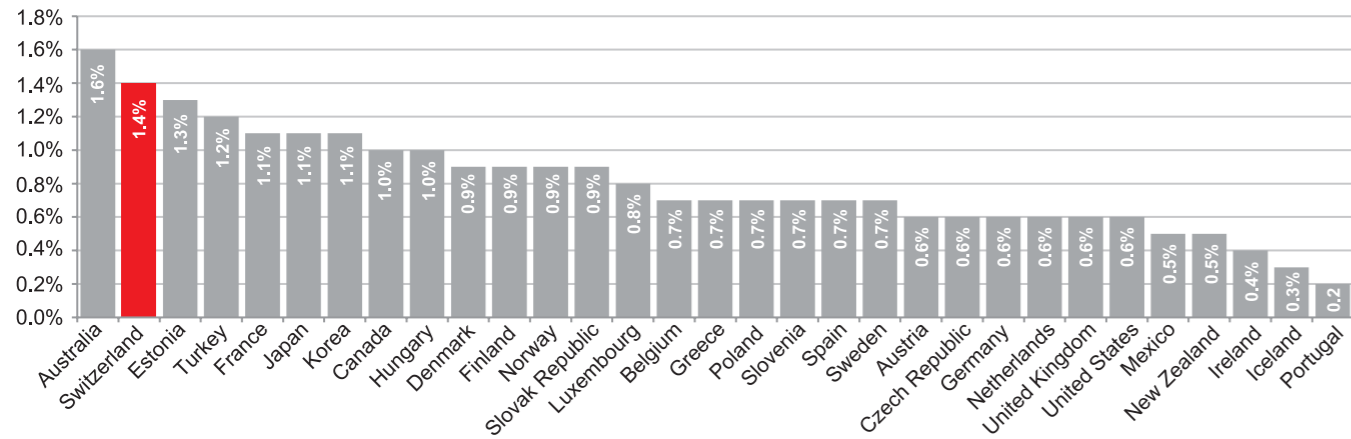


Figure 3: Transport infrastructure investment and maintenance spending in OECD countries as a percentage of GDP (Source: OECD, 2013).

the best-developed and maintained infrastructures in Europe. According to the Global Competitive Index (WEF, 2015), the quality of the Swiss infrastructure ranks highest in the world. A well-developed infrastructure reduces the distance between regions by connecting regional, national and international markets with each other. It consequently not only facilitates business activities in some regions but also helps to save costs due to optimized transport routes. The dense network of roads and public transportation provides an affordable and reliable mobility and makes it easy to reach neighboring countries. Moreover, the

air travel infrastructure is extraordinary given that airports are situated in all major regions (e.g. Zürich, Geneva, Basel, Bern, Agno, St. Moritz, Altenrhein). Among OECD countries, Switzerland outperforms many of its overseas competitors in transportation infrastructure investment (Figure 3). Modern and reliable telecommunications including cell phone networks, ISDN and other broadband connections ensure high-quality coverage. Switzerland also boasts a stable energy and water supply system that covers the entire country. On top of all that, Switzerland has a well-developed healthcare system that covers the entire

population and ensures immediate access to medical care (SGE, 2014).

With its highly developed infrastructure, Switzerland is a very attractive location to start a business. The Swiss infrastructure provides young companies with an easy access to the European market and stronger trade links. The modern infrastructure facilitates a more effective use of capital goods and it helps start-ups to move their products quickly and affordably. Finally, a country with such well-functioning infrastructure like Switzerland is very attractive for investors.

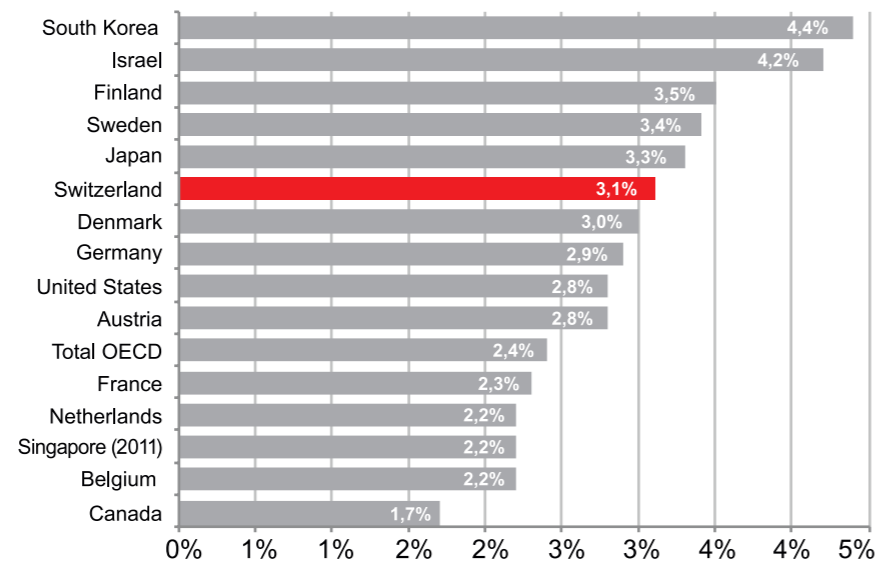


Figure 4: Gross domestic expenditure on R&D as a percentage of GDP (Source: SNF, 2012).

TOP 10	
1	Switzerland
2	United Kingdom
3	Sweden
4	Netherlands
5	United States of America
6	Finland
7	Singapore
8	Ireland
9	Luxembourg
10	Denmark

Table 3: Global Innovation Index 2015 (Source: GII, 2015)

## Innovation

Switzerland is consistently among the world's most innovative countries (Table 3) (Global Innovation Index, 2015). It's knowledge and technology output is particularly strong as compared to the other countries and it is ranking second with regards to creative output. The country invests over three percent of its GDP in research and development, placing it among the top ten countries worldwide (Figure 4).

The largest proportion of R&D in Switzerland is funded privately (Figure 5), particularly in the pharmaceutical, chemical, and engineering industries (SNF, 2012). Public R&D funding in Switzerland (federal and cantonal) made up 25% of the total sources of financial support in Switzerland in 2012, which is nearly 10% below the European average. Approximately a quarter of federal funding for R&D is distributed by the Swiss National Science Foundation (SNSF) – an institution which supports research at higher education institutes and research institutions based on a competitive evaluation procedure (Figure 6) (SNF, 2012). R&D spending by the federal government fell below CHF 2 billion in 2014 (CHF 1.96 billion) a significant drop compared to 2012 (CHF 2.12 billion). This drop of 7% in R&D spending can, in part, be explained by the EU decision to stop funding research collaborations through their Horizon 2020 initiative, following the February 2014 vote to limit EU immigration (Swiss Info, 2015).

Switzerland has 60 higher education institutions, of which four universities are among the top 100 of The Times Higher Education World University Ranking, with the Swiss Federal Institute of Technology Zurich (ETH) ranking #9 in 2015 and the Swiss Federal Institutes of Technology in Lausanne (EPFL) ranking #31.

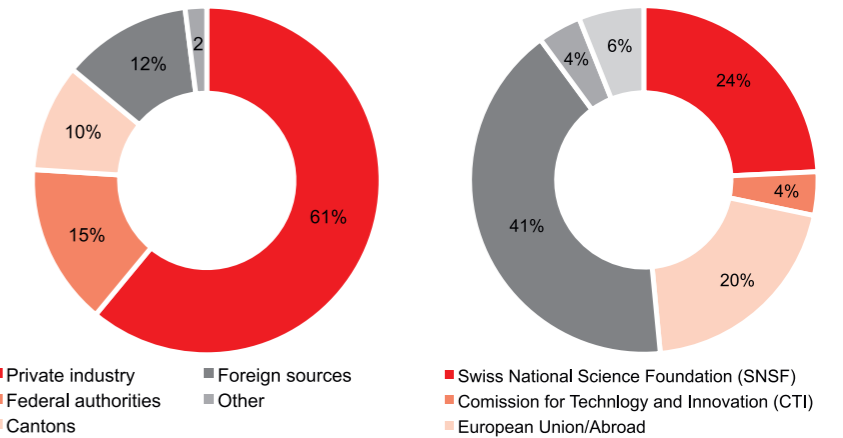


Figure 5: Sources of finance for R&D in Switzerland, excluding flows of funds abroad (Source: SNF, 2012).

All these institutions have close links with the international research community, participate in scientific partnerships, and collaborate with industry through knowledge and technology transfer (SGE, 2014). With the highest number of scientific publications per researcher, Swiss scientists are not only the most productive in the world, but they also significantly shape the scientific landscape (second place of relative Citation Index, Figure 7). Swiss publications in the fields of life sciences, agriculture, biology, environmental sciences, and clinical medicine count the highest number of citations worldwide. In the fields of engineering, computer science, physics, chemistry, and earth

sciences Switzerland also rank among the best worldwide (SER, 2011). However, according to the Global Competitiveness Report (2014-2015), businesses and research institutions may increasingly face difficulties in finding the talent they need to preserve their outstanding capacity for innovation, which poses a potential threat to Switzerland's competitiveness. Since 2012, the country has lost 10 places (from 14th to 24th) on the indicator which measures the availability of engineers and scientists. In addition, the report points out that this problem could be exacerbated due to the recent election in which Swiss citizens have voted in favor of an

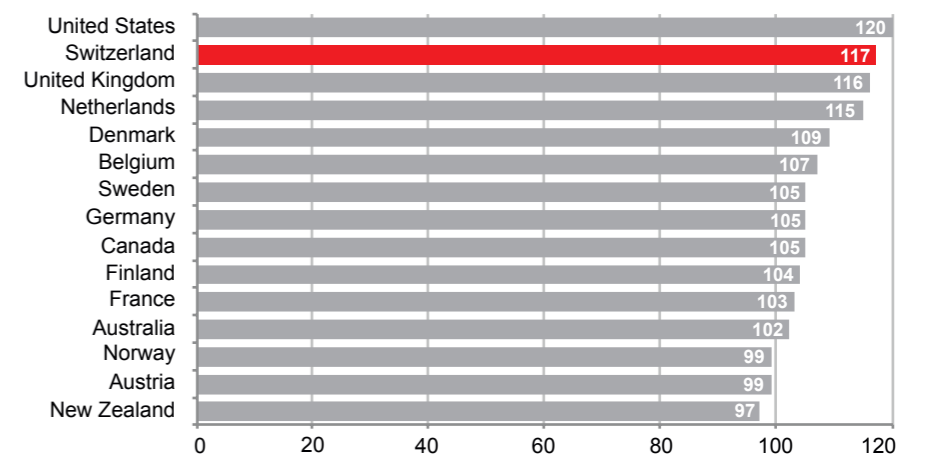


Figure 7: Relative Citation Index (Source: SNF, 2012).

# Non Entrepreneurial Factors

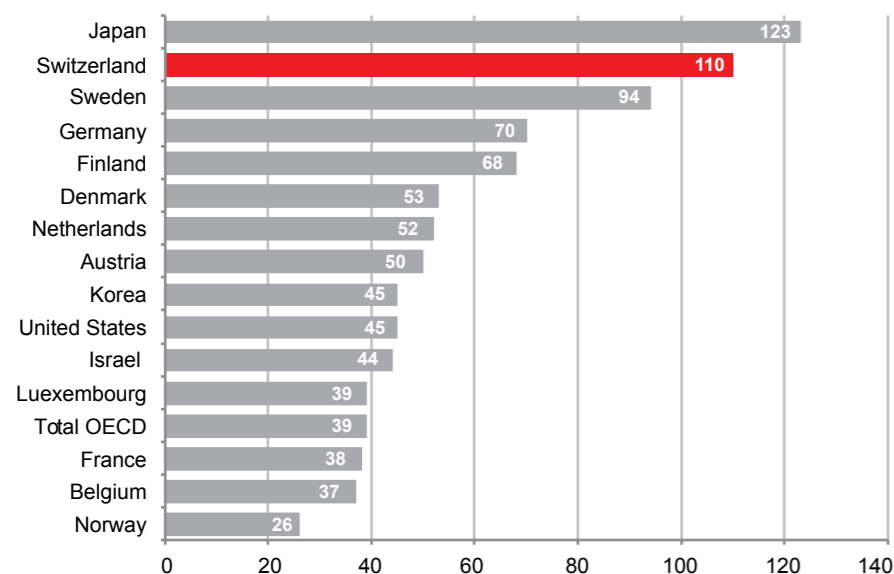


Figure 8: Number of patents per million inhabitants (Source: SNF, 2012).

initiative aimed at limiting the ability of European Union workers to immigrate by reintroducing quotas.

Switzerland is also very active with regards to protecting its inventions. According to European Patent Office (EPO), nearly 8'000 patents were registered in Switzerland in 2014. Given its relatively small number of residents, Switzerland is therefore the second most productive country with regards to patents per capita, right after Japan (Figure 8). Most of the patents in Switzerland were filed by ABB (450), followed by Nestlé (442), Roche (357) and Novartis (323). But not only large multinationals are productive in filing patents. Also the Swiss universities ETH Zurich, EPFL and the University of Zurich rank among the top 25 patent applicants in Switzerland. Switzerland also has one of the highest numbers of Nobel Prize winners per capita in the world, which is another sign of the country's world-leading research (OSEC, 2012; SGE, 2014).

Overall, Switzerland is a fruitful breeding ground for startups due to its high

innovation capability. This innovative environment encourages and facilitates entrepreneurs to enter the markets with their novel products and services.

## Government and regulations

Switzerland has a unique political structure with its direct democracy at all governmental levels. The federal system of Switzerland is characterized by a structure consisting of three different political levels, namely the Confederation, the cantons and the municipalities, which creates strong links between government, business, and civil society and ensures reliable governance. Referendums, initiatives and plebiscites allow Swiss citizens to actively and directly participate in the political process. The stable political situation ensures highest reliability for business and practical decisions that are well supported by the population (Linder, 2010). Switzerland has a competitive tax system with taxes being set and levied by the federal government, cantons, and municipalities. The Swiss Federation levies corporate income tax at a flat rate, while cantonal tax rates vary by location and sometimes by level of capital or profit.

However, companies may be granted a full or partial tax exemption if they create jobs in Switzerland with an investment project. In addition, inter-governmental treaties with almost 60 states, including most Western industrial nations, are in place to prevent double taxation (SGE, 2014).

Swiss government and regulations are very supportive for entrepreneurs. Any person in Switzerland can run a business due to the principle of freedom of trade, as long as the authorized signatory is domiciled in Switzerland. Efficient administrative processes ensure that daily business activities run smoothly and the progressive environmental legislation guarantees sustainability (SGE, 2014). Forming a company in Switzerland is a relatively easy matter. According to the World Bank Doing Business Report, Switzerland ranks above the average on the ease of doing business index (rank 20/189) (World Bank, 2015). It generally takes two to four weeks from submission of the application until the company can legally deal with third parties and the cost to start a limited liability company is a minimum capital of CHF 20'000. In addition, Swiss residents have the possibility to make an early withdrawal of personal retirement savings to become self-employed (e.g. UBS Switzerland AG, 2015a). Switzerland's federal tax system is favorable for starting a business compared to other European countries due to its general low rate of taxation, and the various tax exemptions or reductions available to Swiss companies.

## Geographical location

Switzerland is located at the heart of Europe. As a communication and transportation node between Northern and Southern Europe, the country provides Swiss-based companies with an excellent platform from which to access the

European market (Figure 9). Three of the four largest European markets and economies are neighboring countries of Switzerland (Germany, France, and Italy). Switzerland is known for its high standard of living. It receives excellent ratings on criteria such as climate and geography, family and social life (SGE, 2014). Switzerland has very high costs of living compared to other countries in the world. According to a recent study by the UBS (2015b), Zurich and Geneva are the most expensive cities worldwide. Despite those expenses, workers in Zurich and Geneva rank second and third behind residents of Luxembourg in terms of relative gross salaries and enjoy one of the highest purchasing power in the world, UBS said. The country is the point of intersection for many languages and different cultures. There are four official languages in Switzerland: German, French, Italian and Romansh. The co-existence of various language groups and different religions as well as the large proportion of foreign residents makes it easier for foreign companies to conduct business from Switzerland. The co-existence of various language groups and different religions, and the large proportion of

foreign residents result in a high degree of openness and tolerance. However, as a result of the aforementioned acceptance of the Mass Immigration Initiative by the Swiss people, the question remains as to whether or not Switzerland can retain its openness and tolerance and therefore remain a magnet to attract international talents.

Due to its central location, Switzerland is a very attractive business location for start-ups. No country offers such great variety in terms of language and culture in such a small geographic setting. Because of its multilingual and multicultural setting, Switzerland is an excellent test market for the heterogeneous European market (Amcham & BCG, 2006). In addition, the great diversity of language groups and cultures makes it easier for foreign start-ups to conduct business from Switzerland. Finally, as the communication and transport hub between Northern and Southern Europe, starting a business in Switzerland facilitates the interaction with the European market.

This section has assessed the five key non-

entrepreneurial factors in Switzerland, namely market, infrastructure, innovation, government and regulation, and geographical location. Overall, Switzerland provides very favorable non-entrepreneurship-specific factors for starting-up a business. It has an attractive market, overarching infrastructure and an optimal geographic location for creating a new business. Nevertheless, start-ups in Switzerland are confronted with various scalability issues because of the smallness of the Swiss market. Although the country's capacity to boost innovation is beneficial, due to the freeze in research collaborations with the EU following the February 2014 vote to limit EU immigration, Switzerland has experienced significant cutbacks concerning investment in research. Since this vote Switzerland is no longer able to participate in the EU Horizon 2020 research program as an associated country, and is only allowed to participate on a minimal basis (partial basis) as a third country partner until the end of 2016 while the implementation of the immigration quotas is being negotiated with the EU. Moreover, the acceptance of this initiative might be a potential threat for Switzerland's competitiveness (WEF, 2015), because it enhances the difficulty in finding qualified workers and has the potential to decrease Switzerland's appeal as a business location. Finally, the Swiss government and regulation can be considered very supportive for starting a business. However, there is growing concern about the Corporate Tax Reform II. It implies that startup financing rounds are being specifically identified in the balance sheets. As a consequence, wealth taxes may occur for the founders as a result of funding rounds – which take a forward-looking perspective of a prospective future value of a company – instead of the current value based on the company's financial performance (Vonplon, 2015; Startupticker, 2015).

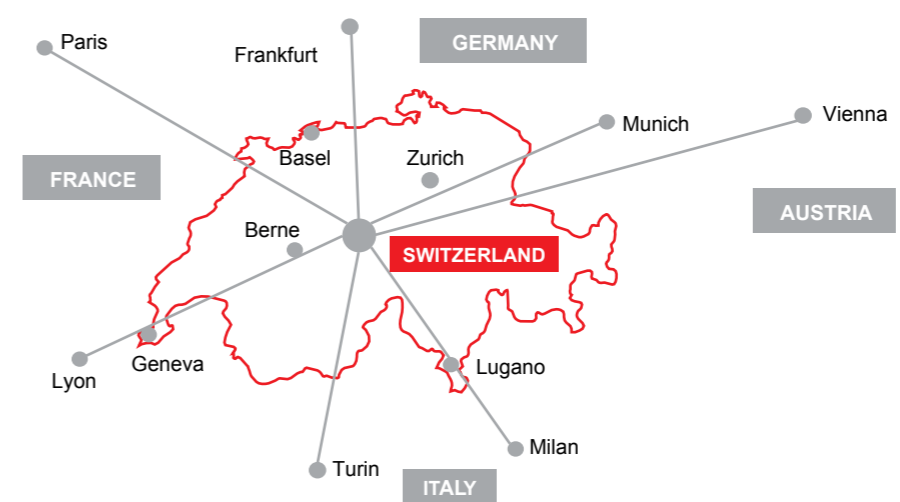


Figure 9: Switzerland at the heart of Europe (Source: compiled by the Swiss Start-up Monitor).



# Entrepreneurial Factors

## ENTREPRENEURIAL FACTORS

Entrepreneurial factors refer to the start-up-specific environmental context, which is directly related to establish a new venture. These factors include entrepreneurial support structures, visibility for entrepreneurs, entrepreneurial network, venture financing, entrepreneurship education and a culture for entrepreneurship. The following section analyzes these dimensions in greater detail. Figure 10 shows an overview of start-up support initiatives for Swiss start-ups (see Appendix II for a detailed list).

