1. INTRODUCTION

Generally, Switzerland is linked with an outstanding innovation potential, resulting from its universities, established enterprises (just to mention the global pharma players), and start-up companies. In the rankings of the World Intellectual Property Organization, the World Economic Forum’s Global Competitiveness Report, and the European Innovation Scoreboard, Switzerland regularly appears among the top ranks with regard to patent applications and innovation performance (World Intellectual Property Organization, 2015; World Economic Forum, 2015; European Commission, 2016).

In the same context, however, the country faces a tremendous problem: a potential for patents and innovation is the prerequisite for innovations, but not sufficient. Bringing new scientific findings to success requires a transformation to the market. Here come the start-ups into play (Leitão, Lasch, & Thursik, 2011), who are major “innovation dealers”, because they have a high interest in the conversion of existing knowledge into useful and marketable products. Kortum and Lerner (2000) conduct a cross-comparison and find young firms to come up with a higher activity in the field of innovations. Economic growth and the prosperity of a country are highly dependent on the innovation capability of start-ups—especially in a resource-scarce and high-wage country like Switzerland. The conditions and problems the start-ups face, i.e. their success factors, are very important for the long-term wealth of a country. It is the purpose of this article to identify success factors of innovative start-ups from the entrepreneurs’ perception. Due to the findings, special attention will be given to the start-up’s financing source venture capital.

As the Swiss start-up scene did not have a very high momentum for a long time (it emerged after the millennium), the observations from there are highly relevant for businesses, the economy, and politics, especially in quickly developing countries like in Asia. The experience from Switzerland provides an effective input to any country that currently faces the necessity of building up a start-up scene, and are therefore highly relevant from an international perspective and from the perspective of regional development (see also Scheela et al., 2015).

2. LITERATURE REVIEW

The significance of venture capital for innovation and growth has been proved by manifold previous research (Calderon & Liu, 2003; Hartmann et al., 2007; Mitter, 2010). Hellmann and Puri (2002) show a positive influence of the support of start-ups with venture capital on the innovative outcome, on the speed of product placements, and on the professionalisation of the management of the start-ups. Young firms that are capitalized with venture capital do receive valuable leadership and industry knowledge as well as access to networks. Moreover, Meyer (2008) points out an improvement of the transfer of new products to the market by venture capital. According to Romain and van Pottelsberghoe (2004), venture capital fosters productivity growth of the economy and the transmission of innovations due to several reasons. On the one hand, young firms often push forward new research fields that established firms have not worked on. On the other
hand, they boost competitive pressure and therefore contribute to the transformation ability and innovativeness of economies (Vetschera & Gillesberger, 2007). Altogether, a functioning and active entrepreneurial venture capital sector has positive effects on the innovation-driven growth of an economy.

3. METHODOLOGY AND DATA

This paper uses empirical data to gain insight into the start-up scene and its experiences and needs, followed by a conceptual discussion about venture capital as a fundamental source of external financing.

One part of the data has been collected by the author in 90 interviews, meetings, and encounters with different entrepreneurs/start-ups between 2007 and 2016, supplemented by several media observations (e.g. newspaper interviews). The other part originates from the Swiss Venture Capital Database (University of Basel, 216 start-ups with relevant feedback between 2007 and 2016). Both the database as well as the data hand-collected by the author use the same questioning structure. The entrepreneurs have been asked the following questions (cf. Figure 1):

1. Which factors were most significant for the success of your company?
2. How important was external financing for your company?
3. What kind of further support did your company obtain from the investors?

Altogether, in 23 cases previously questioned start-ups have been surveyed again, however not earlier than after three years. Due to the additional experience gained along the entrepreneurial life cycle in the meantime, answers from both points of time have been used.

Figure 1. Central Questions

<table>
<thead>
<tr>
<th>SUCCESS FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which of the following factors were most significant for the success of your company? (multiple answers are possible)</td>
</tr>
<tr>
<td>External financing □ □ □ □ □ □ □ □</td>
</tr>
<tr>
<td>Internal financing □ □ □ □ □ □ □ □</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPOTLIGHT: EXTERNAL FINANCING</th>
</tr>
</thead>
<tbody>
<tr>
<td>How significant was external financing for your company?</td>
</tr>
<tr>
<td>Not significant □</td>
</tr>
<tr>
<td>What kind of further support did your company obtain from the investors? (multiple answers are possible)</td>
</tr>
<tr>
<td>Know-how □ □</td>
</tr>
</tbody>
</table>

19% of the questioned entrepreneurs/start-ups described themselves to be in the early stage, 39% in the expansion stage, and 42% in later stages. 38% do their business in “Information and Communication Technology”, 29% within the “Engineering” sector, 24% in “Biotechnology”, 8% in “Medical Technology”, and 1% in the “Greentech” industry.