### Entrepreneurial Support

In Switzerland, entrepreneurs have access to a wide variety of support. There are a lot of governmental and non-governmental support institutions, incubators, hubs, co-working spaces and coaching initiatives. Most of them offer enterprises a full range of services to help setting up a business, support entrepreneurs that want to internationalize their business and train market intelligence innovation capacity. At the governmental level, the federal agency Commission for Technology and Innovation (CTI) has been successfully supporting innovative individuals since 1996 with the initiative CTI start-up, CTI entrepreneurship and a variety of funding instruments. CTI start-up provides a tailored, hands-on coaching process by experienced and successful entrepreneurs. The CTI Entrepreneurship is the Swiss federal training program for startup founders. The CTI Market Entry Camps provide an individualized acceleration program for the most promising Swiss startups with global ambitions looking to expand into the US, India, China, and UK. Moreover, a variety of local training and support programs are available on a non-governmental level. For instance, the Startup Weekends or the initiative SwissChallenge from the University of Applied Sciences Northwestern Swit-

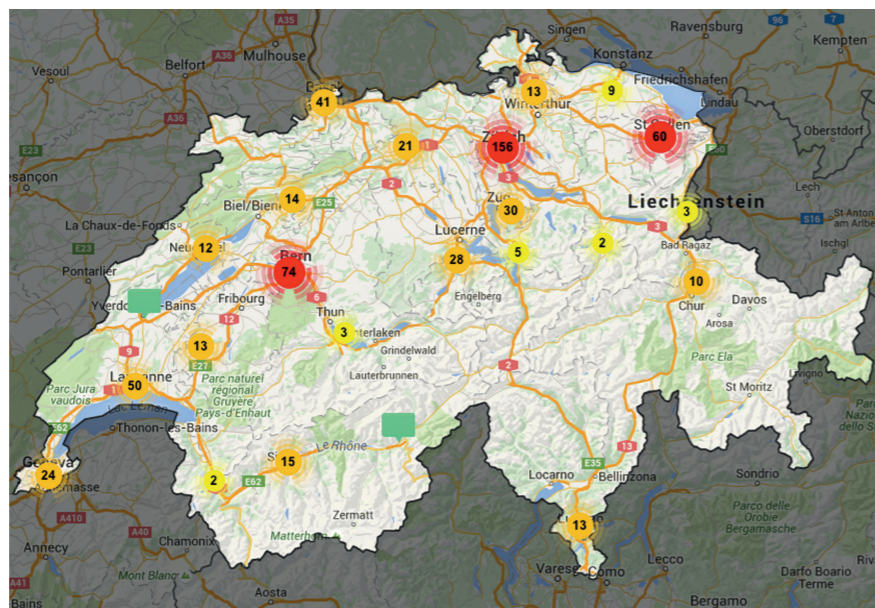


Figure 10: Start-up initiatives and organizations (Source: compiled by the Swiss Start-up Monitor, 2015).

zerland (FHNW) and its partner offer an innovation promotion program in the form of a competition where participants have to come up with innovative business ideas. The ETH Innovation und Entrepreneurship Lab (ieLab) brings together talented young entrepreneurs from ETH Zurich, experienced individuals from the business world and alliance partners from the industry. The EPFL Innovation Park – among many other innovation parks in Switzerland, provides a dynamic location for high tech companies to innovate. The Wyss Translational Center

Zurich brings together the talent and infrastructure of the University of Zurich and ETH Zurich to foster translational research in the fields of Regenerative and Robotics Technologies. Similarly, the Biotech Campus in Geneva or the Balgrist Campus in Zurich are cutting-edge centers of innovation. In the field of social entrepreneurship, well-known supporters include the Impact Hub Zurich and the Social Entrepreneurship Initiative and Foundation (seif). Incubators such as the Basel Incubator provide physical space, infrastructure and diversified coaching

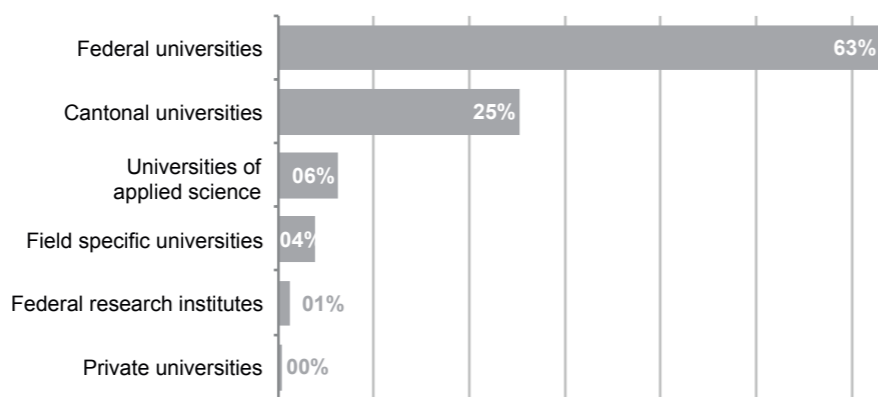


Figure 11: University affiliation of new ventures registered on Start-up Monitor (Source: Swiss Start-up Monitor, 2015)

programs. Fintech Fusion, Switzerland's first fintech accelerator, is designed to bring fintech start-ups and companies together for a 12-month program focusing on the go-to-market phase. The aim of all these support programs is always the same: provide entrepreneurs with the support necessary to reach the next level. The start-up support in Switzerland is comparatively good. Currently, there is a wide range of institutions that provide start-up support at all stages of the entrepreneurial process. However, even if universities have put greater emphasis on supporting start-ups in recent years (courses, incubators, events, seed funds, etc.), there is still a considerable need for action. Figure 11 illustrates for example, that the majority of start-ups registered on the Start-up Monitor are affiliated to federal (ETHZ and EPFL) and cantonal universities (88.5%), but only 6.2% to universities of applied science, 3.8% to field specific universities, and 1.2% or less to federal research institutes and private universities. Measures to support students from universities of applied science, field specific and private universities, as well as research institutes are important as they may have the potential to further catalyze entrepreneurial activity in Switzerland.

### Visibility

The visibility of a start-up is crucial for its legitimacy (DiMaggio, 1992). A new firm is usually relatively unknown and the quality of the product or service is not proven yet. Consequently, the quality of young companies often cannot be observed directly and external parties must appraise the company based on observable attributes that are correlated with the unobserved quality of the venture (Stuart et al., 1999). Being visible helps new ventures to partly overcome the liabilities of newness because observable characteristics may serve as a signal of the start-up's legitimacy (Stinchcombe,

1965; Baum et al., 2000). Hence, bridging the information gap with stakeholders is particularly important for start-ups seeking to commercialize unproven products, technologies or services. Several mechanisms intend to shape stakeholder's perceptions about the quality and potential capacity of a start-up. These include external certification, such as affiliation with reputable third parties (Elfring & Hulsink, 2003), patents, government grants, awards (Ahlers et al. 2015), and media presence (Vogel, 2013).

With a great diversity of start-up competitions and government grants and several nation-wide startup blogs and websites, the opportunities for entrepreneurs to increase visibility in Switzerland are abundant. Among the best-known competitions are Venture, venture kick, the price of the Foundation W. A. de Viggier, the Heuberger Young Entrepreneur Award and the ZKB Pioneer Prize. The news portal startupticker.ch is Switzerland's most prominent online platform for young entrepreneurs, innovators and supporters. The Swiss Start-up Monitor is Switzerland's central start-up community that matches stakeholders within the Swiss entrepreneurship ecosystem and provides registered users with a variety of benefits, such as free access to contract templates.

The opportunities for start-ups to enhance their visibility in Switzerland can be assessed as good due to the wide range of competitions and several media outlets. However, the visibility is mainly focused on the start-up scene, but does not necessarily reach the general public of Switzerland. Moreover, the visibility mainly happens on a national level – with the exception of a few initiatives such as Swissnex or Venture Leaders – and therefore does not support founders enough in building a global reputation

and an ambition to grow a Swiss-based yet globally operating enterprise (Vogel & Grichnik, 2014).

### Network

Networks are essential for the success of a start-up. Most start-ups have to overcome an initial lack of substantial managerial, financial, organizational, and physical resources necessary to transform their ideas into a viable business. Moreover, the aforementioned liability of newness and smallness requires smart strategies and a bootstrapping attitude (Grichnik et al., 2014). More specifically, Grichnik et al. (2014) highlights bootstrapping as a key resource acquisition approach to respond to the inherent resource constraints that nascent ventures face. Under this view, bootstrapping is an alternative resource management approach directed at avoiding market-based resource transactions. The authors point out that managing different resource groups simultaneously within a venture is highly relevant for the organizational development. Thus, being well connected is essential for start-ups as it complements the potential resource base of the firm (Aldrich & Zimmer, 1986; Newbert et al., 2013). In general, a well-developed network in terms of quantity and quality of ties is considered to be beneficial to a start-up (Larson & Starr, 1993). Regarding the type of networks, the literature indicates that entrepreneurs initially rely on their strong tie network, which is formed by close personal contacts, such as family members and friends. These personal contacts not only provide intangible resources such as emotional support, but also initial financial resources to start-ups (Grichnik et al., 2014). In a more advanced stage of business development, start-ups tend to rely on their weak tie network, which comprises more distant business contacts (Hanlon & Saunders, 2007). This type of network provides diverse professional

# Entrepreneurial Factors

information, rich expertise, and different tangible resources such as infrastructure (e.g. Brush et al., 2001, Hanlon & Saunders, 2007). Elfring and Hulsink (2003) emphasize that entrepreneurs make use of strong ties to attain vital resources and weak ones for achieving legitimacy and discovering opportunities.

An entrepreneurship ecosystem typically constitutes of network clusters, bounded by a geographical concentration of interdependent business contacts (weak ties) (Rosenfeld, 1997). Network clusters arise for a number of reasons, including shared inputs, skilled labor pooling, and knowledge spillovers (e.g. Audretsch & Feldman, 1996; Marshall, 1920). The proximity of these institutions ensures intensified communication and interactions, and facilitates information sharing between the institutions and start-ups located within the cluster. In addition, a well-functioning network cluster fosters entrepreneurial activity by providing effective innovation mechanisms and by facilitating the commercialization

of new products or services. Entrepreneurial activity in turn leads to cluster growth through the development of new businesses and new cluster members. Network clusters and entrepreneurial activity reinforce one another, leading to a more rapid local economic development through cumulative causation (Feldman & Francis, 2004). Finally, a vibrant cluster creates an attractive hotspot for foreign players, eager to benefit from the interactions (Lundan, 2002). Thus, the choice of location is an important strategic decision for entrepreneurs.

Switzerland has several industry clusters which are not only of national but also of international significance. Chemical and pharmaceutical firms such as Novartis or Roche and a dense network of medtech, biotech, and nanotech companies form a unique industrial cluster in Northwestern Switzerland, which is also part of the international Biovalley cluster. The machinery, electrical engineering and metals industry (MEM) is the largest industrial sector in Switzerland and holds

a key position in the Swiss economy with well-known names such as Saurer, Rieter, Schindler and ABB. These companies are particularly present in the regions of Zurich and Aargau, the Ticino, the Valais, in the Rhine Valley and in Central Switzerland. The Swiss financial center is an important element of the economy creating a significant cluster around Zurich and Geneva. Both cities are among the world's top ten financial centers. In the region along the Jura from Geneva to Schaffhausen, a "precision cluster" has developed due to the geographical concentration of the traditional watchmaking industry. The cities of Geneva, Biel and La Chaux-de Fonds are three watchmaking centers, where companies such as Swatch Group, Rolex SA, Richemont SA and the LVMH Group are headquartered. In the Zurich area well-known companies from the IT sector have settled around the ETH Zurich, its research facilities and the University of Zurich, such as IBM, Google and Microsoft (SGE, 2014). For the aforementioned reasons, many Swiss start-ups have basically been centered on these

industrial clusters. The Start-up Monitor database confirms this trend, showing for example that while in Zurich and Geneva ITC high tech start-ups are prominent, in Basel-Stadt and Basel-Land dominate new ventures from the Biotech & Pharma and Medtech & Diagnostics industry (Figure 12). However, with the exception of ETH and EPFL, there are hardly any regional entrepreneurship specific ecosystems (Vogel & Grichnik, 2014).

## Venture financing

Obtaining adequate access to capital is a key component in the entrepreneurial process to respond to the inherent resource constraints that new firms face. Therefore, access to financial support is an important entrepreneurial framework condition. The source of financing depends on the stage of new venture development (Wu et al. 2007). In the seed stage, businesses are characterized by a lack of track record and high levels of uncertainty. Firms operating in this early stage are investing heavily in the creation of their business, but are oftentimes not generating suf-

ficient revenues and profits to achieve a satisfying Return on Investment (ROI). At this stage, the most common sources of start-up funds are personal savings, family and friends, bootstrapping and business plan competitions. These types of financial sources are popular because they are the cheapest sources of capital and immediately available. As the firm reaches the growth stage, they generate a sales and profit history to inform investors about the potential of the business. The major source for start-ups in this stage is external investors as they have also the possibility to provide higher investments (Grichnik et al., 2010; Seidman, 2005). Analyzing the start-ups mapped in the Swiss Start-up Monitor shows that founder, family and friends were the financial source in 19% of the cases. The most frequently mentioned external financial sources are business plan competitions (33%) and business angels (17%) followed by public or government agencies (12%), venture capitalists (7%). Banks, foundations, family offices and corporate venture capitalists account for a

relatively small proportion of all resource types. Founder, family, friends and money prizes from business plan competitions together account for six percent of the total investment volume, whereas venture capitalists with 58% represent the highest investment amount (Figure 13).

In Switzerland, there is a large diversity of funding for the seed phase of a new venture and several sectors such as MedTech and Biotech have a strong basis of venture capitalists and corporate venture capitalists willing to invest in later stage companies. However, there is still a certain lack of capital for the early growth stage of start-ups (Vogel & Grichnik, 2014). Despite its highly competitive position with regards to overall availability of funding, later-stage funding is less well pronounced when compared with similarly active countries such as the US, the UK or the Scandinavian countries (SECO, 2012). The Swiss Venture Capital Report (Kyora & Heimann, 2015) shows that in 2014 Swiss start-ups collected more than CHF 450 million in 92 financing rounds, of

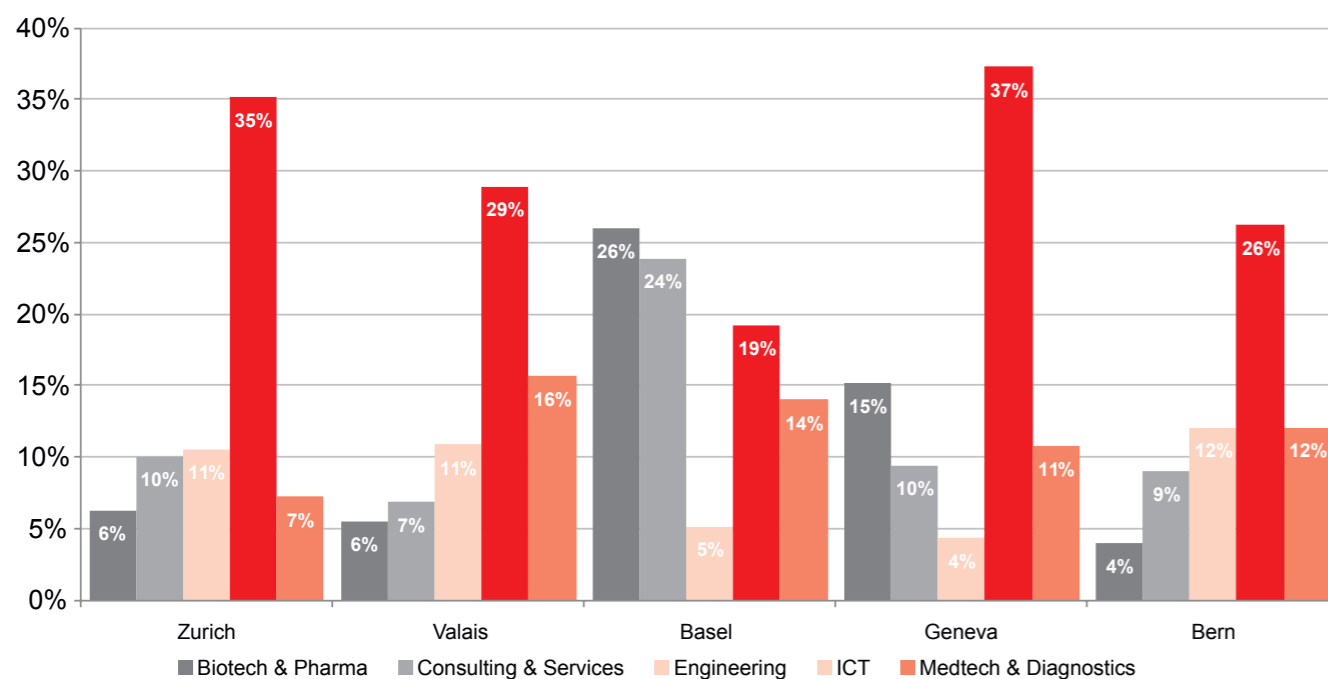


Figure 12: Top five industry distribution among top five cantons (Source: Swiss Start-up Monitor, 2015).

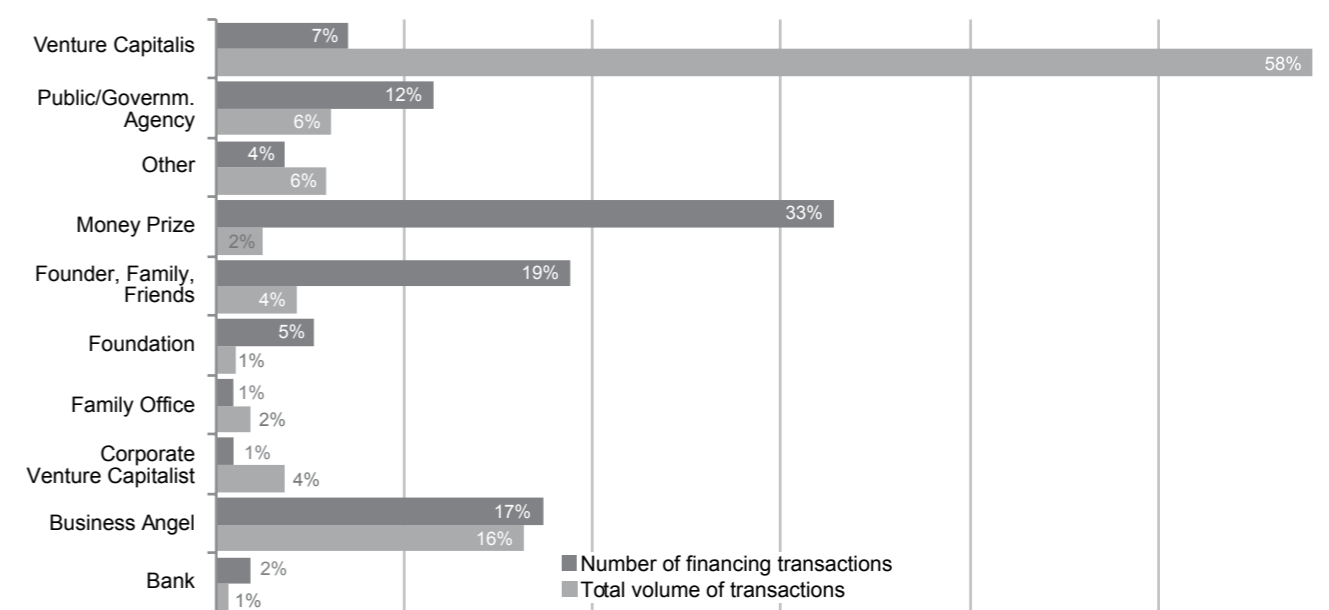


Figure 13: Number and total volume of transactions per type of source (Source: Swiss Start-up Monitor, 2015).

which more than three quarters of the invested money (78%) went to companies in the life science sectors. The largest sum of CHF 200 million was invested in start-ups located in the canton of Vaud, followed by Zurich, where nearly CHF 130 million flowed into young companies. Taking a closer look at the financing rounds, the study reveals that out of the 92 recorded rounds eight were seed (CHF 1 million), 45 early stage (CHF 122 million) and 39 later stage investments (CHF 334 million). Although the total invested sum rose in 2014, the report highlights two problems: the funding gap, of between CHF two million and CHF ten million has become larger and the average level of investment in financing rounds has declined.

To conclude, venture financing is generally available in Switzerland, but not equally for all stages of the entrepreneurial growth process. Start-ups in the seed stage have access to an abundance of different forms of financing. Several sectors such as MedTech and Biotech have a solid basis of venture capitalists and corporate venture capitalists willing to invest in late stage companies. However, there is a clear lack of early growth-stage funding (Vogel & Grichnik, 2014). For example, the medtech start-up NaviSwiss, founded in 2007 as a spin-off of the Swiss IFE (Industrielle Forschung und Entwicklung) GmbH, states in an article published in the *Handelszeitung* that as the firm is already in a later stage, it is confronted with considerable difficulties in obtaining funding which is urgently needed for the finalization and certification of their last prototype. Nascent start-ups have the possibility to access capital through business plan competitions or a variety of supporting programs. These possibilities are, however, limited for early growth stage start-ups. In the worst case, if the fundraising process is not successful, the firm needs to think about patent exploita-

tion, NaviSwiss said (Steinhoff, 2014).

Furthermore, if the lack of early growth-stage funding is not taken serious, many companies will be turning their back on Switzerland and seek support in startup hubs such as in Berlin, London, Boston or the Silicon Valley. An illustrative example for this issue is the Web of Things software company EVRYTHNG, which moved from Zurich to London as they have received funding from international technology investment firm Atomico, New York-based private equity investors BHLP LLC, London-based venture capital firm Dawn Capital, and with a corporate investment by Cisco (Skinner, 2015; Startupticker, 2014). Furthermore, the limited access to capital may also cause scalability issues. A vivid example provides the NFC gadget and marketing platform provider Poken. The start-up received an investment of USD 2 million in 2012 in order to dramatically expand its US Sales Operations (Startupticker, 2012). To address this concern, the initiative Swiss Investment Fund (SIF) of the Swiss Private Equity & Corporate Finance Association (SECA) aims to close this financing gap and foster innovative entrepreneurship in the Swiss innovation ecosystem. It is imperative that the Swiss entrepreneurial ecosystem players do everything in their power to retain high-growth ventures in Switzerland, or else all the benefits ascribed to high-growth ventures (job creation, taxes, etc.) will flow to another economy.

## Entrepreneurship Education

Entrepreneurship education plays a central role in shaping entrepreneurs. There is an ongoing debate about whether entrepreneurs are born or made. While certain psychological traits have been associated with entrepreneurial activities, it is widely believed that entrepreneurs can be cultivated through education (at least

to a large extent). According to the famous words of Peter Drucker (1986), „Most of what you hear about entrepreneurship is all wrong. It’s not magic; it’s not mysterious; and it has nothing to do with genes. It’s a discipline and, like any discipline, it can be learned“. Entrepreneurship education can provide future entrepreneurship with the necessary tools and skills to start their own ventures. In addition, entrepreneurship education seeks to help novice entrepreneurs develop the right attitude and mindset necessary to spur economic growth. Hence, access to entrepreneurship within educational systems is of major importance at all levels (Volkman et al., 2009). Empirical evidence suggests that entrepreneurial activity is positively influenced by entrepreneurship education programs. Summit Consulting (2009) shows that 39% of graduates who took higher education entrepreneurship classes have founded an entrepreneurial organization. This was the case only for 26% of those who had not taken such a class. Of course such findings need to be interpreted with care, given that there is a selection effect with regards to who signs up for entrepreneurship classes. Yet, it is nonetheless an insightful and promising finding. Another study conducted by Lange et al. (2011) indicates that students who took two or more entrepreneurship courses were significantly more likely to found a venture at the time of graduation or long afterwards.

Entrepreneurship education constitutes three main areas that cover different stages in the lifelong learning process of an individual: youth, higher education and senior levels. With the rise of the digital age, barriers to entry have become significantly lower for young people, because of two reasons: each successive generation yields more technology savvy entrepreneurs and geographic barriers to businesses have been essentially eliminated.

However, the natural entrepreneurial spirit in young people is often curbed by the structure of mass education. Thus, more and more countries worldwide have begun to recognize the weakness in their systems that train young people to respond to economic opportunities instead of creating them (Volkman et al., 2009). Volkman et al. (2009) argue that youth entrepreneurship is not essentially different from entrepreneurship among adults. However, youth entrepreneurship promotion programs need to account for the lack of work- and industry experience of young prospective entrepreneurs (Vogel, 2013). Apart from the inherently different levels of intellectual and behavioral maturity, the only difference is how entrepreneurship is taught and how it is learned. At the level of higher education, universities play a key role in creating knowledge and producing high-potential graduates and researchers. According to the European Commission (2008) such entrepreneurship education programs can have various objectives, like for example: a) developing entrepreneurial drive among students (raising awareness and motivation); b) training students in skills they need to set up a business and manage its growth; c) developing the entrepreneurial ability to identify and exploit opportunities. Finally, seniors are often in an excellent position to start a business: they bring long-standing experience and expertise, a strong financial position, a well-developed network and are free from family responsibilities. However, more senior people have been found to participate less in entrepreneurial activities and view self-employment less desirable than younger people (Halabisky, 2012). Hence, education and training programs toward opportunity recognition are of major importance at the senior level of education.

In Switzerland, entrepreneurship educa-

tion for youth (secondary level education) is scarce. An exception is the YES-program (Young Enterprises Switzerland, part of Junior Achievement), an association which develops and supports practice-oriented business training programs for high-school students in Switzerland. The majority of universities and universities of applied sciences has established chairs for entrepreneurship and now offer courses in entrepreneurship, providing profound theoretical and practice-oriented skills for being, acting, and thinking like an entrepreneur. According to a recently published study by the University of St.Gallen, 2% of Swiss students intend to start a business directly after graduation, while 17.7% plan to establish their own company five years after graduation (Sieger et al., 2013). Compared to other countries, these numbers are relatively low. At the time of the survey, only 4.7% of students across all disciplines were in the process of founding their own business. In Switzerland, no education program at a senior level is offered. Due to its ageing population and the trapezoidal age pyramid, Switzerland untapped potential of seniors is largely lying dormant.

Overall, there is significant room for improvement in entrepreneurial education at all stages of the learning process of an individual, especially at the junior and senior levels. Although a majority of universities and universities of applied sciences have established chairs for entrepreneurship offering courses in entrepreneurship, experts criticize the lack of attention that is given to creativity, self-sufficiency, and personal initiative, instruction in market economic principles and entrepreneurship in primary and secondary education (GEM, 2014). Similarly, Mayer-Haug et al. (2013) state that since experience has been found to be a key success factor, entrepreneurial education needs to become more action-oriented

in order to foster new venture success.

## Culture

Cultural attributes refer to the underlying beliefs and outlooks about entrepreneurship within a region. Previous research has examined that the level of entrepreneurial activity varies across countries and this variation has been associated with economic and social benefits (e.g., Audretsch & Thurik 2000). For example, Mitchell et al. (2000) showed how cultural differences, in particular Hofstede’s individualism and power distance dimensions, shape entrepreneurial cognition and affect the venture creation decision. Thomas and Mueller (2000) discuss the influence of national culture on entrepreneurial characteristics like locus of control and risk taking. A recent meta-analysis by Brinckman et al. (2010) found that uncertainty avoidance shapes the relationship of business planning and the performance of young and small firms. According to Spigel (2015) the two main cultural attributes of an entrepreneurial ecosystem are attitudes and histories of entrepreneurship. Cultural beliefs shape the outlook about entrepreneurship as a viable career choice or as something to be undertaken only when no other options are available (Kibler et al., 2014). Another important aspect is the extent to which a culture stigmatizes entrepreneurial failures. It has been shown that in cultures characterized with collectivism and high uncertainty avoidance, the fear of stigmata associated with entrepreneurial failure leads to relatively low levels of entrepreneurial activity (Hofstede, 1980; Hofstede, 2002; Hayton et al., 2002; McGrath, 1999). In some cultures, failure is seen as positive learning experience whereas in others, it is stigmatized. The Global Entrepreneurship Monitor (GEM) looks at key predictors of entrepreneurial culture around the world, including fear of failure, perceptions about entrepreneurial

# Entrepreneurial Factors

opportunities and capabilities, entrepreneurship as a career choice, high status successful entrepreneurship and media attention for entrepreneurship. According to the GEM 2014 data, Switzerland expresses little fear of failing, i.e. 29% for those seeing opportunities indicate to have fear of failure, which is nearly the same as that of the USA and far below the European average. The GEM data shows that individuals in Switzerland has average perceptions about the presence of good opportunities for starting a business (43.6%), as well as the beliefs they have the skills and knowledge necessary to start a business (41.5%). Only 42.3% of the Swiss population considers entrepreneurship as a desirable career choice. In addition,

successful entrepreneurs do not receive a very high status (65.8%), as well as a moderate media attention (50.4%) (Figure 14). The Global Entrepreneurship Monitor observed a positive change in Swiss cultural and social norms over the last ten years. While culture and social norms have been considered to restrain entrepreneurship in the first half of the last decade, they have increased considerably in the last few years (GEM, 2013). Another remarkable factor is the growing rate of women entrepreneurs in Switzerland. According to the Global Entrepreneurship Monitor (2014), Switzerland enjoys one of the best positions in terms of women's entrepreneurial activity with a practically equal woman-to-man

ratio. In Switzerland, as in most other countries in the world, the proportion of men and women in the 15 to 64 age group is equally distributed. However, in most countries, the number of female entrepreneurs is much lower as compared to their male counterparts. This tendency can be well explained by various social, cultural, or economic factors (GEM, 2014).

Prominent histories of entrepreneurship are an important cultural attribute and have the potential to shape cultural outlooks about entrepreneurship (Feldman et al., 2005). As Feld (2012) points out, stories and role models of successful local entrepreneurs can inspire younger entrepreneurs to undertake similar journeys.

One prominent example of such a success story in Switzerland is Sensirion. Founded in 1998 as a spin-off from the ETH Zurich, Sensirion has become one of world's leading manufacturers of humidity sensors and other sensor solutions. The company currently has about 550 employees in Switzerland (a total of about 600 worldwide) and generated revenues of CHF 150 million in 2013. Sensirion is based in Stäfa near Zurich, Switzerland. Whereas research, development, and production is mainly conducted at its headquarters in Switzerland, the company also has employees in various other countries such as the USA, South Korea, Japan, China, Taiwan, the UK, Ireland, and Germany. To sum up, the Swiss entrepreneurship

culture is well on track, but there is still room for improvement. It has been observed that the Swiss entrepreneurship culture has changed toward encouraging people in their decision to start-up an enterprise and it is noteworthy that fear of failure in Switzerland is at the same level as in the US. However, Swiss experts notice a lack of entrepreneurial risk-taking in the Swiss culture (GEM, 2014). Hence, events such as the Failcon – a conference for startup founders to study their own and others' failures and prepare for success – can be of great value to help entrepreneurs understand the concept of failure and learn from their own and other people's failures.

**This section looks at the entrepreneurial factors in Switzerland and leads to the conclusion that while some of the factors are very strong, others still need substantial improvement. While entrepreneurial support and visibility score well, culture, network, venture financing and education are below the average and have considerable potential for improvement. Next we will look at the entrepreneurial activity in Switzerland.**

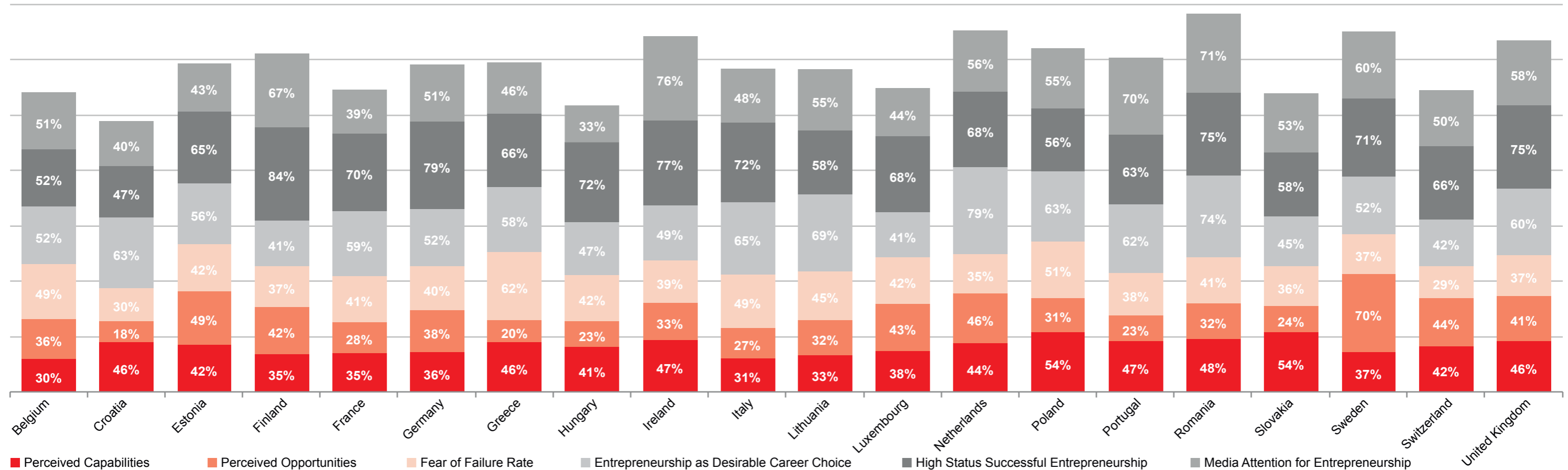


Figure 14: Entrepreneurial culture (Source: GEM, 2014).

# Entrepreneurial Activity in Switzerland

## ENTREPRENEURIAL ACTIVITY IN SWITZERLAND

After this overview of non-entrepreneurial and entrepreneurial factors of the Swiss entrepreneurship ecosystem, the next step is to assess the entrepreneurial activity in Switzerland. Yet, there is an ongoing discussion with regards to which new ventures should be looked at in order to assess whether an entrepreneurial ecosystem is “productive” or “effective” and whether it yields the desired return from a macroeconomic perspective.

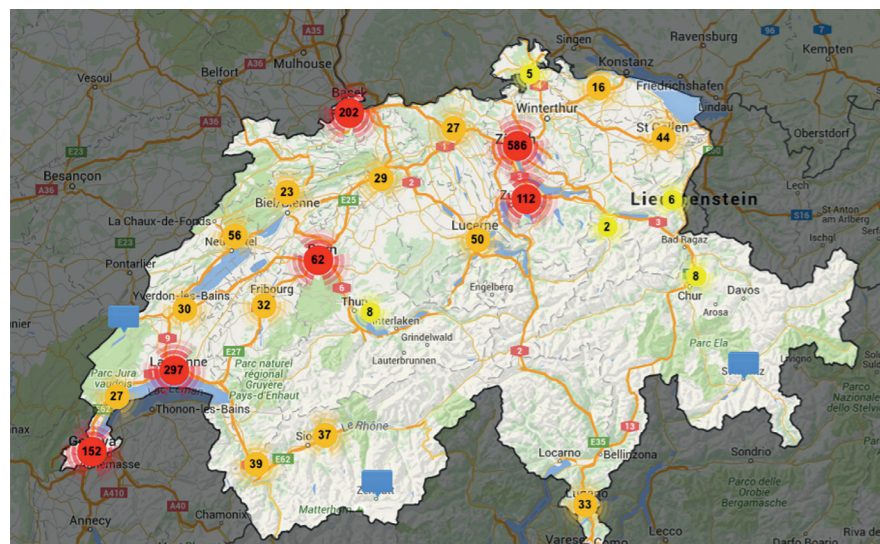


Figure 15: Swiss high-tech and high-growth entrepreneurship ecosystem (Source: Swiss Start-up Monitor, 2015).

As Vogel (2013) puts it, there are a variety of potentially useful key performance indicators (KPIs) to assess the effectiveness of an ecosystem, “including the number of newly created ventures within the ecosystem, the number of new high-growth ventures that have been created, a number of new ventures in a specific industry or segment, the number of jobs created by the new ventures, the number of unemployed that gained employment through the new ventures, aggregated taxes paid by all new ventures in the ecosystem, etc. There is no “one-size-fits-all” KPI, instead it needs to be matched with the stakeholders’ expectations and the vision of the ecosystem.”

It has been shown that it is useful to assess high-growth, scalable businesses, given that they are the key sources of innovation, productivity growth and employment (Blank, 2010; Hathaway, 2013; WEF, 2013). Differentiating between

start-ups with scalable business models and „other“ young businesses is an important distinction which publicly available data has neglected so far. The Swiss Start-up Monitor panel database aims to fill this gap. Although this database currently covers only a fraction of the Swiss start-up population, the database delivers a reliable reflection of the start-up landscape in Switzerland. To assess the Swiss entrepreneurial activity, this report leverages insights from the Swiss Start-up Monitor and refers to several frequently used proxy measures. The Swiss Start-up Monitor provides a real-time data collection of more than 1’500 high-tech and high-growth ventures. This database allows exploring the emergence of new high-tech and high-growth ventures, the assessment of Swiss entrepreneurship ecosystem and the impact of these ventures on the Swiss economy as a whole. The Start-up Monitor focuses on these companies because they have the

greatest impact on the national economy (GEM, 2012).

Figure 15 illustrates these companies across Switzerland with some regional hot spots highlighted. Zurich (32%) and Vaud (19%) are the most powerful cantons and include together more than 50% of the Start-up Monitor’s start-ups. Among the top five are also ranked Basel (9.7%), Geneva (8%) and Bern (5%). In addition, the database of the Swiss Startup Monitor generates some insights into the sectoral distribution of the Swiss high-tech and high-growth ventures. The most prevalent sectors of the Startup Monitor database are ICT (29.9%), Consulting & Services (12.3%), MedTech & Diagnostics (10.6%), Engineering (9.7%), Biotech & Pharma (8.4%), Consumer products (5.4%) and then various other industries with 5% or less.

Aggregating the regions into four main areas, namely the Greater Zurich Area (GZA), the Greater Basel Area (GBA), the Greater Geneva Bern Area (GGBA) and the St.Gallen Bodensee Area (SBA), there are several patterns discernible with regards to the distribution of the most important sectors (Figure 16). In the GZA and GGBA there is a particularly strong basis of ICT-bases companies (GZA: 33%, GGBA: 30%). This result is plausible, considering the fact that in these areas well-known companies from the IT sector have clustered within these regions. In these two areas engineering companies are highly represented as well, which can be traced back to the fact that the two leading Swiss technical institutes ETH Zurich and EPFL are located in these areas. The greater Basel Area has strong prevalence

of Biotech & Pharma (26%) and MedTech (14%) firms. This is not surprising, given that Northwest Switzerland is home to a unique life sciences cluster. In this area Consulting and Services (24%) also makes up a solid basis. The St.Gallen Bodensee Area displays a strong prevalence of ICT, Consulting & Services, and Consumer Products.

A variety of proxy measures have been employed to analyze entrepreneurial activity including self-employment rates, new venture creation and the relative share of output or employment accounted for by small firms (Audretsch & Thurik, 2000). Other studies have measured firm entry and exit or the birth and death of firms (Baldwin, 1995; Bailey et al. 1996). Efforts have also been made to measure the proportion of adults who intend to or have started their own business, or to gauge entrepreneurial attitudes and perceptions (Reynolds et al., 2000). These different proxy measures will be addressed in the following sections. It has to be mentioned that each measure can be used as a viable proxy to analyze entrepreneurial activity, but are not necessarily comparable with one another.

### Self-employment

A related measure of entrepreneurship activity is self-employment. Self-employment as a proportion of total employment is relatively low in Switzerland compared with other European countries. Figure 17 illustrates that Switzerland is in the mid-range of European countries with respect to the prevalence of self-employment (Eurostat, 2014).

The self-employment rate in Switzerland has not changed much over the past years: since 1991, the self-employment rate has been fluctuating between 8% and 11% of the total workforce, reaching a record level of 11% between 1997 and 2001 (FSO, 2014c).

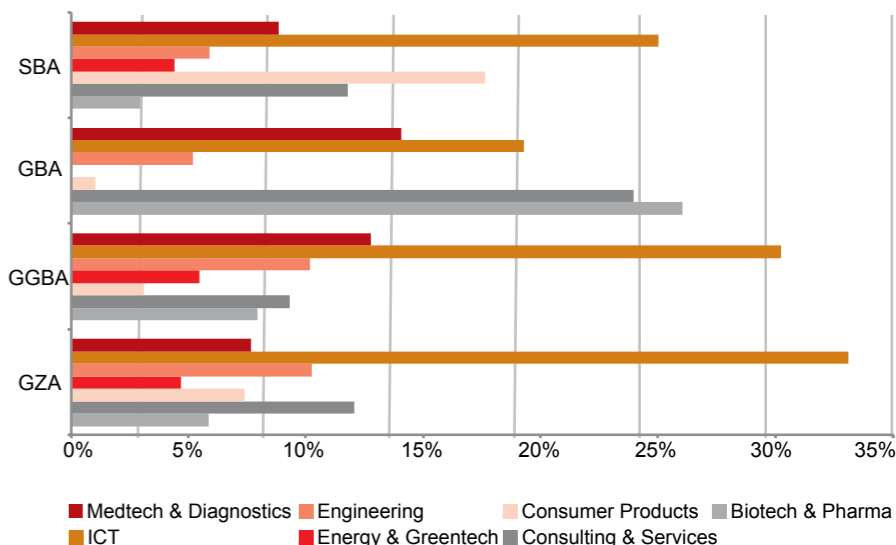


Figure 16: Industry distribution (top 7) of the four core regions (Source: Swiss Start-up Monitor, 2015).