4. ANALYSIS OF SUCCESS FACTORS FOR INNOVATIVE START-UPS

The analysis of critical success factors that influence success or failure of entrepreneurial activity is crucial for start-ups as well as for firms further proceeding in their entrepreneurial life cycle. Initially, all major success factors for start-ups will be identified. This will be followed by a specific analysis of external financing.

Identification of Success Factors

Which factors do start-ups consider crucial for their development? These highly relevant experiences from the questioned companies may provide valuable insight for other start-ups or future entrepreneurs. The answers given to this open question (multiple answers possible) have been grouped into the following success factors (Figure 2 shows the distribution of these success factors for Swiss start-ups):

- **External Financing** comprises answers such as “Seed Capital”, “Successful Financing Round” or “Business Angel Investment”. Due to the early stage in the entrepreneurial life cycle and due to the capital- and time-consuming activities it is essential to capitalize the company with external financing means to build up the young firm, to develop its products and to turn market-ready in the end. The financing must be sustainable and the company must successfully pass several, well-timed financing rounds (milestones).
  - **Internal Financing** can be relevant for two main reasons. On the one hand, a start-up’s very early positioning in the entrepreneurial life cycle means a far-reaching lack of track record. Therefore, a financing by the four Fs (Founder, Family, Friends, Fools) comes into primary consideration. On the other hand, somewhat matured firms may have already gathered some net income and use it for a first in-house financing.
  - **The Founding Team / Management** holds the responsibility for all business administration tasks. In addition to the corporate management staff itself, the team includes personnel with specific financial and controlling expertise. A motivated, qualified and experienced management team with the ability to push all processes from the product development stage and beyond have an important role. Moreover, they are also very capable of gaining and obtaining support from external financiers.
idea to the profitable end product is indispensable to bring the innovative entrepreneurial project to success. An appropriate compensation scheme is the prerequisite for attracting potential employees and can set effective incentives for fostering the entrepreneurial success in the end.

- Qualified Scientific Personnel—a team of highly specialized, internationally cross-linked experts—is essential for scientifically evaluating and executing a product development plan. Just one example: in the context of biotechnology, this may be designated medical scientists, doctors, molecular biologists, chemists, and pharmacists. With regard to the compensation scheme the same holds valid as mentioned for the „Founding Team / Management“

- The success factor Technology / Product refers to the quality of existing products or products to be developed, the composition of the product portfolio, and the implementation of state-of-the-art technology. Ultimate evaluation criteria are the emergence of a marketable product and the “correct” timing of the market entry.

- An attractive and convincing Business Plan is mandatory for the structured initiation of innovative entrepreneurial activity. Creating a plan is not only in the best interest for a start-up’s activities, but also one of the very few sources of information for potential investors in the early stages of the entrepreneurial life cycle.

- Execution of the Business Plan: In addition to the mere existence of a business plan, it comes to its execution, which is a holistic process. It is interesting that especially managers and entrepreneurs from high-tech industries mentioned important character traits such as discipline, endurance, persistence, and passion (see also Kuratko, 2009; 2011) in that context.

- The survey results prove the importance of Market / Demand in a sense that the entrepreneurs must spot or find market niches. A matured market may not be present at all while the firm’s activities are developing already.

- When it comes to the point where the start-up has a promising product in its pipeline that is to be launched in a potentially attractive market, corresponding and effective Marketing measures need to be undertaken. Acquiring customers and cultivating customer relations are crucial success factors.

- The current Economic Situation plays a major role for the success of start-ups in terms of their sales and with regard to their efforts in attracting venture capital. Entrepreneurs report recessions to be an obstacle in finding the capital they need and in getting access to sales markets. This became obvious during the financial crisis in 2008/2009 and its aftermath (Deakins, North, & Bensemann, 2015; Harrison & Baldock, 2015).