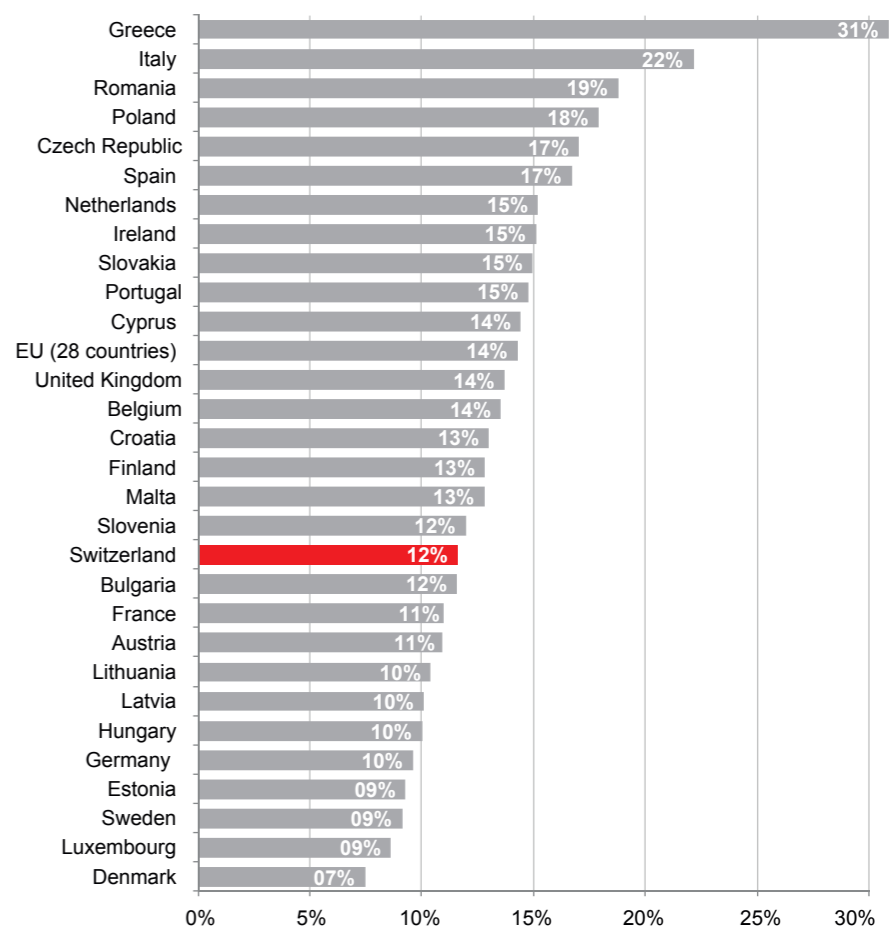


Figure 17: Self-employment rates, EU-28 countries, Q4 2014 (Source: Eurostat 2014, Base: Total employment).

# Entrepreneurial Activity in Switzerland

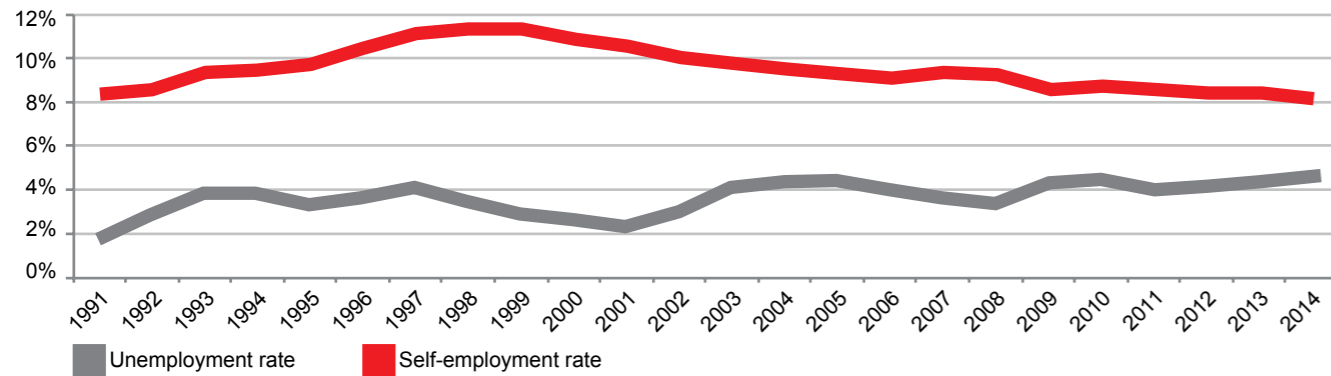


Figure 18: Self-employment and unemployment rates in Switzerland between 1991-2014 (Source: FSO, 2014c; Base: Total employment).

Figure 18 illustrates the self-employment rates in Switzerland as well as the general unemployment rate. During the early 1990s, unemployment rose due to poor economic conditions. As a consequence, many people fled into self-employment, peaking around 1999. It was also in 1996 that the Swiss government had launched a dedicated Active Labor Market Policy (ALMP) that helps unemployed transition to self-employment (Haas & Vogel, 2014), which further explains the rise in self-employment. Over the past 15 years, however, self-employment has become less prevalent as compared to other forms of activities, more specifically entrepreneurship.

## New venture creation

Another way to measure entrepreneurial activity is new venture creation. An important subset of new firms is young high-growth firms which are often referred to as “gazelles”. Gazelles are companies that are not older than five years, have ten or more employees at the beginning of the measuring period and that have an average annual turnover and employment growth rate of more than 20% for a prolonged period of time. These companies often account for less than one percent of all firms in countries all over the world, but contribute a much larger share to job creation and economic

growth. According to the study Entrepreneurship at a Glance (OECD, 2012) the share of gazelles in Switzerland holds a good position (Figure 19). With 0.5% of the population of Swiss firms, the country lies in the midfield with other OECD countries such as Denmark (0.5%) or Italy 0.4% and Sweden 0.4%.

However, there is certainly still room for improvement and the hope is that with improved growth-stage funding opportunities, more of these gazelle companies remain in Switzerland for the growth stage instead of moving to a more favorable ecosystem.

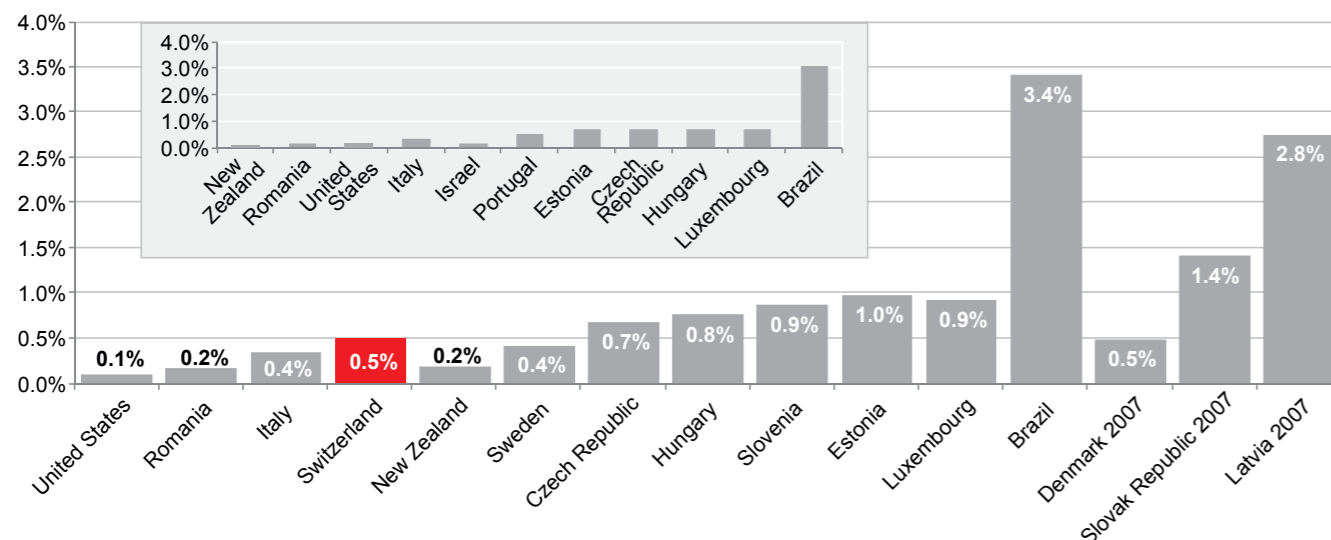


Figure 19: Share of gazelles, 2008 or latest available year (2009 in insert) measured by employment growth (Source: OECD, 2012).

## New firm entry and exit

New firm entry and exit is a common proxy to measure entrepreneurial activity. According to the Federal Statistical Office (FSO), 12'000 new firms have been created on average per year since 2001. Over the past decade, new firm creation (and registration) has remained at a constant level (2001-2013) with a record low in 2002 (10'260) and an all-time high in 2013 (12'400). New ventures account for 2% of the entire population of Swiss companies (FSO, 2013b). A similar pattern is observed regarding the number of commenced insolvency proceedings in Switzerland, which remained fairly stable on average at 7'900 per year over the period between 2010 and 2013 (FSO, 2013a). According to the Swiss Federal Statistics Office, of the 7919 commenced insolvency proceedings in 2013, 24% were due to organizational deficiencies whereas 76% were insolvency openings within the framework of the Federal Statute on Debt Enforcement and Bankruptcy (Figure 20). A closer look at the legal form of new ventures over the past 13 years shows that the sole proprietorship enterprises and the public limited company (AG) have been the most prominent legal forms

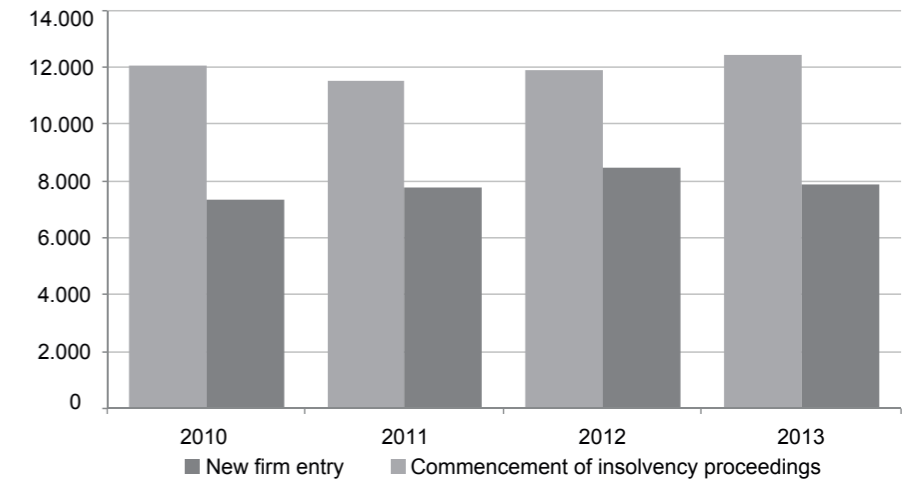


Figure 20: New firm entry contrasting commencement of insolvency proceedings in Switzerland (Source: FSO, 2013a and 2013b; based on firms registered in the commercial register).

in Switzerland followed by the limited liability company (GmbH) and partnership. Particularly noticeable is that the first half of this period was dominated by sole proprietorship enterprises, whereas limited liability companies have become more prevalent in the second half of this period (Figure 21) (FSO, 2013). The average survival rate of new firms has changed only marginally over the past years. On an international basis, Swiss firms have comparatively high survival rates. About 80% of new firms survive

the first year, with roughly 50% surviving five years or more (FSO, 2003-2007) (Figure 22).

## Entrepreneurial Intention and Total Entrepreneurial Activity

Surveys on entrepreneurial attitude are another approach to measuring entrepreneurship. Using the Global Entrepreneurship Monitor methodology of entrepreneurial intention, the data indicates that Switzerland ranks among the lowest among all countries that are tracked in the

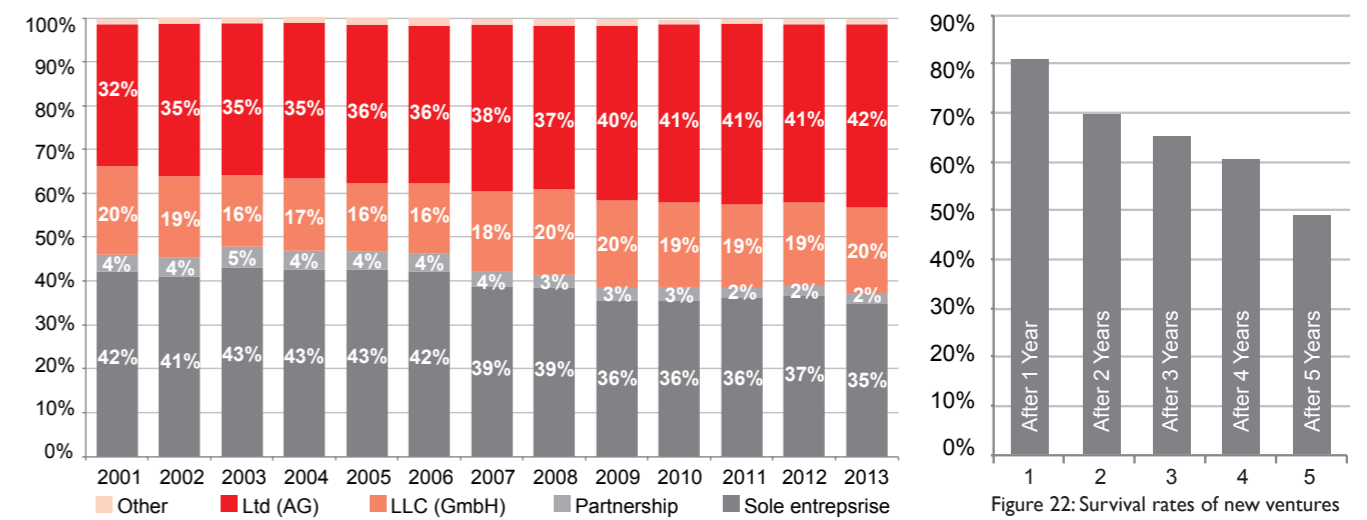


Figure 21: New venture entry by legal form in Switzerland (Source: FSO, 2013).

Figure 22: Survival rates of new ventures in Switzerland during the first five years of business (Source: FSO 2003-2007).

# Entrepreneurial Activity in Switzerland

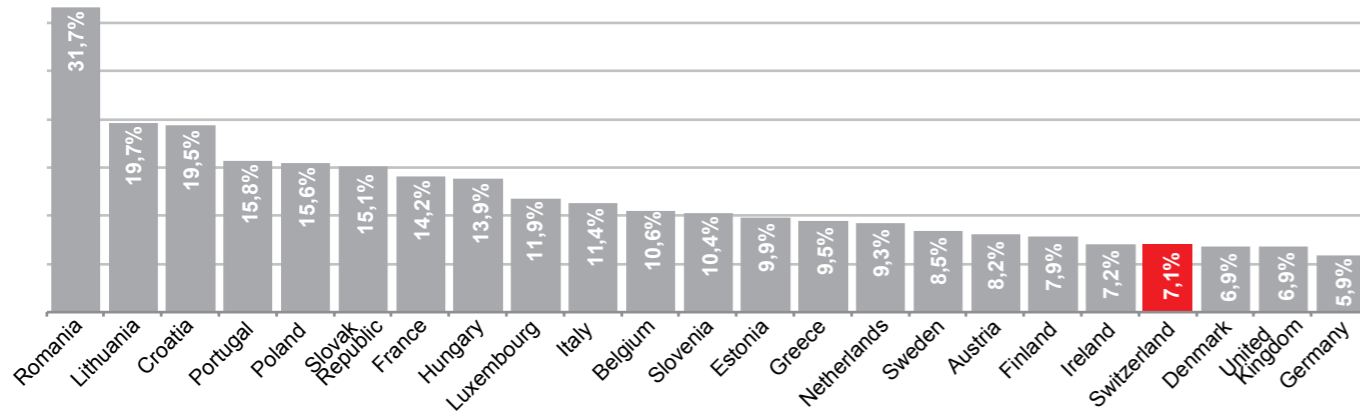


Figure 23: Entrepreneurial intention in Europe (Source: GEM, 2014).

Global Entrepreneurship Monitor (GEM, 2014) (Figure 23). With regards to the total entrepreneurship activity (TEA), the GEM data shows that Switzerland ranks in the mid-range of other European countries (TEA rate of 7.1%) (Figure 24).

One reason for the low entrepreneurial intention and activity are the comparatively high opportunity costs and the overall strong Swiss economy with a very low unemployment rate. These factors lead to a low rate of necessity entrepreneurship and as such also the desire of individuals to start their own business. Start-ups in Switzerland are founded because their founders see opportunities rather than because they see no other way of finding

employment. Interestingly, when comparing the entrepreneurship intention rate with the total entrepreneurship activity rate, data shows that the conversion rate of people which have the intention of starting a business to those who are entrepreneurially active is very high in Switzerland. That is, of the 7% of the adult population which have the intention of starting a business, almost all do so. In comparison, 14.2% of the French population have the intention to start a business but only 5.4% actually do so, resulting in a conversion rate of only 38% (GEM, 2014). The large intention-action gap in many countries other than Switzerland may partially be explained by ecosystem-related factors such as the ease of doing

business (World Bank Doing Business Ranking, 2015). While it is easy to start a company in Switzerland, this is not so much the case in other countries. If entrepreneurs lack the necessary resources or connections, they might end up never starting a company, despite their intentions (Table 4).

### Employment

Finally, the relative share of employment accounted for by small firms has become a valuable proxy to measure entrepreneurship activity. While older firms employ the majority of people in the workforce, new and young businesses are the primary sources of net new jobs (Hathaway, 2013). By definition, start-ups and other new

firms can only add jobs in their first year. Thus, the net job creation rate is fixed at around 100%. Beyond this direct effect of job creation, research has shown that there is a complex S-shaped effect that appears over time. Fritsch (2008: 72) states: "(...) employment in entry cohorts tends to be stagnant or decline from the second or the third year onward". As start-ups usually begin small in size, they tend to grow especially rapidly in the early years. In fact, they can grow so rapidly that sometimes job creation is robust enough to outshine the job destruction from the early-stage start-up failures. In contrast, non-start-up firms typically do not experience such a high growth rate (Hathaway, 2013). According to the Swiss Start-up Monitor database, Swiss start-ups create 3.8 jobs on average in their first year, which is almost twice the calculated gross job creation rate of new ventures listed in the Federal Statistical Office database (1.8 jobs).<sup>1</sup> This finding is in line with the results of the Kauffman Foundation Report (Hathaway, 2013), which suggests that start-ups tend to outpace the other new businesses in job creation.

Taking a deeper look at job creation of self-employed workers, in Switzerland, nearly 50% of self-employed workers have one or more employees (employer

STARTING A BUSINESS IN	Procedure (numbers)	Time (days)	Cost (% of income per capita)	Paid-in min. capital
OECD	4.8	9.2	3.4	8.8
Switzerland	6.0	10	2.0	25.4
Germany	9.0	14.5	8.8	35.8
Sweden	3.0	16	0.5	12.8
Belgium	3.0	4.0	5.0	18.2
Denmark	4.0	5.5	0.2	14.5
Finland	3.0	14	1.1	7.0
Luxembourg	6.0	18.5	2.0	22.5
Chile	7.0	5.5	0.7	0.0
Belgium	3.0	4.0	5.0	18.2
Italy	5.0	5.0	14.1	0.0
France	5.0	4.5	0.9	0.0

Table 4: Comparison of Switzerland and selected OECD countries on several dimensions for setting up a business (Source: World Bank Group, 2015).

firms) (Figure 25). This is the highest rate together with Hungary in Europe and almost twice the average of all European countries. In UK, by contrast, only 17% of self-employed workers employ other workers. The variation on the percentage of self-employed workers with employees can partially be explained due to different

type of self-employment firms. It is clear, that an entrepreneur setting up a small business is likely to hire more employees than for example a freelancer.

However, the employer enterprise birth rate i.e. the number of births of employer enterprises as a percentage of the popu-

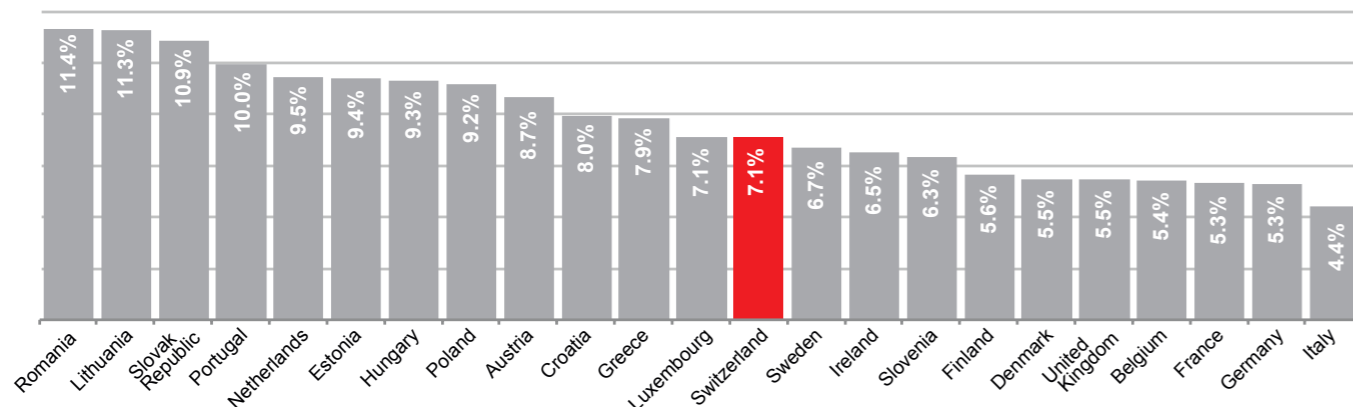


Figure 24: Total early-stage entrepreneurial activity (TEA) in Europe (Source: GEM, 2014).