- The selection of a start-up’s Location can definitely be essential for its success. The proximity and efficient access to potential investors (i.e. to financing sources), corporate partners, future customers, and highly qualified personnel can be vital. In the same context, educational institutions such as universities and other research facilities are to be mentioned. Industry clusters as the industrial location of a business can also provide an infrastructural advantage—in Switzerland for example “Bioalps” in Geneva, “Zurich MedNet”, or “BioValley” in Basel. Entrepreneurs are not least attracted by capital, i.e. by the presence of venture capital firms, in global clusters such as Silicon Valley, the Massachusetts Route 128 around Boston, and recently Bangalore in India, “Silicon Wadi” around Tel Aviv in Israel, or the Shenzhen Hi-Tech Industrial Park in China (see also Pan, Zhao, & Wójcik, 2016; Falik, Lahti, & Keinonen, 2016).

**Figure 2. Success Factors of Swiss Start-ups**

72.0% of the young entrepreneurs pointed out that funds obtained from outside the firm are a crucial success factor for the development of their start-up. External financing has therefore been clearly the most frequent answer. On the second and third places appear technology/product (62.3%) and founding team/management (47.2%). Most of the other success factors had been mentioned in a range of around 10 to 25%. Some of them may simply be linked too far into the future: the demand (25.4%) will come later for some firms, e.g. in biotechnology after about 12 to 15 years; as a consequence,
marketing activities (14.6%) are not among the top mentions.

The negligence of the location is surprising at first sight only. There are just a few start-up clusters in Switzerland (Geneva, Zurich, Basel) and the country is small with just minor geographical distances. Even though there are some other differences, e.g. with regard to taxes, the country can almost be regarded as just one start-up location.

5. SPOTLIGHT ON EXTERNAL FINANCING: VENTURE CAPITAL

As the results from above indicate, the availability of external financing is regarded as the most critical success factor for the development of innovative start-ups. Due to this outstanding significance, more information on this special issue has been collected. Therefore, the entrepreneurs who received external financing were asked about the precise importance of this financing for the success of their start-up (Figure 3). Nearly all of the polled entrepreneurs received their external financing in the form of venture capital.

Figure 3. Significance of External Financing Availability

It becomes obvious: those entrepreneurs who did receive venture capital judge this source of capitalization as of outstanding importance. 85.8% consider the availability of venture capital as "very significant" or "significant".

However, the results also show that 9.1% regard the venture capital they received as just "slightly significant" or even insignificant. The reasons for this can only be hypothesized. Some entrepreneurs stated that they simply had small financing needs. In addition, a lower appreciation of the supplementary advantages of the venture capital they received may be a cause (see the following analysis).

Why did entrepreneurs return such a distinct verdict concerning venture capital? To find possible reasons, the entrepreneurs were asked about the relevance of several additional benefits they obtained from the venture capitalists (Figure 4). Again, multiple answers were possible.

- **Know-how.** Venture capital regularly comes with the investor's or the intermediary's expert knowledge. This includes general strategic and operational management experience (e.g. in finance, controlling, human resources, organization, marketing), special experience in launching a start-up, industry specific knowledge, and experience in research and development. Drawing on this kind of management support is very important for innovative start-up companies, not least because such companies are often run by engineers or scientists who lack sufficient business knowledge. In general, the know-how of investors is of constituent relevance in all stages of the business life cycle, with the extent of support tending to decline with the company's maturity. Support is especially needed in critical stages. Furthermore, the mental support by experienced investors must not be undervalued. Some entrepreneurs report especially on-site support of venture capitalists to be an effective measure of interaction (see also Bernstein, Giroud, & Townsend, 2016).

- **Networks.** Investors usually help start-up companies to get in touch with prospective customers, suppliers, consultants, media, and not least with potential new financiers.

- **Reputation.** The shareholding participation of a particular (e.g. prominent) investor can signal a start-up's attractiveness for further investors, and therefore for further financing.

- **Board Seat.** The attendance or, rather, active participation of experienced entrepreneurs or managers on a young firm's board of directors turns out to be invaluable for the overall innovative entrepreneurial plan in many cases. This holds true from a strategic, but also operational or even mental point of view.