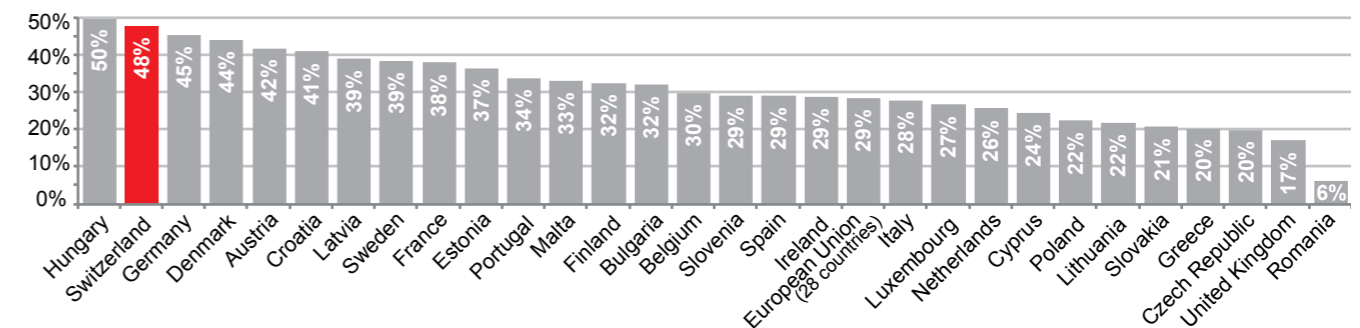


Figure 25: Percentage of self-employed workers with employees, Q4 2014; Base: Total self-employment (Source: Eurostat, 2014).

<sup>1</sup> This comparatively high value of new job creation is a result of the selection effect for the Swiss Start-up Monitor, where only innovation-based companies are portrayed. The criteria include: (1) patent-based, (2) university spin-off, (3) part of a key entrepreneurship support program such as CTI Coaching, or (4) having raised risk capital.

lation of active enterprises with at least one employee is very low in Switzerland (6.7%) (Figure 26). Almost all OECD countries have higher rates, e.g. Sweden (9.6%), U.S. (7.3%) or Italy (10.0%). Employer enterprises are considered to be more relevant economically than non-employer firms and more closely related to the notion of entrepreneurship as a driver of job creation and innovation (OECD, 2012).

These findings are confirmed by the Global Entrepreneurship Monitor. Only 5% of Swiss companies considered in the 6.4% of the total entrepreneurial activity expect to increase their personnel by more than 20 employees (GEM, 2011). In contrast, in countries such as the United States and Singapore are characterized by a high percentage of high-growth expectations, 24% and 23%, respectively. The GEM report (2011) emphasizes that even if entrepreneurs with high-growth

potential generally tend to overestimate the number of jobs they expect to generate, the impact of their businesses on the actual creation of these jobs will still probably be substantial.

This section has illustrated the regional hot-spots of high-tech and high-growth start-ups in Switzerland. In addition, several proxy measures for Swiss entrepreneurial activity have been assessed. In terms of self-employment and new venture creation Switzerland ranks in the lower middle range compared to other European and OECD countries. Another picture emerges when considering the intention to start a business and the Total Entrepreneurship Activity, which both ranges among the lowest in the world. But it is noteworthy that compared to other countries, the conversion rate of people with the intention of starting a business to those who actually start a busi-

ness is among the highest in the world. Finally, the relative share of employment accounted by small firms is located in the upper range. It becomes clearly visible that the result of the assessment of entrepreneurship activity depends strongly on which proxy measure is used. All in all, entrepreneurship activities in Switzerland tend to be in the global mid-range. While there are signs of substantial activities and more and more high-impact start-ups being created in Switzerland, there is still significant room for improvement. If Switzerland is to appear in the top of one of the global ecosystem rankings (e.g., Startup Genome Project), there is still significant work to be done by all ecosystem players. However, because the promotion of entrepreneurship is a difficult and multi-faceted issue, it requires the orchestrated and coordinated effort of all involved stakeholders.

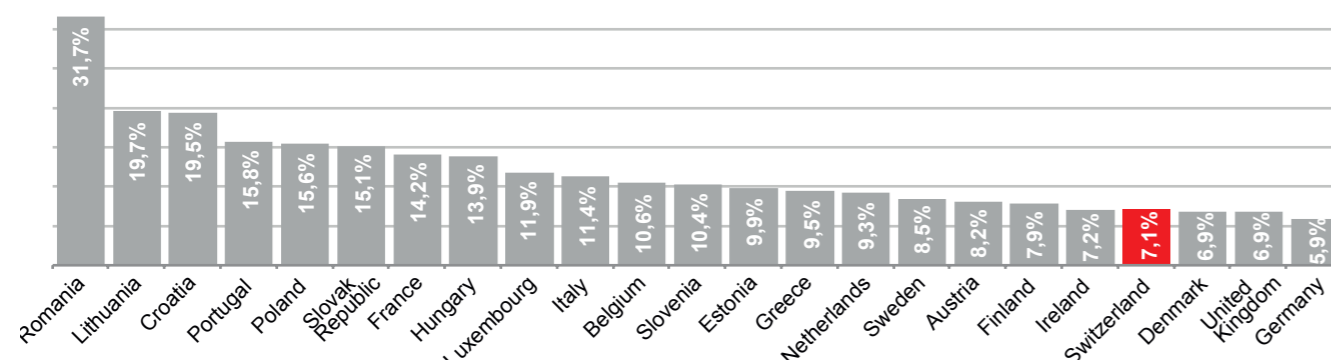


Figure 26: Employer enterprise birth rate 2008, total economy (Source: OECD, 2012).

## SUMMARY

Switzerland is one of the world's most innovative countries. An excellent education system, leading research institutions, high private investments in research and development, and close cooperation between companies, academia and politics ensure that knowledge and know-how can be translated into profitable innovations. But despite these favorable conditions,

Swiss entrepreneurship activity is not at the desired level. There is still much to do in order to turn Switzerland into a globally recognized Start-up Nation with regards to the commercialization of the technological innovations and to build globally scalable high-growth ventures. Promoting and stimulating entrepreneurship is a difficult and challenging issue,

given that there is no best practice to foster the successful establishment of a company. It is rather necessary to understand the underlying conditions that entrepreneurs face in particular countries, regions or industries in order to establish a functioning entrepreneurship ecosystem. An entrepreneurship ecosystem constitutes of a variety of interrelated actors and fac-

tors, with the entrepreneur at the center. Hence, the individual's decision to become an entrepreneur depends on a variety of factors ranging from economic over political to socio-cultural issues. The previous sections of this report have shown that in general the Swiss entrepreneurship ecosystem is flourishing. There are numerous good reasons to start a business in Switzerland: a liberal economic system, political stability, innovation, close links with foreign markets, excellent education and healthcare systems, an outstanding infrastructure, a high standard of living, and a competitive tax system. While the non-entrepreneurial factors are highly

favorable, there is room for improvement regarding entrepreneurship-specific factors. So what can Switzerland do in order to become a Start-up Nation?

First, due to the lack of growth-stage funding many start-ups leave Switzerland at this stage to countries with more favorable conditions. As a consequence, Switzerland needs to ensure funding opportunities not only for seed-stage, but also for the start-up and growth-stages of a venture. Second, there is a strong need to strengthen a supportive entrepreneurial culture among young people in order to consider entrepreneurship as a desirable,

feasible and viable career opportunity, to encourage risk taking, and to get people off again after failure. Third, more entrepreneurship educations on primary and secondary level and a greater focus to equip youngsters with the skills required are warranted. This measure would help address youth unemployment challenge. Finally, there is a strong need to focus on ageing workforces, increasing entrepreneurial intentions in order to prolong working lives and reduce older-age unemployment. Through these measures, Switzerland has the possibility to preserve and enlarge the talent pool, and address the looming pension crisis (Geiger, 2012).

## WHAT IS NEXT?

There are several initiatives in the coming years at infrastructure, research and venture financing level which will have a substantial impact on the development of the Swiss entrepreneurship ecosystem. Starting in 2016, a new innovation park is planned to be built in Dübendorf. Swiss Innovation Park is a concept of the federal government, cantons, science and economy which fully exploit the innovation potential of Switzerland in the international competition among location. The concept combines the best conditions for industrial research with high receptivity of companies willing to settle in the region. The concept is a long-term model for the successful development of Switzerland as a knowledge-based, globally competitive economy. As such the regions become more attractive for investment in research and create directly and indirectly jobs.

Another initiative is Digital Zurich 2025 which aims to make the greater Zurich area to the leading European center for

digital innovation. This will be achieved by bringing together the expertise and potential from a number of sources such as for example the ETH Zurich, the university and other institutions of higher education in the city, other experts in their field and a number of companies involved in information and communication technology. Digital Zurich 2025 plans an annual congress and a Swiss Investor Summit, selected Swiss start-up companies could meet up with international investors and business leaders.

Balgrist campus is an institution with the goal to advance research into the musculoskeletal system to enable innovative discovery in the interests of patients. To achieve this, Balgrist Campus is establishing a research and development center for musculoskeletal medicine located between the lake of Zurich and Balgrist University Hospital. Balgrist Campus is funded privately and a contribution from the lottery fund of the Canton of Zurich. The research and development

center has opened its doors in November 2015. It offers the unique opportunity to benefit from the close proximity of patients, practicing physicians, researchers and engineers, as well as the direct relationship with the university and the ETH in Zurich.

The initiative Swiss Investment Fund (SIF) of the Swiss Private Equity & Corporate Finance Association gives institutional investors the opportunity to invest in young high-tech companies. The SIF worth 500 million francs and is to be positioned as a so-called "fund of funds". This means that rather than investing directly in start-up companies, it invests in 15 to 20 smaller funds that, in turn, can then provide equity capital for 200 to 300 young Swiss high-tech firms. The investments will be done in private companies only and in a diverse set of sectors and stages (Swiss Venture Guide 2013).



## ABOUT THE SWISS START-UP MONITOR FOUNDATION

### Organization

The Swiss Start-up Monitor was conceived in 2012 as a joint research initiative between the University of St.Gallen, University of Basel and ETH Zurich and financially supported by the Commission of Technology and Innovation, Gebert Rüt and AVINA foundation with the aim to map, monitor and help develop start-up ecosystems in Switzerland and beyond.

Three years after the initiation, the Swiss Start-up Monitor has officially trans-

formed into a non-profit Swiss based foundation thanks to the support of the University of St.Gallen, University of Basel, ETH Zurich and the Commission of Technology and Innovation.

To turn the initiative into a foundation is a necessary step towards a neutral, independent and sustainable organization. The foundation board is chaired by Dietmar Grichnik (University of St.Gallen, president), Silvio Bonaccio (ETH Zurich),

Pascal Gantenbein (University of Basel), Alexander Ilic (Dacuda) and Pascale Vonmont (Gebert Rüt Stiftung). On behalf of the foundation board, Peter Vogel (University of St.Gallen) manages the foundation's ongoing activities supported by the operational members Barbara Burkhard and Konstanze Krüger. The foundation board members are all involved in the Swiss start-up scene and bring a vast range of knowledge and experience to the role of governing the foundation.

### THE FOUNDATION BOARD



**Dietmar Grichnik**  
President  
Professor of Entrepreneurship at University of St.Gallen



**Peter Vogel**  
Managing Director  
Assistant Professor for Technology Ventures at the Institute of Technology Management



**Alexander Ilic**  
Voting Member  
CTO of Dacuda AG, Represents the interest of Start-ups



**Silvio Bonaccio**  
Voting Member  
Head of ETH transfer



**Pascale Vonmont**  
Non-Voting Member  
Director of the Gebert Rüt Stiftung



**Pascal Gantenbein**  
Voting Member  
Professor of Financial Management and Head of the Department of Financial Management



**Vital Meyer**  
Observer  
Head of Division / Start-up CTI



**Barbara Burkhard**  
Project Support  
Research Associate at the Institute of Technology Management



**Konstanze Krüger**  
Project Support  
Research Associate at the Institute of Technology Management

### Mission/Objective/Goal/Vision & Values

The Swiss Start-up Monitor's mission is to contribute to the development of Switzerland's entrepreneurship ecosystem. To achieve this, the Swiss Start-up Monitor seeks to raise awareness and to increase knowledge about entrepreneurship ecosystem by building up a valid and reliable real-time database on nationally representative samples of Swiss start-ups in order to conduct primary research.

### The three main objectives of the Swiss Start-up Monitor are the following:

1. To map and measure components of the entrepreneurship ecosystem.
2. To identify key success factors of Swiss start-ups and factors leading to a higher level of entrepreneurship.
3. To suggest measures that may support/enhance the national level of entrepreneurship in Switzerland.

The Swiss Start-up Monitor is the largest ongoing data collection of entrepreneurship in Switzerland. Through the executed data collection effort, the Swiss Start-up Monitor is able to provide high quality information, comprehensive reports and

interesting stories, which greatly enhance the scientific understanding of the entrepreneurial ecosystem in Switzerland. The Start-up Monitor's vision is to become the leading database for capturing and monitoring the start-up ecosystem in Switzerland and beyond. Maintaining data confidentiality is the Start-up Monitor's primary value. Data security is of highest priority and is guaranteed at all times. Data is only published anonymously and on aggregated level without reference to an individual company's name.

### What does the Swiss Start-up Monitor measure?

The Swiss Start-up Monitor captures several measures on individual and organizational level derived from established literature and well-known international surveys. The resultant data provides an insight into the entrepreneurial ecosystem of Switzerland. It provides the following quantitative measures (Table 5).

### How does the Swiss Start-up Monitor collect data?

The data collection is composed of two complementary tools: self-reported data and surveys. A web-based system that

enables start-ups to register and enter their data into an online platform, administer the data's visibility, and control the dissemination of their data to different groups of stakeholders has been specifically developed. This web-based system allows collecting data through self-report, which tracks all the descriptive and performance data of a single start-up. By entering all the details, start-ups provide the Swiss Start-up Monitor with data necessary for achieving the objective of the foundation. In return, the Swiss Start-up Monitor offers registered users a variety of benefits. In order to keep the database current and accurate the Swiss Start-up Monitor conduct regularly telephone-based or web-based surveys.

### Description of the platform

The Swiss Start-up Monitor is Switzerland's foremost community platform for the start-up scene that matches stakeholders within the Swiss entrepreneurship ecosystem and provides registered users with a variety of benefits. The Swiss Start-up Monitor consists of two parts, the Swiss Start-up directory and a private online community for members. The Swiss Start-up directory allows visitors to get an overview of the Swiss start-up landscape and shows the geographical distribution of Swiss start-ups on a map. The map contains contact information and descriptive characteristics of a start-up filled by the firms themselves or collected by the project team. Within the private section of the site, start-ups are asked to enter information about their start-up such as founding team members (education, position, age, etc.), awards, company development data and much more. In addition, the platform provides an overview of different stakeholder groups, e.g. prize and label-granting institutions, guarantees, loans, coaching organizations, R&D-funding organizations, and incubators. The private section offers utilities for

QUANTITATIVE MEASURES OF THE SWISS START-UP MONITOR	
Descriptive characteristics	Founding year, canton and city, industry, university / firm affiliation, legal form, development stage
Entrepreneur / Entrepreneurial team	Number of founders, year of birth, nationality, position, education, education field
Visibility	Awards, label
Innovation	Patents
Company development	Team development, revenue growth
Venture financing	Formal- and informal investors, amount of investment, financing round, investment status
Connection	Network

Table 5: Quantitative measures of the Swiss Start-up Monitor.

# About the Swiss Start-up Monitor Foundation

registered start-ups such as, financial and benchmarking tools, knowledge exchange and community collaboration tools (Table 6). Not only start-ups can register on the platform, but also stakeholders. Investors have for example the possibility to present their company profile and make public announcements. Additionally, investors are able to search for start-ups and track investment opportunities with a deal-flow management tool. The SSM has strict eligibility criteria. Companies must comply with the following criteria: Entry in the commercial register (or have the goal to register in the next couple of months), innovative and/or technology based business, and not older than five years after entry in commercial register and at least one of the following supplementary criteria: University spin-off, raised capital, part of a start-up support program (e.g. CTI-Start-up, Startfeld), nominee or winner of a start-up award/prize (e.g. de Vigier, Venture Kick), filed or pending patent. Registration cannot be submitted without entering all the required information. To ensure that all registrations meet the criteria, they are validated by the SSM team.

## Why the Swiss Start-up Monitor is unique?

**1. The Swiss Start-up Monitor is able to collect data on entrepreneurship which official statistics do not capture.**

Official statistics focus on new firm foundation or self-employment, but a vast majority of these firms do not have scalable business models (Blank, 2010). Differentiating between start-ups with scalable business models and „other“ young businesses is an important, but has been neglected so far by publicly available data.

**2. The Swiss Start-up Monitor collects primary data on entrepreneurship which distinguishes them from other indices.**

Secondary data is frequently used as the only source of data for measuring components of entrepreneurship ecosystem. However, since this data has been collected by someone else or for another purpose, there is a lack of control over data quality and data may not fit the main objectives of the study. Therefore, primary data is indispensable to get a reliable picture of the Swiss entrepreneurship ecosystem.

**3. The Swiss Start-up Monitor collects panel data.**

The longitudinal database can track the changes in entrepreneurship components and enables stronger claims about causality than analysis of cross-sectional data.

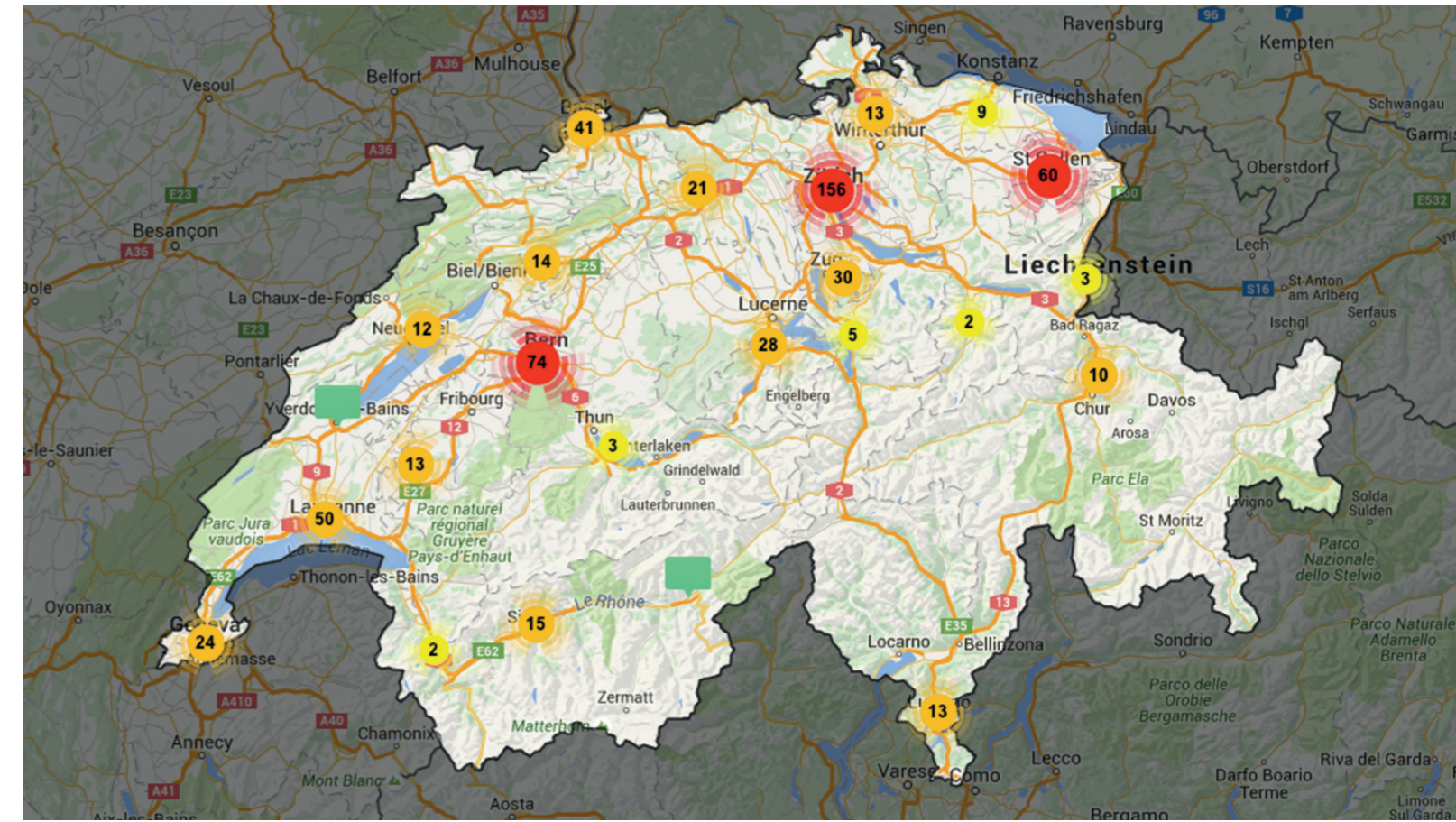
**4. The Swiss Start-up Monitor focuses on the entrepreneurship ecosystem which is the first of its kind in the country.**

There have been several research efforts on entrepreneurship in Switzerland, but research on ecosystems has been largely neglected so far. The Swiss Start-up Monitor is the first which focuses on entrepreneurship ecosystem in Switzerland.

**5. The data base of the Swiss Start-up Monitor allows for cross-country comparison and creates international benchmarking.**

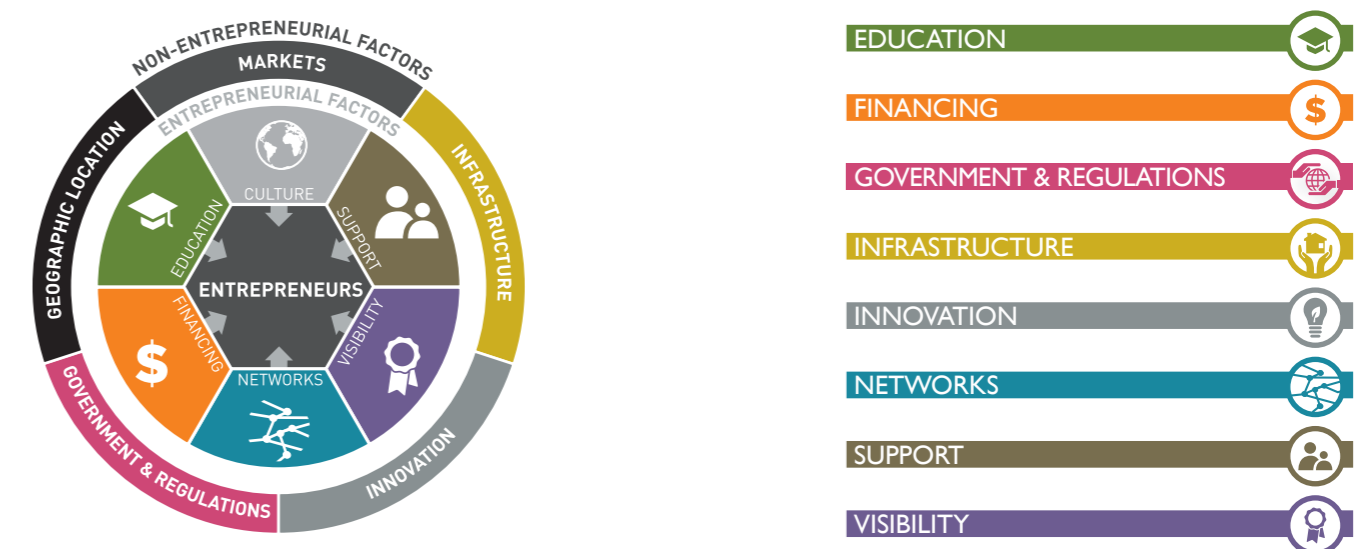
The Start-up Monitor uses variables which are common in international research, so that cross-country comparison will be possible.

## START-UP ORGANIZATIONS AND INITIATIVES



DETAILED OVERVIEW OVER THE UTILITIES	
Personal Profile	Short presentation of the own company which is visible to different groups of stakeholders.
Activity Feed	Overview of all platform activities, deadlines for business plan competitions, event dates, and new blog articles.
Job Board	A job-offering area, where registered users post their job opportunities for free. The job offerings are not only visible for community members, but also for all interested internet users visiting the Swiss Start-up Monitor's public homepage.
Operations Board	Intuitive financial and reporting tool to track the own performance.
Documents	Knowledge exchange tool to share templates such as labor contracts, financial planning templates, business planning templates etc. with other start-ups.
Mailing List	The Founder's Mailing List is the central place for questions, feature requests, success stories and anything regarding the Swiss Start-up Scene. The list is moderated and only open to members of the Swiss Start-up community.
Benchmarking	A tool where start-ups can compare themselves with a self-defined peer group.

Table 6: Detailed overview over the Start-up Monitor utilities.



## BERN AREA

### EDUCATION

Akad Business, Bern  
www.akad.ch/business

CTI Entrepreneurship, Bern  
www.cti-entrepreneurship.ch

Fachhochschulen, Bern  
www.fachhochschulen.net

University of Bern Department of Management and Entrepreneurship, Bern  
www.management.imu.unibe.ch

### FINANCING

Berner Kantonalbank, Bern  
www.bekb.ch

BV Partners AG, Bern  
www.bvpartners.ch

Finanzhilfe für unternehmensinterne Projekte «Mann + Frau. Ein Gewinn für Unternehmen», Bern  
www.mann-und-frau.ch

Hasler Stiftung, Bern  
www.haslerstiftung.ch/de/home

STI Stiftung für technologische Innovation, Biel  
www.sti-stiftung.ch

### GOVERNMENT & REGULATIONS

Bern – Wirtschaftsförderung, Bern  
www.berneinvest.com

economiesuisse, Bern  
www.economiesuisse.ch

### INFRASTRUCTURE

DufourWest, Biel  
www.dufourwest.ch

Fri Up, Gründerzentrum Nord, Murten (BE)  
www.friup.ch

SBB AG, Bern  
www.sbb.ch

SwissParks – Verband der Technologie- und Gründungszentren, Bern  
www.swissparks.ch

Technologiepark, St-Imier (BE)  
www.st-imier.ch

### INNOVATION

Competence Center for Medical Technology, Bern  
www.ccmtech.ch

Schweizerische Vereinigung für Technologietransfer swiTT, Bern  
www.switt.ch

Unitetra  
www.unitetra.ch

### NETWORKS

Design Net, Langenthal (BE)  
www.designnet.ch

donna informatica, Bern  
www.donnainformatica.s-i.ch

ecub, Bern  
www.ecub.ch

Efficiency-Clubs, Bern  
www.ency-berne.ch



Efficiency-Clubs, Biel  
www.ency-berne.ch

f-i-t – Frauen im Tourismus, Bern  
www.f-i-t.ch

KMU Frauen Schweiz, Bern  
www.kmufrauen-schweiz.ch

Schweizerischer Gewerbeverband, Bern  
www.sgv-usam.ch

Swiss Venture Clubs (SVC), Belp (BE)  
www.swiss-venture-club.ch

Zonta, Bern  
www.zonta.ch



### SUPPORT

Base Camp 4 High Tech, Bern  
www.basecamp4hightech.ch

Basecamp Bern, Interlaken (BE)  
www.basecamp.ch

Bürgerschaftsgenossenschaft Mitte, Burgdorf (BE)  
www.bgm-ccc.ch

Consulting Cluster, Bern  
www.consultingcluster.ch

Creative Hub, Bern  
www.creativehub.ch

CTI Startup, Bern  
www.ctistartup.ch

Eidg. Büro für die Gleichstellung von Frau und Mann, Bern  
www.ebg.admin.ch

Energie-Cluster, Bern  
www.energie-cluster.ch

Forschungsportal, Bern  
www.forschungsportal.ch

Fri Up, Gründerzentrum Nord, Murten (BE)  
www.friup.ch

Hasler Stiftung, Bern  
www.haslerstiftung.ch

innoBE, Bern  
www.innoBE.ch

KMU Admin, Bern  
www.KMU.admin.ch

Medical Cluster, Bern  
www.medical-cluster.ch

Präzisionscluster, Biel  
www.praezisionscluster.ch

Stiftung KMU Next, Bern  
www.kmunext.ch

Stiftung KMU Schweiz, Bern  
www.stiftung-kmu.ch

STI Stiftung für technologische Innovation, Biel  
www.sti-stiftung.ch

swissnex, Bern  
www.swissnex.org

Treuhand Suisse, Bern  
www.treuhand-suisse.ch

### VISIBILITY

Berner Business Creation Wettbewerb, Bern  
www.bbcw.ch

Blickpunkt:KMU, Biel  
www.blickpunkt-kmu.ch

Burgdorfer Innopreis, Burgdorf (BE)  
www.burgdorf.ch

CTI Medtech Award, Bern  
www.ctistartup.ch

CTI Start-up Label, Bern  
www.ctistartup.ch

ENTERPRIZE, Zollikofen (BE)  
www.enterprize.ch

Swisscom App of the Year Award, Worblaufen (BE)  
www.swisscom.ch

Swisscom Business Award, Worblaufen (BE)  
www.swisscom.ch

Swiss Economic Award, Gwatt (BE)  
www.swisseeconomic.ch

Swiss Logistics Award, Bern  
www.tinyurl.com/Swiss-Logistics-Award

Swissparks.ch - Start-up of the year awards, Bern  
www.swissparks.ch

Swiss Technology Award, Gwatt (BE)  
www.en.swiss-innovation.com/award

Swiss Tourism Federation Milestone, Bern  
www.htr-milestone.ch

SVC Unternehmerpreis, Belp (BE)  
www.tinyurl.com/SVC-Unternehmerpreis

WOCOMOCO Award, Bern  
www.wocomoco.ch

XAVER.12 the swiss live communication award, Bern  
www.xaver-award.ch

Ypsomed Innovation Award, Burgdorf (BE)  
www.innovationsfonds.ch

## NORTHWESTERN SWITZERLAND

### EDUCATION

Akad Business, Basel  
www.akad.ch/business

BWL – Betriebswirtschaftliches Institut und Seminar Basel AG, Basel  
www.bwl-institut.ch

start-net, Birrwil (AG)  
www.start-net.ch

upStart der FHNW, Olten  
upstart.swiss-challenge.org

### FINANCING

Aargauische Kantonalbank, Aarau  
www.akb.ch

ABB Switzerland AG, Baden (AG)  
www.abb.com/ventures

BiomedInvest, Basel  
www.biomedvc.com

BioMedPartners AG, Basel  
www.biomedvc.com

De Vigier Stiftung, Solothurn  
www.devigier.ch

EVA – The Basel life sciences, Basel  
www.eva-basel.ch

Innovationsfonds der Alternativen  
Bank Schweiz ABS, Olten  
www.tinyurl.com/Innovationsfonds

Mericom AG, Basel  
www.mericom.ch

Novartis Venture Fund, Basel  
www.nvfund.com

## GOVERNMENT & REGULATIONS

Aargau – Standortförderung, Aarau  
www.tinyurl.com/ag-Standortfoerderung

BaselArea – Standortförderung, Basel  
www.baselarea.ch

Basel Stadt – Wirtschaftsförderung, Basel  
www.awa.bs.ch

Jura - Promotion Economique, Delémont  
www.eco.jura.ch

Solothurn – Standortförderung,  
Solothurn  
www.standortsolothurn.ch

## INFRASTRUCTURE

Business Park Laufental & Thierstein,  
Zwingen (BL)  
www.bplt.ch

business parc, Reinach (BL)  
www.businessparc.ch

coworkingBasel (Startup-Academy), Basel  
www.coworkingbasel.ch

Creapole SA, Delémont  
www.creapole.ch

Plug & Start, Olten  
www.learningarea.ch

Technologiepark Basel, Basel  
www.technologiepark-basel.ch

Technopark® Aargau, Brugg (AG)  
www.technopark-aargau.ch

Tenum AG, Liestal (BL)  
www.tenum.ch

TZW Technologie Zentrum Witterswil,  
Witterswil (SO)  
www.tzw-witterswil.ch

## INNOVATION

Clariant International Ltd., Muttenz (BL)  
www.clariant.com

Energie Gipfel, Aarau  
www.energie-gipfel.ch

Paul Scherrer Institut, Villigen (AG)  
www.psi.ch/industry

Straumann Holding AG, Basel  
www.straumann.ch

Technologietransfer FITT, Windisch (AG)  
www.fhnw.ch

Unitectra, Basel  
www.unitectra.ch

## NETWORKS

BiotechNet, Basel  
www.biotechnet.ch

Adlatus, Olten  
www.adlatus.ch

Ecademy, Basel  
www.ecademy.ch

Efficiency-Clubs, Basel  
www.encyclopedia-club.ch

Femdat, Aarau  
www.femdat.ch

Nationales Kompetenznetzwerk  
Gebäudetechnik und Erneuerbare  
Energien, Langenbruck (BL)  
www.brenet.ch

NEFU, Basel  
www.nefu.ch

SVA – Schweizerischer Verband der  
Akademikerinnen, Basel  
www.akademikerinnen.ch

Swonet – Swiss Women Network,  
Aarau  
www.swonet.ch

## SUPPORT

Basel Inkubator - Startup-Center der  
University Basel & FHNW, Basel  
www.basel-inkubator.ch

Bürgerschaftsgenossenschaft beider Basel  
www.btg.ch

Bürgerschaftsgenossenschaft Saffa, Basel  
www.saffa.ch

Cleantech Aargau, Aarau  
www.cleantech-aargau.ch

De Vigier Stiftung, Solothurn  
www.devigier.ch

EVA – The Basel life sciences, Basel  
www.eva-basel.ch

femdat, Aarau  
www.femdat.ch

FITEC, Delémont  
www.fitec.ch

Gebert Rüf Stiftung, Basel  
www.grstiftung.ch

Gründungszentrum Crescenda für  
Migrantinnen mit Wohnsitz in  
der Nordwestschweiz, Basel  
www.crescenda.ch

GründerZentrum Solothurn, Solothurn  
www.gzs.ch

i-net innovation networks switzerland,  
Basel  
www.inet-innovation.ch

Innovation Network Switzerland, Basel  
www.inet-basel.ch

KMU Swiss Event, Baden (AG)  
www.kmuswiss.ch

National Instruments Switzerland,  
Ennetbaden (AG)  
www.ni.com

Net Notar, Feldbrunnen-St.Niklaus (SO)  
www.netnotar.ch

startup Academy, Basel  
www.startup-academy.ch

Swiss Nanoscience Institute, Basel  
www.nanoscience.ch

Swonet – Swiss Women Network, Aarau  
www.swonet.ch

## VISIBILITY

Aargauer Unternehmerpreis, Aarau  
www.tinyurl.com/Unternehmenspreis

Best Paper Award, Ennetbaden (AG)  
www.tinyurl.com/NIDays-2016

De Vigier Preis, Solothurn  
www.devigier.ch

Jungunternehmerpreis  
Nordwestschweiz, Basel  
www.jungunternehmerpreis.ch

Life Sciences Prize, Basel  
www.lifesciencesprize.ch

InnoPrix SoBa, Solothurn  
www.baloise.ch

Prix Jura, Delémont  
www.jura.ch

Solothurner Unternehmenspreis,  
Solothurn  
www.unternehmerpreis.ch

Umweltpreis der Schweiz, Basel  
www.umweltpreis.ch

## ZÜRICH/EASTERN SWITZERLAND

### EDUCATION

Akad Business, Zürich  
www.akad.ch/business

Business Tools Zürich, Zürich  
www.btools.ch

EB Zürich, Zürich  
www.eb-zuerich.ch

ESW start-up, Wetzikon (ZH)  
www.esw.ch

ETHZ Chair for Entrepreneurship,  
Zürich  
www.entrepreneurship.ethz.ch

Henri B. Meier Unternehmerschule,  
St. Gallen  
www.unternehmerschule.unisg.ch

HSG Chair for Entrepreneurship, St. Gallen  
www.item.unisg.ch/de/divisions/en-  
trepreneurship

IFJ Institut für Jungunternehmen,  
St. Gallen  
www.ifj.ch

Lifescience Zürich, Zürich  
www.lifescience-zurich.ch

SIFE - HTW Chur Institut für  
Entrepreneurship, Chur  
www.sife.ch

SIU – Schweizerisches Institut für  
Unternehmensschulung, Zürich  
www.siu.ch

Swiss School for International Business,  
Zürich  
www.ssib.ch

Technopark® Academy, Zürich  
www.tp-academy.ch

Universität St. Gallen, Institut für KMU,  
St. Gallen  
www.kmu.unisg.ch

UZH Chair for Entrepreneurship, Zürich  
www.business.uzh.ch/professorships/  
entrepreneurship\_en.html

Venture Lab, St. Gallen  
www.venturelab.ch

Young Enterprise Switzerland YES!,  
Zürich  
www.young-enterprise.ch

## FINANCING

100-days, Zürich  
www.100-days.net

3wVentures / Latour & Zuberbühler  
GmbH, Herisau (AR)  
www.3wventures.com

Aravis, Zürich  
www.aravis.ch

aventic partners AG, Zürich  
www.aventicpartners.ch

BLR & Partners AG, Thalwil (ZH)  
www.blrpartners.com

Brains to Ventures, St. Gallen  
www.b-to-v.com

Business Angels Schweiz (BAS), Zürich  
www.businessangels.ch

C-Crowd, Zürich  
www.c-crowd.com

Club Deal AG, St. Gallen  
www.cd-ag.com

Creathor Venture, Zürich  
www.creathor.de

CTI Invest, Zürich  
www.cti-invest.ch

Emerald Technology Ventures, Zürich  
www.emerald-ventures.com

ETH Pioneer Fellowship, Zürich  
www.tinyurl.com/Pioneer-Fellowship

EuroUS Ventures, Zürich  
www.eurousventures.com

Finanzplatz Zürich, Zürich  
www.finanzplatz-zuerich.ch

Go Beyond, Zürich  
www.go-beyond.biz

GO! Ziel selbstständig, Zürich  
www.mikrokredite.ch

Investiere.ch (launched by Verve Capital  
Partners), Zürich  
www.investiere.ch

MSM Investorenvereinigung,  
Winterthur  
www.tinyurl.com/msm-Investoren

Redalpine, Zürich  
www.redalpine.com

StartAngels Network, Zürich  
www.startangels.ch

Startfeld Stiftung, St. Gallen  
www.startfeld.ch

SVC AG für KMU Risikokapital, Zürich  
www.svc-risikokapital.ch

Swisscom Ventures AG, Zürich  
www.swisscom.ch/de/ventures

Venture Kick, St. Gallen  
www.venturekick.ch

Verium, Zürich  
www.verium.ch

Wellington Partners, Zürich  
www.wellington-partners.com

Wemakeit.com, Zürich  
www.wemakeit.com

Zühlke Ventures, Schlieren (ZH)  
www.zuehlke.com/ventures.html

Zürcher Kantonalbank, Zürich  
www.zkb.ch

Volkswirtschaft Stiftung, Zürich  
www.volkswirtschaft-stiftung.ch/

## GOVERNMENT & REGULATIONS

Appenzell Ausserrhoden -  
Amt für Wirtschaft, Herisau (AR)  
www.wifoear.ch

Appenzell Innerrhoden -  
Wirtschaftsförderung, Appenzell (AI)  
www.tinyurl.com/gewerbefoerderung

economiesuisse, Zürich  
www.economiesuisse.ch

Graubünden - Wirtschaftsförderung, Chur  
www.awt.gr.ch

Greater Zurich Area, Zürich  
www.greaterzuricharea.ch

Netzwerk Standortförderung  
Kanton Zürich, Zürich  
www.tinyurl.com/standortfoerderung

Schaffhausen - Standortförderung,  
www.economy.sh

Standortförderung Stadt St.Gallen,  
www.stadt.sg.ch

Standortförderung Züri Unterland,  
Bülach (ZH)  
www.zueri-unterland.ch

St. Gallen - Standortförderung,  
www.standort.sg.ch

Thurgau - Standortförderung,  
Frauenfeld  
www.wifoe.tg.ch

Zürich - Standortförderung, Zürich  
www.awa.zh.ch

## INFRASTRUCTURE

Bio-Technopark @ Schlieren-Zürich,  
Schlieren (ZH)  
www.bio-technopark.ch

BlueLion, Zürich  
www.bluelion.ch

Bodensee Technologie & Trade Center AG,  
Kreuzlingen (TG)  
www.bttc.ch

citizen space, Zürich  
www.citizen-space.ch

Cultural Entrepreneurship an der  
ZHDK, Zürich  
http://entrepreneurship.zhdk.ch

E-Tower,  
Gründerzentrum der HTW, Chur  
www.e-towerchur.ch

Grow Gründerorganisation Wädenswil,  
Wädenswil (ZH)  
www.grow-waedenswil.ch

Spider Town, Tägerwilen (TG)  
www.spidertown.ch

Startzentrum Zürich, Zürich  
www.startzentrum.ch

tebo Technologiezentrum, Zürich  
www.tebo.ch

Technopark @ Winterthur, Winterthur  
www.technopark-winterthur.ch

Technopark @ Zürich, Zürich  
www.technopark.ch

The Hub, Zürich  
www.zurich.impacthub.net

VentureWorks, St. Gallen  
www.linksert.com

## INNOVATION

CHost, St. Margrethen (SG)  
www.h24.ch

Empa Technologietransfer,  
Dübendorf (ZH)  
www.empa.ch

ETH Transfer, Zürich (ZH)  
www.transfer.ethz.ch

Glatec, Dübendorf  
www.glatec.ch

Google Switzerland GmbH, Zürich  
www.google.ch

Innozét, Grüşch (GR)  
www.innozét.ch

Nobel Biocare Services AG, Kloten (ZH)  
www.nobelbiocare.com

Ostsinn, St. Gallen  
www.ostsinn.ch

RhyTech - Materials World,  
Neuhausen am Rheinfall (SH)  
www.rhytech.ch

ri.nova impulszentrum, Rebstein (SG)  
www.rinova.ch

Stiftung Futur, Business-Inkubator,  
Rapperswil-Jona (SG)  
www.futur.ch

Wissenstransferstelle der FHSG,  
St. Gallen  
www.fhsg.ch/wtt.nsf/de/home

## NETWORKS

Business and Professional Women  
Switzerland, Zürich  
www.bpw.ch

Creative Zurich, Zürich  
www.creativezurich.ch

Efficiency-Clubs, Zürich  
www.encyclubs.ch

Entrepreneur Club ETH, Zürich  
www.entrepreneur-club.org

Failcon, Zürich  
www.failcon.ch

FBA - Family Business Association,  
Zürich  
www.familybusinessassociation.ch

FFU - FachFrauenUmwelt, Zürich  
www.ffu-pee.ch

Frauen Netzwerk Balance, St. Gallen  
www.balance-netz.ch/leitbild.htm

Frauen Vernetzungswerkstatt, St. Gallen  
www.frauenvernetzungswerkstatt.ch

HSG Young Entrepreneurs Club, St.  
Gallen  
www.yechsg.ch

IDEE-SUISSE, Zürich  
www.idee-suisse.ch

Infostelle Frau + Arbeit, Weinfelden  
(TG)  
www.frauundarbeit.ch

Innozét, Grüşch (GR)  
www.innozét.ch

KMU Campus, St. Gallen  
www.kmu-campus.org

Manufuture-CH, Zürich  
www.manufuture.ch

Pioneers Club, Zürich  
www.pcunetwork.com

Schweizer Franchise Verband, Zürich  
www.franchiseverband.ch

Sustainable Engineering Network,  
Seegräben (ZH)  
www.sustainableengineering.ch

SVIN – Schweizerische Vereinigung der  
Ingenieurinnen, Zürich  
www.svin.ch

S-WIN, Zürich  
www.s-win.ch

Swiss Biotech Association, Zürich  
www.swissbiotech.org

Swiss Cleantech, Zürich  
www.swisscleantech.ch

Swiss Foundations, Zürich  
www.swissfoundations.ch

Swiss Technology Network,  
Volketswil (ZH)  
www.swisst.net

VCHU – Verband Schweizer  
Unternehmerinnen, Zürich  
www.vchu.ch

Venture Leaders, St. Gallen  
www.venturelab.ch

Verband Frauenunternehmen, Zürich  
www.frauenunternehmen.ch

Verband Wirtschaftsfrauen Schweiz,  
Zürich  
www.wirtschaftsfrauen.ch

Verein ostschweizerinnen.ch, Zürich  
www.ostschweizerinnen.ch

Win Link, Winterthur  
www.winlink.ch

Women's Forum – Network, Zürich  
www.womensforum.ch

## SUPPORT



Affentranger Associates, Zürich  
www.aasa.com

Autocluster, Uster (ZH)  
www.autocluster.ch

BDO, Zürich  
www.bdo.ch

Bereich Forschung und  
Nachwuchsförderung, Zürich  
www.research-projects.uzh.ch

Bürgerschaftsgenossenschaft Ostschweiz,  
St. Gallen  
www.bgost.ch

Company Market, Zürich  
www.companymarket.ch

Ernährungswirtschaft, Weinfelden (TG)  
www.ernaehrungswirtschaft.ch

Evaluate Science, Zürich  
www.evaluate-science.com

E-Zürich, Zürich  
www.ezurich.ch

Gründen.ch, Zürich  
www.gruenden.ch

HSG Center for Entrepreneurship, St.  
Gallen  
www.ent.unisg.ch

HSG Startup Lab, St. Gallen  
www.cfe.unisg.ch/for-start-ups/start-  
uphsg/vision/

HTC High-Tech-Center AG, Tägerwilten  
(TG)  
www.high-tech-center.ch

ICT Agenda, Zürich  
www.ict-agenda.ch

IFJ Institut für Jungunternehmen,  
St. Gallen  
www.ifj.ch

Inno Swiss, St. Gallen  
www.inno-swiss.com

Innozeta, Grüşch (GR)  
www.innozeta.ch

International Packaging Institute,  
Schaffhausen  
www.ipi.eu

I-Source, Glattburg (ZH)  
www.isource.ch

ITS Industrie- und Technozentrum,  
Schaffhausen  
www.its.sh.ch

Jung-Unternehmer-Zentrum, Wil  
www.jungunternehmerzentrum.ch

KMU Ratgeber, Effretikon (ZH)  
www.kmuratgeber.ch

Kreativwirtschaft, Zürich  
www.kreativwirtschaft.ch

Kulturwirtschaft, Zürich  
www.kulturwirtschaft.ch

Lifescience Zürich, Zürich  
www.lifescience-zurich.ch

Nano-Cluster Bodensee, St. Gallen  
www.ncb.ch

Newtech Club, Schlieren (ZH)  
www.newtechclub.ch

Ostschweizer Bürgerschaftsgenossen-  
schaft, St. Gallen  
www.bgost.ch

Ostschweizer Gründermesse, St. Gallen  
www.gruendermesse.ch

senExpert, Zürich  
www.senexpert.ch

SGE Expert Directory  
http://expertdirectory.s-ge.com

SnS Ventures, St. Gallen  
www.snsventures.ch

Social Entrepreneurship Initiative,  
Zürich  
www.seif.org

Social Impact Start, Zürich  
www.tinyurl.com/Social-Impact-ZRH

Sportcluster, Zürich  
www.sportcluster.ch

Startfeld, St. Gallen  
www.startfeld.ch/

Startup Monitor, St. Gallen  
www.startupmonitor.ch

Startup@HSG, St. Gallen  
www.ent.unisg.ch

Startup@UZH, Zürich  
www.startup.uzh.ch

Startup.ch, St. Gallen  
www.startup.ch

Startups, Winterthur  
www.startups.ch

Startwerk, St. Gallen  
www.startwerk.ch

Swiss Aerospace Cluster, St. Gallen  
www.swiss-aerospace-cluster.ch

Swiss Biotech Association, Zürich  
www.swissbiotech.org

Swiss Export, Zürich  
www.swissexport.ch

Swiss Food Research, Zürich  
www.swissfoodresearch.ch

Swiss ICT, Zürich  
www.swissict.ch

Swissnanocube, St. Gallen  
www.swissnanocube.ch

Switzerland Global Enterprise, Zürich  
www.s-ge.com/

Venture Valuation AG, Zürich  
www.venturevaluation.com

## VISIBILITY



Axa Innovation Award, Winterthur  
www.tinyurl.com/Axa-Innovation-Award

be.project, Zürich  
www.beproject-europe.com

Best of Swiss Gastro Award, Zürich  
www.bestofswissgastro.ch

Best of Swiss Web Award, Zürich  
www.bestofswissweb.ch

Cash, Zürich  
www.cash.ch

Electrosuisse Prix Innovation ITG,  
Fehraltdorf (ZH)  
www.electrosuisse.ch

ESPRIX Swiss Award for Excellence,  
Affoltern (ZH)  
www.esprix.ch

ETH Doctorate Awards, Zürich  
www.ethz.ch/en/doctorate.html

ETH Spin-Off Label, Zürich  
www.tinyurl.com/ETH-Spin-Off-Label

EY Entrepreneur of the Year  
www.tinyurl.com/Ey-Entrepreneur-Of-  
The-Year

Handelszeitung, Zürich  
www.handelszeitung.ch

Heuberger Winterthur  
Jungunternehmerpreis, Winterthur  
www.jungunternehmer-preis.ch

HUB Zurich kickSTART, Zürich  
www.hubzurich.org

IBK-PREIS, St. Gallen  
www.ibk-gesundheit.org

IHK Prize Thurgau, Weinfelden (TG)  
www.ihk-thurgau.ch

Innovationspreis der Schweizer  
Assekuranz, Zürich  
www.innovationspreis-assekuranz.ch

Jackstädt-Award  
"HSG Founder of the year", St. Gallen  
www.tinyurl.com/Founder-of-the-Year

KMU-Magazin, Horn (TG)  
www.kmu-magazin.ch

KPMG Tomorrow's Market Award,  
Zürich  
www.kpmg.com/CH

Microsoft Schweiz Partner of the Year  
Award, Wallisellen (ZH)  
www.tinyurl.com/MS-Partner-of-the-  
Year

Microsoft Schweiz Technology Innova-  
tion Award, Wallisellen (ZH)  
www.tinyurl.com/t-Innovation-Award

Motivationspreis Thurgauer Apfel,  
Weinfelden (TG)  
www.ihk-thurgau.ch

Organisator.ch, St. Gallen  
www.organisator.ch

Pioneer Fellowship, Zürich  
www.tinyurl.com/pioneer-fellowships

SEIF-Swiss Award, Zürich  
www.seif.org

Spark Award, Zürich  
www.tinyurl.com/Spark-Award-2016

Startfeld Diamant, St. Gallen  
www.sgkb.ch/de/geschaeftskunden/startfeld-diamant

Startfeld Start Award, St. Gallen  
www.startfeld.ch

START Summit, St. Gallen  
www.startsummit.ch

Startup Monitor, St. Gallen  
www.startupmonitor.ch

Startups.ch Award, Winterthur  
www.tinyurl.com/Startups-ch-Award

Swiss ICT Award, Zürich  
www.swissict-award.ch

SWISS IDEA Awards, Zürich  
www.idee-suisse.ch

SWISS IDEA - Golden Creativity Award, Zürich  
www.idee-suisse.ch

Swiss Marketing Trophy, Zürich  
www.marketingtag.ch

Tamedia AG, Zürich  
www.tamedia.ch

Thurgauer Jungunternehmerpreis, Weinfelden (TG)  
www.startnetzwerk.ch

Top 100 Start-ups, St. Gallen  
www.startup.ch

UnternehmerZeitung, Zürich  
www.unternehmerzeitung.ch

Venture Kick, St. Gallen  
www.venturekick.ch

Venture, Zürich Flughafen  
www.venture.ch

Wirtschaftsmagazin, Uster (ZH)  
www.wirtschaftsmagazin.ch

ZKB KMU Preis, Zürich  
www.tinyurl.com/ZKB-KMU-Preis

ZKB Pionierpreis, Zürich  
www.pionierpreis.ch

Zurich Climate Prize, Zürich  
www.climateprize.zurich.ch

## CENTRAL SWITZERLAND

### EDUCATION



Wyrsch Unternehmerschule AG für KMU, Freienbach (SZ)  
www.unternehmerschule.ch

### FINANCING



bainso ag, Küsnacht (SZ)  
www.bainso.com

HBM Partners AG, Zug  
www.hbmpartners.com

Innovationsstiftung der Schwyzer Kantonalbank, Schwyz  
www.szkb.ch/innovationsstiftung

Invision Private Equity, Zug  
www.invision.ch

paprico, Baar (ZG)  
www.paprico.ch

Schwyzer Kantonalbank, Schwyz  
www.szkb.ch

VALAMERO Holding AG  
www.valamero.com

VI Partners, Zug  
www.vipartners.ch

### GOVERNMENT & REGULATIONS



Glarus – Wirtschaftsförderung, Glarus  
www.glarusnet.ch

Luzern – Wirtschaftsförderung, Luzern  
www.luzern-business.ch

Obwalden – Standortförderung, Sarnen (OW)  
www.iow.ch

Schwyz – Standortförderung, Schwyz  
www.schwyz-wirtschaft.ch

Standortförderung Höfe, Pfäffikon (SZ)  
www.standort-hoefe.ch

Uri – Standortförderung, Altdorf  
www.ur.ch/wfu

Zug – Standortförderung, Zug  
www.zug.ch/economy

### INFRASTRUCTURE



BusinessPark Zug, Zug  
www.businessparkzug.ch

Coworking Box, Luzern  
www.coworkingbox.ch

microPark Pilatus, Alpnach (LU)  
www.microparkpilatus.ch

Technologiezentrum Schwyz, Steinen (SZ)  
www.tzsz.ch

Technopark® Luzern, Luzern  
www.technopark-luzern.ch

### INNOVATION



InnovationsTransfer Zentralschweiz, Horw (LU)  
www.itz.ch

Swiss Design Transfer, Luzern  
www.swissdesigntransfer.ch

TEK – Vorsprung dank Wissen, Küsnacht (SZ)  
www.tek-kmu.ch

### NETWORKS



Efficiency-Clubs, Luzern  
www.efficiency-luzern.ch

Efficiency-Clubs, Zug  
www.efficiency-club-zug.ch

Junior Chamber International Switzerland, Glarus  
www.jci.ch

SECA (Swiss Private Equity and Corporate Finance Association), Zug  
www.seca.ch

wif-Wirtschaftsforum für Frauen, Luzern  
www.wif-wirtschaftsforum.ch

### SUPPORT



Albert Köchlin Stiftung (AKS), Luzern  
www.aks-stiftung.ch

Bürgerschaftsfonds des Kantons Schwyz, Schwyz  
www.szkb.ch/buergerschaftsfonds

Cleantech Zug, Zug  
www.tinyurl.com/Cleantech-Cluster

Ernst Göhner Stiftung, Zug  
www.ernst-goehner-stiftung.ch

Finance Valley, Schwyz  
www.financevalley.ch

Financial Services Standards Association (VQF), Zug  
www.vqf.ch

Grid Luzern, Luzern  
www.gridlucerne.ch

Health Tech Cluster Switzerland, Steinen (SZ)  
www.healthtech.ch

Institut für Finanzdienstleistungen, Zug  
www.ifz.ch

KMU Innovation, Goldau (SZ)  
www.kmuinnovation.com

Launchswiss, Baar (ZG)  
www.launchswiss.ch

Micro Center Central Switzerland AG, Alpnach Dorf (OW)  
www.mccs.ch

Swissphotonics, Wollerau (SZ)  
www.swissphotonics.net/home.html

Technologieforum Zug, Zug  
www.technologieforumzug.ch

Wirtschaft Schwyz, Schwyz  
www.wirtschaft-schwyz.ch

### VISIBILITY



Startup Ticker, Luzern  
www.startupticker.ch

The Swiss App Awards, Schindellegi (SZ)  
http://swissappawards.ch

Zentralschweizer Neuunternehmerpreis, Luzern  
www.gewerbe-treuhand.ch

Zuger Innovationspreis, Zug  
www.tinyurl.com/Z-Innovationspreis

Zuger Jungunternehmerpreis, Zug  
www.zugerjup.ch

## VALAIS

### FINANCING

Club Valaisan des Business Angels, Sion  
www.bizangels.ch

Finanzkompetenzzentrum, Sion  
www.ccf-valais.ch

BlueArk, Sion  
www.blueark.ch

IdeArk, Martigny  
www.ideark.ch

PhytoArk, Sion  
www.phytoark.ch

### GOVERNMENT & REGULATIONS

Wallis – Standortförderung, Sion  
www.business-valais.ch

TechnoArk, IKT-Zentrum, Sierre  
www.technoark.ch

Technopôle, Sierre  
www.technopole.ch

### INFRASTRUCTURE

BioArk, Monthey  
www.bioark.ch

### SUPPORT

CimArk, Sion  
www.cimark.ch

Cleantech Alps, Sion  
www.cleantech-alps.com

Finanzkompetenzzentrum, Sion  
www.ccf-valais.ch

OVAC – Bürgschaftsgenossenschaft, Sion  
www.ovac.ch

The Ark, Sion  
www.theark.ch

### VISIBILITY

Prix Créateurs BCVS, Sion  
www.prixcreateursbcvs.ch/

## WESTERN SWITZERLAND

### EDUCATION

Akad Business, Lausanne  
www.akad.ch/business

EPFL Chair for Entrepreneurship,  
Lausanne  
http://entc.epfl.ch/

HSW Fribourg - Institute for  
Entrepreneurship, Fribourg  
www.entrepreneurshipinstitute.ch

Institute for Value-Based Enterprise  
(IVE), Fribourg  
www.iveinstitute.org

Delman SA, Genf  
www.delman.ch

DEBIOPHARM INVESTMENT S.A.,  
Lausanne  
www.debiopharm.com/about-us/  
debiopharm-investment-s-a.html

DEFI Gestion SA, Lausanne  
www.defigestion.ch

Endeavour Vision SA, Genf  
www.endeavourvision.com

EPFL Innogrant, Lausanne  
http://vpiv.epfl.ch/innogrants

Finergence, Neuenburg  
www.finergence.ch

FONGIT Seed Invest, Plan-les-Ouates (GE)  
www.fongit.ch

Index Ventures, Genf  
www.indexventures.com

Innovationsfonds der Alternativen  
Bank Schweiz ABS, Lausanne  
www.tinyurl.com/AB-Innovationsfonds

Innovationsfonds des Kantons Freiburg,  
Fribourg  
www.promfr.ch

Mikrokredit Solidarität Schweiz MSS,  
Lausanne  
www.microcredit-solidaire.ch

MYK Group SA, Neuenburg  
www.mykgroup.com

Polytech Ventures, Ecublens (VD)  
www.polytechventures.com

Seed Capital Freiburg, Fribourg  
www.seedcapital-fr.ch

Venture Capital Fribourg, Fribourg  
www.capitalrisque-fr.ch

Venturi, Villaz-St-Pierre (FR)  
http://venturi.vivier.ch

Vinci Capital, Lausanne  
www.vincicapital.ch

### GOVERNMENT & REGULATIONS

economiesuisse, Genf  
www.economiesuisse.ch

Genf - Promotion Economique, Genf  
www.whygeneva.ch

Neuenburg - Promotion Economique,  
Neuenburg  
www.neuchateleconomie.ch

Waadt – Standortförderung, Lausanne  
www.vd.ch/selt

### INFRASTRUCTURE

BioPôle Business Park Lausanne,  
Epalinges (VD)  
www.biopole.ch

Eclau, Lausanne  
http://eclau.ch

Fri Up, Gründerzentrum Zentrum,  
Fribourg  
www.friup.ch

La Fondation des Ateliers de la Ville  
Renens, Renens (VD)  
www.ateliersvdr.ch

Le Garage EPFL, Lausanne  
www.tinyurl.com/Le-Garage-EPFL

Neode Parc, Neuenburg  
www.neode.ch

Parc Scientifique PSE, Lausanne  
www.parc-scientifique.ch

TecOrbe Greentech Center, Orbe (VD)  
www.tecorbe.ch

### INNOVATION

Alliance, Lausanne  
www.alliance-tt.ch

CSEM, Neuenburg  
www.csem.ch

Unitec, Genf  
www.unige.ch/unitec

### NETWORKS

Association Pacte, Lausanne  
www.pacte.ch

CFE – Club de Femmes Entrepreneurs,  
St. Sulpice (VD)  
www.femmes-entrepreneurs.ch

Netzwerk Kunststofftechnik, Fribourg  
www.netzwerk-kunststofftechnologie.ch

### SUPPORT

AlpICT, Plan-les-Ouates (GE)  
www.alpict.com

Ashoka Schweiz, Genf  
www.switzerland.ashoka.org

Bioalps, Plan-les-Ouates (GE)  
www.bioalps.org

Bürgschaftsgenossenschaft Westsch-  
weiz, Pully (VD)  
www.crcpme.ch

Cautionnement Romand, Pully (VD)  
www.cautionnementromand.ch

DEFI Gestion SA, Lausanne  
www.defigestion.ch

Eclosion, Plan-les-Ouates (GE)  
www.eclosion.com

Fondation Sandoz, Pully (VD)  
www.sandozfondation.ch

Fondetec, Genf  
www.fondetec.ch

Fri Up, Gründerzentrum Zentrum,  
Fribourg  
www.friup.ch

Genilem, Lausanne  
www.genilem.ch

Micronarc, Neuenburg  
www.micronarc.ch

Platinn, Fribourg  
www.platinn.ch

Vice-Présidence pour l'innovation et la  
valorisation (VPIV), Lausanne  
http://vpiv.epfl.ch

Y-Parc, Yverdon-les-Bains (VD)  
www.y-parc.ch

### VISIBILITY

Bilan, Genf  
www.bilan.ch

Debiopharm Awards, Lausanne  
www.debio.com

Dimitris N. Chorafas Award, Lausanne  
www.epfl.ch

DuPont des Matériaux Award, Lausanne  
www.epfl.ch



Eclosion Prize, Plan-les-Ouates (GE)  
www.eclosion.com

EPFL Asea Brown Boveri Award,  
Lausanne  
www.tinyurl.com/ABB-Award

EPFL Award Zeno Karl Schindler,  
Lausanne  
www.tinyurl.com/EPFL-Award-Zeno-  
Karl-Schindler

EPFL IBM Research Award, Lausanne  
www.tinyurl.com/IBM-Research-  
Award

EPFL doctorate awards, Lausanne  
www.tinyurl.com/Doctorate-Award

EPFL Professor René Wasserman  
Award, Lausanne  
www.tinyurl.com/Prof-Ren-Wasserman

EPFL "Ville de Lausanne" award,  
Lausanne  
www.tinyurl.com/Ville-de-Lausanne

Fondation pour l'Innovation Tech-  
nologique, Lausanne  
www.fondation-fit.ch

IMD Startup Competition, Lausanne  
www.imd.org

Luce Grivat Award, Lausanne  
www.tinyurl.com/Luce-Grivat-Award

Patrick Denantes Memorial Award,  
Lausanne  
www.tinyurl.com/Patrick-Denantes

PME Magazine, Genf  
www.pme.ch

Prix à l'innovation Fribourg, Fribourg  
www.innovationfr.ch

Prix BCN Innovation, Neuenburg  
www.bcn.ch

Prix "Coup de pouce", Nyon (VD)  
www.fondation-liechti.ch/coup-de-pouce

Prix Strategis HEC Lausanne,  
Lausanne  
www.prixstrategis.ch

Prix VITTOZ „Cap International“,  
Lausanne  
www.science-park.ch

Rolex Awards for Enterprise, Genève  
www.rolexawards.com

Ringier Digital AG, Flamett (FR)  
www.ringierdigital.ch

Social Entrepreneur of the Year,  
Cologne (GE)  
www.schwabfound.org

StartUp Weekend Lausanne, Lausanne  
www.lausanne.startupweekend.org

Trophées PERL, Lausanne  
www.tinyurl.com/Trophee-Perl

Ahlers, G., Cumming, D., Günther, Ch., & Schweizer, D. (2015). Signaling in equity crowdfunding. *Entrepreneurship Theory and Practice*, 39(4), 955–980.