Figure 4. Further Support by Venture Capitalists
The analysis of the data impressively shows the empirical fact: venture capital is more than the flow of capital. The combination of capital and know-how is indispensable for the vast majority of innovative start-ups (80.5%). Moreover, 59.0% agree with a certain benefit from the networking platforms they get access to through their financiers. The reputation that comes along with the readiness of venture capital firms to invest in certain companies is important for 38.1%, and 22.9% of the start-ups think they gain from the board membership of venture capitalists.

6. RE-THINKING THE DEFINITION OF VENTURE CAPITAL

What are the reasons for the above results? Why is that financing source, why is venture capital so important for young, innovative start-ups? Even more: why is it virtually the only possible financing source to develop something at the frontier of technological development, which is so tremendously important in developed countries like Switzerland and others, but also an upcoming hot topic in developing countries, for example in Asia?

The specific financing needs of innovative start-ups (Gompers & Lerner, 2006; Berkery, 2007; Bygrave & Zacharakis, 2009) are a result of their fundamental characteristics. Those in turn result from the goal of the firms: the execution of an innovative project.

Because of their age, the firms naturally cannot show profits yet; they rather generate negative cash flows. The earlier in their life cycle, the less comprehensive is their track record. Internal financing opportunities virtually do not exist yet. In addition, venture capital seekers basically do not have collaterals at their disposal that are acceptable for debt financing from banks. As a consequence, there is no credit standing, at least on a large scale.

Investors cannot expect distributions (e.g. dividends) at the beginning of their investment. Their profit expectations are rather based on a tremendous growth potential with regard to a start-up’s income. A return—in the case of success—can be expected after a holding period of the investment of not less than seven to ten years, in the case of a medical development not earlier than after ten to fifteen years, and then not as a dividend but as a capital gain at the investment exit. Possible profits from the expansion stage are serving to equalize losses from earlier stages. The growth potential itself has to be mainly judged by the entrepreneurial project’s degree of innovation.

The long-term character of innovative entrepreneurial activities accounts for the uncertainty regarding the success of the product idea. Even though this seems to be intuitively logical, some aspects of that connection shall be carved out:

- First, technological or scientific barriers can inhibit the development of a marketable product. The unsuccessful search for an active pharmaceutical ingredient to readiness for the market and market launch, are estimated at up to 800 million US-dollars, with the amount to be invested over 8 to 15 years. The market success of the initial idea is not foreseeable for a long time though. A project failure could lead to a total loss of the capital invested.

Innovative entrepreneurial activities are based on intellectual property. Intangible assets such as patents (and their ongoing protection) consequently have a high relevance (see also Haussler, Harhoff, & Mueller, 2012). Within innovative start-ups, their share of total assets is considerable. However, the valuation of intangible assets, especially during the initial period of a development process, is quite difficult, as the evaluation of their (future) benefit can only be accomplished with highly uncertain assumptions.

Under all these circumstances—in growth industries where entrepreneurial concepts are mainly based on just one or a few products—the effects of entrepreneurial decisions are especially grave with regard to the success or rather to the existence of a start-up.

Exceptionally large uncertainties in combination with high capital requirements lead to three specific needs that the funding of an innovative start-up must fulfil:

1. Developing an innovative product involves high cost. Accordingly, the financing needs are huge.
Smaller subsidies or self-funding do not fulfil these needs.

2. Because development processes take very long—as mentioned, in biotechnology, a time to market of 10 to 15 years is entirely possible—a long-term, sustainable funding is required.

3. In addition, a form of financing is needed where the investors do not make continuous demands. The capital as a scarce resource should primarily be used for research and development, and especially its highly skilled workforce.

Innovative businesses have special financing requirements, because developing an innovation until its readiness for marketing is a highly capital-intensive and time-consuming process. Venture capital is the only source of financing to match these needs. In the absence of collaterals and in times of negative cash flows, repayment cannot be promised and a borrowing of money is therefore impossible. Actually, demanding a promise to pay back liability funds from young entrepreneurs at the frontier of technological development could be considered somehow unethical. Listings on the stock exchange require a certain corporate history. Consequently, venture capital as off-market equity is the only chance of triggering innovative activity in most cases.

Additionally, the inalienable support of young firms with professional know-how through venture capitalists needs to be emphasized.