Aldrich, H., & Zimmer, C. (1986). Entrepreneurship through social networks. In D. Sexton & R. Smiler (eds.), *The Art and Science of Entrepreneurship* (pp. 3-23). New York: Ballinger.

(Swiss) American Chamber of Commerce (Amcham) and Boston Consulting Group (BCG) (2006). *Foreign companies in Switzerland: The forgotten sector*. Zurich.

Audretsch, D. (2002). The dynamic role of small firms: evidence from the US. *Small Business Economics* 18(1), 13-40.

Audretsch, D., & Thurik, R. (2000). Linking entrepreneurship to growth. Paper prepared for the OECD Directorate for Science, Technology and Industry. doi: 10.1787/736170038056.

Audretsch, D., & Feldman, M. (1996). R&D spillovers and the geography of innovation and production. *The American Economic Review*, 86(3), 630-640.

Bailey, M.E., Bertelsman, E.J., & Haltiwanger J. (1996). Downsizing and productivity growth, *Small Business Economics*, 8(4), 259-278.

Baldwin, J.R. (1995). *The dynamics of industrial competition: A North American perspective*. Cambridge: University Press.

Baum, J.A., Calabrese, T., & Silverman, B.S. (2000). Don't go it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal*, 21(3), 267-294.

BDO Ltd (2013). *BDO annual report: Innovative Swiss SMEs*. Solothurn.

Blank, S. (2010). What's a startup? First principles. Retrieved on 13.07.2015 from <http://steveblank.com/2010/01/25/whats-a-startup-first-principles/>

Brinckmann, J., Grichnik, D. & Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning-performance relationship in small firms. *Journal of Business Venturing*, 25(1), 24-40.

Brush, C.G., Greene, P.G., & Hart, M.M. (2001). From initial idea to unique advantage: The entrepreneurial challenge of constructing a resource base. *Academy of Management Executive*, 15(1), 64–78.

Christen, A. (2015). Credit Suisse: What can Swiss industries expect in 2015? Retrieved on 05.09.2015 from <https://www.credit-suisse.com/ch/de/news-and-expertise/switzerland/articles/news-and-expertise/2015/02/de/what-can-swiss-industries-expect-in-2015.html>

DiMaggio, P. (1992). Nadel's paradox revisited: Relational and cultural aspects of organizational structures. In N. Nohria and R. G. Eccles (eds.), *Networks and organizations: Structure, form, and action*, pp. 118–42. Boston, MA: Harvard Business School Press.

Drucker, P. (1986). *Innovation and entrepreneurship*. New York: Harper and Row.

Elfring, T., & Hulsink, W. (2003). Networks in entrepreneurship: The case of high-technology firms. *Small Business Economics*, 21(4), 409-422.

Eurostat (2014). *Beschäftigung und Arbeitslosigkeit (LFS/AKE)*. Retrieved on 05.09.2015 from <http://ec.europa.eu/eurostat/de/web/lfs>.

European Commission (2008). *Final report of the expert group entrepreneurship in higher education, especially within non-business studies*. Brussels.

Federal Finance Administration (FFA) (2015). *Bericht zum Voranschlag - Schweizer Staatsfinanzen im internationalen Vergleich*. Bern.

Federal Statistical Office (FSO) (2003-2007). *Unternehmen – Indikatoren: Überlebensrate*. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/02/blank/key/02/ueberlebensraten.html>

## TICINO

## FINANCING



Tessin Promozione economica  
www.ti.ch/copernico

Agire Invest, Manno  
www.agire.ch

Healthcapital, Manno  
www.healthcapital.ch

Swiss Growth Investment SA, Manno  
www.swissgrowth.ch

## INFRASTRUCTURE



Agire Foundation, Manno  
www.agire.ch

Centro Promozione Start-up, Lugano  
www.cpstartup.ch

## SUPPORT



Onelife Advisors SA, Lugano  
www.onelife.ch  
Schweizer Industrie- und Handelskammer, Lugano  
www.cci.ch

## VISIBILITY



Ticino Management, Breganzona –  
Lugano  
www.ticinomanagement.ch

## GOVERNMENT &amp; REGULATIONS



economiesuisse, Lugano  
www.economiesuisse.ch

## INNOVATION



Agire Foundation, Manno  
www.agire.ch

# References

- Federal Statistical Office (FSO) (2013).** Daten - Statistik der Unternehmensstruktur STATENT. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/02/blank/data.html>
- Federal Statistical Office (FSO) (2013a).** Unternehmen - Indikatoren - Betreibungen und Konkurse. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/02/blank/key/02/betreibungen.html>
- Federal Statistical Office (FSO) (2013b).** Unternehmen – Indikatoren – Neugründungen. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/02/blank/key/02/neugruendungen.html>
- Federal Statistical Office (FSO) (2014).** Bruttoinlandprodukt. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/04/02/01.html>
- Federal Statistical Office (FSO) (2014a).** Aussenhandel - Indikatoren. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/06/05/blank/key/handelsbilanz.html>
- Federal Statistical Office (FSO) (2014b).** Bevölkerungsstand und -struktur – Indikatoren. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/02/blank/key/bevoelkerungsstand.html>
- Federal Statistical Office (FSO) (2014c).** Erwerbstätigkeit und Arbeitszeit. Retrieved on 05.09.2015 from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/03/02/blank/data/00.html>
- Feld, B. (2012).** Startup Communities: building an entrepreneurial ecosystem in your city. Hoboken: NJ, Wiley.
- Feldman, M., & Francis, J. (2004).** Homegrown solutions: Fostering cluster formation. *Economic Development Quarterly*, 18(2), 127-137
- Feldman, M., Francis, J., & Bercovitz, J. (2005).** Creating a cluster while building a firm: Entrepreneurs and the formation of industrial clusters. *Regional Studies*, 39(1), 129–141.
- Fritsch, M. (2008).** How does new business formation affect regional development? Introduction to the special issue. *Small Business Economics*, 30(1), 1-14.
- Geiger, T. (2012).** World Economic Forum. Retrieved on 03.09.2015 from <http://www.weforum.org/content/what-makes-switzerland-so-competitive>
- Global Entrepreneurship Monitor (GEM) (2014).** Report on Switzerland. Fribourg: S. Alberton P. Wild, R. Baldegger, F, Hacklin.
- Global Entrepreneurship Monitor (GEM) (2013).** Report on Switzerland. Fribourg: S. Alberton A. Brühlhart, R. Baldegger, F, Hacklin.
- Global Entrepreneurship Monitor (GEM) (2012).** Report on Switzerland. Fribourg: R. Baldegger, S. Alberton, F. Hacklin, A. Brühlhart, A. Huber, O. Saglam.
- Global Entrepreneurship Monitor (GEM) (2011).** Report on Switzerland. Fribourg: R. Baldegger, S. Alberton, F. Hacklin, A. Brühlhart, A. Huber and O. Saglam.
- Global Innovation Index (GII) (2014).** The Global Innovation Index 2014: The Human Factor in Innovation. Cornell University, Ithaca, NY: Soumitra Dutta, Bruno Lanvin, Sacha Wunsch-Vincent.
- Grichnik, D., Brettel, M., Koropp, C. & Mauer R. (2010).** Entrepreneurship: Unternehmerisches Denken, Entscheiden und Handeln in innovativen und technologieorientierten Unternehmungen. Stuttgart: Schäffer-Poeschel-Verlag.
- Grichnik, D., Brinckmann, J., Singh, L. & Manigart, S. (2014):** Beyond environmental scarcity: Human and social capital as driving forces of bootstrapping activities. *Journal of Business Venturing*, 29, 310–326.
- Haas, M, & Vogel, P. (2014).** Supporting the Transition from Unemployment to Self-employment – A Comparison of Governmental Support Programs across Europe. In: *Necessity Entrepreneurship: An Institutional Review*: Edward Elgar.
- Halabisky, D. (2012).** Entrepreneurial activities in Europe: Senior entrepreneurship. OECD Employment Policy Papers, No. 2, OECD Publishing. Retrieved on 15.07.2015 from <http://dx.doi.org/10.1787/5jxrcml7lhxq-en>
- Hanlon, D. & Saunders, C. (2007).** Marshalling resources to form small new ventures: toward a more holistic understanding of entrepreneurial support. *Entrepreneurship Theory and Practice*, 31(4), 619-641.
- Hathaway, I. (2013).** Kauffman Foundation Research Series: Firm formation and economic growth. Tech starts: High-technology business formation and job creation in the United States. Kansas City.
- Hayton, J.C., George, G., & Zahra, S.A. (2002).** National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory & Practice*, 26(4), 33-52. Hayton, J.,
- Hofstede G. (1980).** Cultures consequences: International differences in work related values. Sage Publications: Beverly Hills, CA.
- Hofstede, G. (2002).** Dimensions do not exist: A reply to McSweeney. *Human Relations*, 55(11), 119-125.
- International Monetary Fund (IMF) (2014).** IMF Data. Retrieved on 26.07.2015 from <http://www.imf.org/data>
- Kibler, E., Kautonen, T., & Fink, M. (2014).** Regional social legitimacy of entrepreneurship: Implications for entrepreneurial intention and start-up behaviour. *Regional Studies*, 48(6), 995-1015.
- Kyora, S., & Heimann, T. (2015).** Swiss Venture Capital Report. Lucerne.
- Lange, J., Marram, E., Jawahar, A., Yong, W., & Bygrave, W. (2011).** Does an entrepreneurship education have lasting value? A study of careers of 4,000 alumni. Massachusetts: Babson College Entrepreneurship Research Conference.
- Larson, A., and J., Starr (1993).** A network model of organization formation. *Entrepreneurship Theory and Practice*, 17(2), 5-15.
- Linder, W. (2010).** Swiss political system. Bern.
- Lundan, S. (2002).** Technology, clustering and foreign investment. Conference paper. Retrieved on 22.07.2015 from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.198.4690&rep=rep1&type=pdf>.
- Medtech Switzerland (2005).** Swiss Medtech Report. Bern.
- Marshall, A. (1920).** Principles of Economics. London: Mac-Millan.
- Mason, C., & Brown, R. (2014).** Entrepreneurial ecosystems and growth oriented entrepreneurship. Background paper prepared for the workshop organised by the OECD LEED Programme and the Dutch Ministry of Economic Affairs on Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship. Netherlands.
- Mayer-Haug, K., Read, S., Brinckmann, J., Dew, N. & Grichnik, D. (2013).** Entrepreneurial talent and venture performance. A Meta-analytic investigation in SMEs. *Research Policy*, 42(6-7), 1251–1273.
- McGrath, R.G. (1999).** Falling forward: Real options reasoning and entrepreneurial failure. *Academy of Management Review*, 24(1), 13-30.
- Mitchell, R.K., Smith, B., Seawright, K.W., & Morse, E.A. (2000).** Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal*, 43(5), 974-983.
- Moore, J. (1993).** Predators and prey: A new ecology of competition. *Harvard Business Review*. May – June Issue.
- Newbert S.L., Tornikoski E.T., & Quigley N. R. (2013).** Exploring the evolution of supporter networks in the creation of new organizations. *Journal of Business Venturing*, 28(2), 281–298.
- OECD (2012).** Entrepreneurship at a Glance 2012, OECD Publishing. [http://dx.doi.org/10.1787/entrepreneur\\_aag-2012-en](http://dx.doi.org/10.1787/entrepreneur_aag-2012-en).
- OECD (2013).** OECD Statistics: Transport infrastructure investment and maintenance spending. Retrieved on 05.09.2015 from <http://stats.oecd.org/>

# References

- OSEC (2010).** Switzerland. Your No. 1 business location in Europe. Zürich.
- Reynolds, P., Hay, M., Bygrave, W., Camp, S., & Autio, E. (2000).** Global Entrepreneurship Monitor: 2000 Executive Report. Babson College/London Business School.
- Rosenfeld, S. (1997).** Bringing business clusters into the mainstream of economic development. *European Planning Studies*, 5(1), 3-23.
- Rosted, J. (2012).** Understanding Business Ecosystems, FORA Group.
- Sheldon, G. (2010).** Die Volkswirtschaft: Das Magazin für Wirtschaftspolitik. Der Schweizer Arbeitsmarkt seit 1920: Langfristige Tendenzen. Basel.
- Sheldon, G. (2013).** Die Volkswirtschaft Das Magazin für Wirtschaftspolitik. Der Schweizer Arbeitsmarkt im internationalen Vergleich: Ein Erfolgsmodell. Basel.
- Seidman, K. (2005).** Economic development finance. Thousand Oaks: SAGE publications.
- Sieger, P., Baldegger, R., & Fueglistaller, U. (2013).** Studentisches Unternehmertum in der Schweiz: Erkenntnisse aus GUESSS 2013/2014. KMU-HSG.
- Skinner, Barnaby (24.07.2015).** Woran Schweizer Jungfirmen scheitern. *Tagesanzeiger*. Retrieved on 05.11.2015 from <http://www.tagesanzeiger.ch/wirtschaft/standard/Woran-Schweizer-Jungfirmen-scheitern/story/19437242>
- Spigel, B. (2015).** The relational organization of entrepreneurial Ecosystems. *Entrepreneurship Theory and Practice*. DOI: 10.1111/etap.12167.
- Spilling O. R. (1996).** The entrepreneurial system: On entrepreneurship in the context of a mega event. *Journal of Business Research*, 36(1), 91–103.
- Stam, E. (2014).** The Dutch Entrepreneurial Ecosystem. Utrecht University.
- Startup Compass (2015).** The Global Startup Ecosystem Ranking 2015. San Francisco.
- Start-up Monitor Foundation (2013).** The Start-up Monitor landscape of Switzerland - First Insights from the Swiss Start-up Monitor. St.Gallen.
- Steinhoff, Isabel (04.11.2014).** GPS für Chirurgen soll Schmerzen ersparen. *Handelszeitung*. Retrieved on 05.11.2015 from <http://www.handelszeitung.ch/unternehmen/gps-fuer-chirurgen-soll-schmerzen-ersparen-676312>
- Startupticker (14.03.2012).** Poken raises USD 2 million, appoints new CEO, and moves to the US. Retrieved on 05.11.2015 from <http://www.startupticker.ch/en/news/march-2012/poken-raises-usd-2-million,-appoints-new-ceo,-and->
- Startupticker (30.04.2014).** EVRYTHNG Announces \$7m Series A Funding. Retrieved on 05.11.2015 from <http://www.startupticker.ch/en/news/april-2014/evrythng-announces-7m-series-a-funding>
- Startupticker (27.11.2015).** Denkpause bei Besteuerung von Startup-Aktien. Retrieved on 28.11.2015 from <http://startupticker.ch/en/news/november-2015/denkpause-bei-besteuerung-von-startup-aktien>
- State Secretariat for Education and Research (SER) (2011).** Higher education and research in Switzerland. Bern.
- State Secretariat for Economic Affairs (SECO) (2009).** SECO report: The Economic Relevance of Free Trade Agreements with Partners outside the EU. Bern: Marianne Abt.
- State Secretariat for Economic Affairs (SECO) (2012).** SECO report: Risikokapital in der Schweiz. Bern.
- Stinchcombe, A. L., (1965).** Social structure and organisations. In J.G. March (eds.), *Handbook of Organization*. Chicago: Rand McNally and Company.
- Stuart, T. E., Hoang, H., & Hybels R.C (1999).** Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44, 315-349.
- Summit Consulting (2009).** Toward effective education of innovative entrepreneurs in small business: Initial results from a survey of college students and graduates. Prepared under contract for the Small Business Administration. Retrieved on 24.07.2015 from <http://archive.sba.gov/advo/research/rs353tot.pdf>
- Swiss Info (23.07.2015).** Drop in Swiss R&D spending due to immigration vote. Retrieved on 24.09.2015 from [http://www.swissinfo.ch/eng/foreign-cutbacks\\_drop-in-swiss-r-d-spending-due-to-immigration-vote/41563712](http://www.swissinfo.ch/eng/foreign-cutbacks_drop-in-swiss-r-d-spending-due-to-immigration-vote/41563712)
- Swiss National Fund (SNF) (2012).** Research landscape in Switzerland. Retrieved on 05.09.2015 from [http://www.snf.ch/SiteCollectionDocuments/por\\_fac\\_sta\\_fopl\\_ch\\_jb12\\_e.pdf](http://www.snf.ch/SiteCollectionDocuments/por_fac_sta_fopl_ch_jb12_e.pdf).
- Swiss Start-up Monitor (2015).** Swiss Start-up Monitor Directory. Retrieved on 23.11.2015 from <https://start-upmonitor.ch>
- Swiss Venture Guide (2013).** From the Idea to a Successful Company. Retrieved on 05.11.2015 from <http://www.swissventureguide.ch/SWVG/media/SWVG/2013/SVG-2013.pdf>
- Switzerland Global Enterprise (SGE) (2014).** Handbook for investors: Switzerland as a business location. Zürich.
- Thomas, A.S. & Mueller, S.L. (2000).** Entrepreneurship: Assessing the relevance of culture. *Journal of International Business Studies*, 31(2), 287-301.
- UBS Switzerland AG (2015a).** Safeguard your Pillar 2 pension assets – with the vested benefits account. Retrieved on 05.09.2015 from <https://www.ubs.com/ch/en/swissbank/private/pension/pillar-2/vested-benefits-account.html>
- UBS Switzerland AG (2015b).** Prices and earnings 2015. Do I earn enough for the life I want? Zurich.
- Van de Ven A. H. (1993).** The development of an infrastructure for entrepreneurship. *Journal of Business Venturing*, 8(3), 211–230.
- Vogel, P. (2013).** The Employment Outlook for Youth: Building Entrepreneurship Ecosystems as a Way Forward (April 18, 2013). Conference Proceedings of the G20 Youth Forum, 2013. Available at SSRN: <http://ssrn.com/abstract=2357856>.
- Vogel, P., & Grichnik, D. (2014).** The Swiss entrepreneurship ecosystem – From innovation to market. Available at <http://ssrn.com/abstract=2587404>.
- Vogel, P. (2015).** Generation Jobless? Turning the Youth Unemployment Crisis into Opportunity. Palgrave MacMillan, UK.
- Volkman, C., Wilson, K., Mariotti, S., Rabuzzi, D., Vyakarnam, S., & Sepulveda, A. (2009).** Educating the next wave of entrepreneurs: Unlocking entrepreneurial capabilities to meet the global challenges of the 21st century. Switzerland: World Economic Forum.
- Vonplon, David (18.11.2015).** Steuerlasten bringen Startups in Not. *Handelszeitung*. Retrieved on 25.11.2015 from <http://www.handelszeitung.ch/unternehmen/steuerlasten-bringen-startups-not-920031>
- World Bank (2014).** World Development Indicators database: GDP ranking. Data available on <http://data.worldbank.org/data-catalog/GDP-ranking-table>. Retrieved on. 09.08.2015.
- World Bank Group (2015).** Doing business 2015: Going beyond efficiency. Washington DC. Data available on <http://www.doingbusiness.org/rankings>. Retrieved on 05.09.2015.
- World Economic Forum (WEF) (2013).** Entrepreneurial Ecosystems Around the Globe and Company Growth Dynamics. Geneva.
- World Economic Forum (WEF) (2014).** The Global Competitiveness Report 2014–2015. Geneva.
- World Economic Forum (WEF) (2015).** The Global Competitiveness Report 2015–2016. Geneva.
- Wu, Z., Chua, J., & Chrisman, J. (2007).** Effects of family ownership and management on small business equity financing. *Journal of Business Venturing*, 22(6), 875-895.





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