Along with the collection and allocation of capital, it is a core task for venture capital firms to offer consulting services and comprehensive management support to their portfolio companies. This can start with any kind of support in business administration such as financial, sales and operations planning, proceed with the search for qualified personnel, and even arrive at the implementation of a whole controlling system or the joint discussion of the firm’s overall strategy. Venture capitalists can also be viewed as platforms for networking among their various portfolio firms. The use of management support is of central significance for innovative start-ups, because—as mentioned above—entrepreneurial activities are often launched by versed technicians and scientists who may not possess sufficient knowledge in business administration. The extent of supportive activities by venture capital firms drops while start-ups are evolving on the entrepreneurial life cycle. Besides, venture capitalists are portfolio managers: on the one hand, they sort out "lemons"; on the other hand, their outstanding portfolio companies require and deserve an appropriate, intensive assistance to foster their development with a certain sustainability.

Accomplishing this huge portfolio of core tasks requires a high level of professional and management expertise, as well as a distinguished entrepreneurial judgement. The intermediaries of venture capital bear a high joint responsibility with start-ups on their way to success. Their efforts are normally remunerated by various components: an agio on the capital invested (up to 5%), periodical administrative expenses (usually between 2% and 3% of the total capital contribution per year), and a share in the profits of their portfolio companies. This profit share is typically between 10% and 20% and goes to the fund. Sometimes, the investors receive some fixed basis return on investment of around 6% to 8% prior to that.

Beyond that, the managers of venture capital firms regularly have direct shareholdings in their portfolio start-ups. Considering these quite effective incentives, they should have a vital interest in helping the start-ups in their portfolio to bring their innovative entrepreneurial activities effectively to success. After a successful investment exit, the sales proceeds are distributed to the fund investors after deducting a share in the profits for the venture capital intermediary. The same applies in case of dividends during the duration of the engagement.

Bringing all this together, the prevailing definition of venture capital should be critically examined. In most management textbooks, the definition solely focusses on a financial cash flow/investment activity, similar like the widely used EVCA (European Private Equity & Venture Capital Association) definition:

“Venture Capital is, strictly speaking, a subset of Private Equity and refers to equity investments made for the launch, early development, or expansion of a business.”

The empirical results indicate that this common and widespread definition of venture capital should be revised in a more differentiated and comprehensive way. By re-thinking that definition, the view of venture capital and private equity, respectively, as a sole (high-risk) capital flow, should be shaped in a manner that takes the needs of young innovative start-ups into account:

“Venture Capital is the allocation of capital and know-how. It is a conceptual financing source for start-ups at the frontier of technological development, which satisfies financial and other entrepreneurial needs. As a whole financing concept, venture capital matches the vital needs of young, growing firms.”

In brief: “Venture Capital is an integrated concept for the allocation of capital, know-how and other vital benefits among start-ups at the frontier of technological development.”

Because of their special environment, start-ups need high, long-term, sustaining financing with no ongoing demands of investors. Moreover, a transfer of capital without the additional support that is indispensable for highly complex innovative activities cannot lead to the desired effect for the economy.

7. CONCLUSION AND OUTLOOK

Young, innovative firms deal with a complex system of challenges and therefore have demanding success factors. The most important one is external financing in the form of venture capital. It is virtually the only source of finance and support for innovations of high economic relevance. Therefore, a proper definition as the basis for a sound understanding of this source of funding is crucial. At present, there is a knowledge gap among graduates and even some financial managers and policy-makers. However, the topic of venture capital is vital to the prosperity of future generations in many countries around the world. Higher attention about it needs to be raised, which includes the fundamental explanation that venture capital is not solely about investments from the financial industry,
but rather about supporting young innovative start-ups that play a major role in our economic system. This paper is proposing an adjusted venture capital definition, which should serve as a basis for an increased awareness about the importance of supporting start-ups with more than mere cash flows.

The limitations of this paper and research are basically made up by its geographical radius at this moment. It is necessary to extend the questioning to further countries. This should not only comprise other developed countries, but also developing countries e.g. in Asia, South America and Central Europe for instance. By doing that, the findings of this research paper can be underlined, validated stepwise and increasingly generalized. In a next step, future research should examine peculiarities with regard to local venture capital scenes in order to find ways to influence the success factors. This has to include an investigation of existing or non-existing economic policies in specific countries that try to deal with innovation and start-up matters. In this respect, the lack of data or even of effectively operating venture capital associations who may serve as a fundament of data collection still is a widespread and crucial problem.

REFERENCES: