

# Enemies of Innovation - How to Improve Organizational Success and to Create Innovative Ecosystems?

Tobias Göllner | Julie Kainz

## I Introduction

The capacity to innovate immensely impacts the ability of companies and regions to continue competing in their future market (Koc and Ceylan 2007). As technological advancements and thus consumer expectations change rapidly, today's challenge is not just to keep up to date but to actually surpass competitors with new and creative ways to meet yet unknown demands.

This is especially important for long-established firms that might have lost their ability to think outside of their usual boundaries. However, regions and cities also take part in the race to become the next hub of innovation in order to stimulate their economic growth and prosperity.

The following will address the issue of how companies and regions can become centers of innovation and progress.

## II Organizational architecture co-determines innovational capacity

### 1. Barriers to innovation

The most innovative employees will not produce a single disruptive idea if suppressed by the corporate climate that surrounds them.

Innovation should become an imperative from the bottom to the top of an organization. A lack of commitment on the part of top management not only affects all employees' motivation directly but diminishes the organization's ability for innovation and future growth through multiple channels.

First, a lack of organizational dedication to innovation activities is usually reflected in an inadequate reward and incentive system, which might signal low appreciation and trust, thereby greatly discouraging employees from innovating. Behavior that is rewarded and appreciated, however, will more likely be repeated (Martins and Terblanche 2003).

Even more than the passive impact of inappropriate reward systems, punishment for failures actively hinders innovation activities. A negative attitude towards risktaking and mistakes embedded in the organizational culture strongly affects employees' disposition to think beyond their general boundaries (Feyzbakhsh, Sadeghi and Shoraka 2008; Martins and Terblanche 2003). Risk and failures, however, are the basis of entrepreneurship and an inevitable component of innovative solutions, whose success is essentially based on creating the previously unknown (Andrews 2006). An efficient and well-run organization does not always equate to a creative and innovative business.

Another consequence of a poorly committed circle of senior executives (C-Suite) is an insufficient allocation of resources to the generation and implementation of ideas. Innovation, however, needs time and capital (Andrews 2006; Feyzbakhsh, Sadeghi and Shoraka 2008). Furthermore, entrepreneurial employees may feel undervalued and that their ideas will be hard to incubate if inadequate funding is dedicated to their initiatives. Innovative staff may also feel hindered if employers focus solely on fostering efficiency within the current system and on the additional costs of fostering innovation (Martins and Terblanche 2003).

Heavy bureaucratic structures and steep hierarchies create real barriers to the expression of unconventional ideas. An organization's structure has a strong impact on its level of innovation activity as it "seems to emphasize certain values which have an influence on the promotion or restriction of creativity and innovation in organizations" (Martins and Terblanche 2003).

Strict command structures usually impede a free flow of information between the source of an idea and the top management. This affects both the speed and rate of successfully implemented innovations. As decision-making and budget allocation are centralized at the top, a vast number of ideas might get lost on their way up (Feyzbakhsh, Sadeghi and Shoraka 2008). Strict hierarchies can also eclipse the visibility of talented employees. It can reduce the quality-of-worklife for an organization's potential innovators, and result in an organization shedding its best talent in order to preserve hierarchical integrity.

Falsely incentivized and bureaucratically-rooted organizational structures can also "cork" information flows between units and teams within businesses. This is fatal for innovation because it isolates thinking and the exchange of ideas into silos, limiting interdisciplinary thinking. Poor communication activities do not just negatively affect the acceptance of changes among staff (Koc and Ceylan 2007); the likeliness of breakthrough ideas decreases as opportunities for more diverse views and approaches resulting from cross-functional idea and knowledge sharing remain unexploited (Koc and Ceylan 2007; Martins and Terblanche 2003).

## **2. Organizational architecture and culture - Building an innovation-ecosystem from within**

Organizational architecture and culture greatly foster, or hinder the generation and implementation of innovation from within companies. The way these structures influence information flow is the key to gauging if an organization has built-in barriers to innovation.

Flexible and flat hierarchies favor spontaneous ideas and creativity (Martins and Terblanche 2003). A free flow of ideas and knowledge across teams and departments will activate the creative mind naturally. Accordingly, appropriate communication channels and regular opportunities for cross-functional co-working are essential to stimulate innovation activities (Koc and Ceylan 2007; Martins and Terblanche 2003). Furthermore, an integration of corporate functions beyond R&D will reduce resistance to change among staff and hence accelerate their implementation (Koc and Ceylan 2007).

A culture of common knowledge and co-creation must thus be developed. Especially in large companies, however, informal communication networks are frequently missing or not sufficient to spread knowledge across the organization. Google realized the need for network and communication opportunities and thus introduced among other things, Google Cafés – informal interaction spaces intended to trigger communication and exchange among employees from different teams (Forbes 2013a).

Likewise, institutionalized communication and idea generation procedures may help to prevent thoughts from getting lost, set a sign as to the importance of innovation and invite all employees regardless of their hierarchical level to share their views (Koc and Ceylan 2007). Some corporations have already recognized the value of such an internal "Market for Ideas" (Hamel 1999) and try to build their own ecosystems of innovation accordingly.

Ericsson, a global telecommunication's technology provider, has set up an internal brainstorming and venture capital space called Innova Box for this purpose. Employees are free to share their ideas with an online community and can do so easily. Others can directly provide feedback, appreciation or further ideas and use other employees' knowledge for their own purposes. The best ideas are granted funding and time for their further pursuit by an internal panel (Fast Company 2013).

Another approach for the stimulation of innovation is the introduction of regular workshops or idea labs aimed at bringing together employees from diverse teams, levels and backgrounds and providing them with the right setting for free idea generation (Hamel 1999). These internal drivers of innovation will also increase the speed at which ideas are being transformed into actual innovation – a consequence that will further increase employees' motivation (Accenture 2008; Koc and Ceylan 2007; Martins and Terblanche 2003).

Besides promoting internal innovation activities, companies should take a look outside to spur their innovation initiatives. A process called Open Innovation encourages companies to include external partners in their innovation process through collaborations and idea-sharing (Laursen and Salter 2006). As "innovation is being democratized" (Von Hippel 2005), research departments are not the sole source of ideas and creation anymore. Customers, suppliers, universities and other industry partners can provide useful insights on future needs, trends and possibilities. Even competitors can become valuable co-creation partners when resources complement each other (Laursen and Salter 2006). Based on the same ulterior motive, the Design Thinking method introduced by IDEO is centered around human needs and desires meeting both technological and economical requirements at the same time (Brown 2008).

Another very interesting concept in this context is the mutually beneficial collaboration of young start-ups, which bring in their fresh and entrepreneurial mindset, and long-established companies, which are able to contribute the necessary resources to realize projects.

Besides establishing promotional processes, a culture "which encourages, supports and directs idea generation activities" has been found to be "one of the most important determinants of innovation" (Koc and Ceylan 2007). In order to emphasize a commitment to innovation within an organization, resources need to be freed and especially dedicated to the implementation of novel ideas.

One way of demonstrating such commitment is the appointment of a senior-level executive for innovation. Innovation and creativity thereby become a dedicated part of the company's strategy with separate budgetary responsibility (Accenture 2008).

Yet not only the allocation of budget demonstrates commitment; time is a valuable resource as well. Accordingly, companies like Google (The New York Times 2014), Shell (Hamel 1999) or 3M invite their employees to spend a specified amount of their working time on their own undertakings thereby giving "talented people the time and resources to prove the worth of their ideas" (3M 2014).

Another important aspect of such an innovation-friendly climate is the way risks and failures are handled (Feyzbakhsh, Sadeghi and Shoraka 2008; Martins and Terblanche 2003). Innovation is always inevitably coupled with risk as it presents new and unknown ground (Andrews 2006). Innovation is believed to be an iterative process of experimentation, and initial perfection should

not be expected. Quick detection and correction of failures, however, is crucial (Harris and Junglas 2013).

Last but not least, an organization's culture is also strongly connected with its reward and incentive schemes. Among companies in Silicon Valley, for instance, it is very common to grant employees stock or options regardless of their level to trigger their ambition to perform (Harris and Junglas 2013). Interestingly, however, extrinsic rewards (i.e. monetary or career incentives) have been found to be less important to intrapreneurs (employees who act like entrepreneurs but within the boundaries of their organization (De Jong and Wennekers 2008)) than intrinsic rewards like peer recognition or autonomy (Harris and Junglas 2013). A fleet processing of ideas within the organization and prompt feedback will further enhance employees' motivation by demonstrating that suggestions are valued and taken seriously (Koc and Ceylan 2007).

After having built a structure and culture of innovation, entrepreneurial individuals and teams are needed to fuel creativity among staff.

### **3. Fostering a 'creative class' – Recruiting a creative mass of intrapreneurs**

In the process of designing an innovative organization, business leaders will not just have to build up appropriate structures and nurture a culture of ideas and innovation, but ask themselves which employees are needed to further increase the capacity of innovation within their organization. Employees are the heart of any organization and thus immensely influence the company's overall success.

As innovation capacity can be increased by the combination of different perspectives, views and ideas, a diverse workforce bringing together employees from various interests and backgrounds will positively influence each one's ability to generate ideas (Harris and Junglas 2013; Martins and Terblanche 2003).

Despite the notion that diversity will trigger innovation, typical characteristics exhibited by intrapreneurs can be observed. Intrapreneurs act more proactively, seeking challenges and opportunities deliberately and on their own initiative (De Jong and Wennekers 2008). This is closely related to their attitude toward changes and risks: Intrapreneurs are not afraid of leaving their safe and predictable ground. Very important in this context is their flexibility and adaptability in moments of uncertainty (Forbes 2013b). Innovators "know how to pivot" (Forbes 2013b) and thus are less reluctant to change. Furthermore, they exhibit a strong inner quest for achievement and creation, which actually drives them to search for new challenges and risky ventures (Rep 2004). They are willing to work harder and longer than other employees simply out of their enthusiasm for achievement and creation (Harris and Junglas 2013). Additionally, innovators demonstrate a greater ability to recognize opportunities, which is an immense advantage as opportunities are the starting point of innovation (Harvard Business Review Blog Network 2013). It is these traits and characteristics that make employees more capable of innovation than others. They think beyond the usual scope and connect the previously unconnected.

It is now the task of companies not just to attract and recruit these potential intrapreneurs, but to retain them by creating a supportive and gratifying working environment as outlined in the previous section. Otherwise, the most innovative talents will leave the company faster than expected as they have a higher tolerance for change and employment insecurity.

### **III An ecosystem of innovation**

Successful companies and start-ups in particular are the main drivers of economic growth and innovation activity. Their impact on a region's wealth is enormous (AustrianStartups 2013). According to a survey commissioned by the "Junge Wirtschaft", every newly established enterprise created on average 2.4 jobs directly and a further 5.3 jobs indirectly in Austria 2013 taking into account purchasing power effects and preliminary interrelations. In the long term, these companies will even have realized a total added value of €9.9 billion by 2024 (WKO 2013). Correspondingly, regions and cities are eager to become the next great start-up hub. A variety of factors influence a region's attractiveness to start-ups and innovators. Following is an analysis of what are currently some of the most vibrant hubs of innovation. Parameters of comparison have been identified with the aim of revealing a recipe for building an ecosystem for innovation. These parameters include governmental measures such as subsidies and incentives, as well as regulations and bureaucratic structures; the ease of access to funding and capital; and the intensity of a region's network, including other start-ups, influential, large corporations and regular networking opportunities and institutions like co-working spaces or accelerator programs. The existence of sophisticated universities and research institutes will be investigated as well, given the importance of fresh skills and talent to a market's growth.

The cities and regions of Vienna, Berlin, London, Dublin, Silicon Valley, Shanghai and Tel Aviv will be analyzed according to their attractiveness to start-ups along the parameters outlined above.

Silicon Valley, Tel Aviv, London and Berlin are ranked among the top 20 start-up locations within the Startup Ecosystem Report 2012 released by Startup Genome and Telefónica Digital (Startup Genome and Telefónica Digital 2012). Vienna emerged as Europe's leading start-up city within the Innovation Cities Global Index 2012/2013 released by the global innovation agency 2thinknow (2thinknow 2013) and Dublin achieved rank 14 among 142 countries within the Legatum Prosperity Index in terms of "Entrepreneurship & Opportunity" (Legatum Institute 2013). China's fast-moving development and growth was fueled by the economy's strong position in technological advancements and Shanghai played a leading role in driving innovation (StartupItalia 2013). These locations serve as role models for building hubs of innovation with their individual strengths and advantages.

#### **1. Vienna**

Vienna has transformed into a vibrant start-up location and the hub of central and eastern Europe's community (AustrianStartups 2013). Runtastic is only one exemplary success story made in Austria. Founded in 2009, the start-up has developed its product into one of the world's leading mobile applications for sport's tracking. The international publishing house Axel Springer even aimed at securing its position in the digital market by acquiring a majority share of 51% in the fitness application (Axel Springer 2013).

This potential has not been gone unnoticed by government authorities as well. The promotion of start-ups and innovation has become an important part of the national agenda. Austria Wirtschaftsservice GmbH, for instance, set up a variety of programs to support start-ups financially. It has been noted, however, that these subsidies frequently do not meet the actual requirements of start-ups and that the Austrian regulatory environment in general is still rather unfavorable for young enterprises (AustrianStartups 2013).

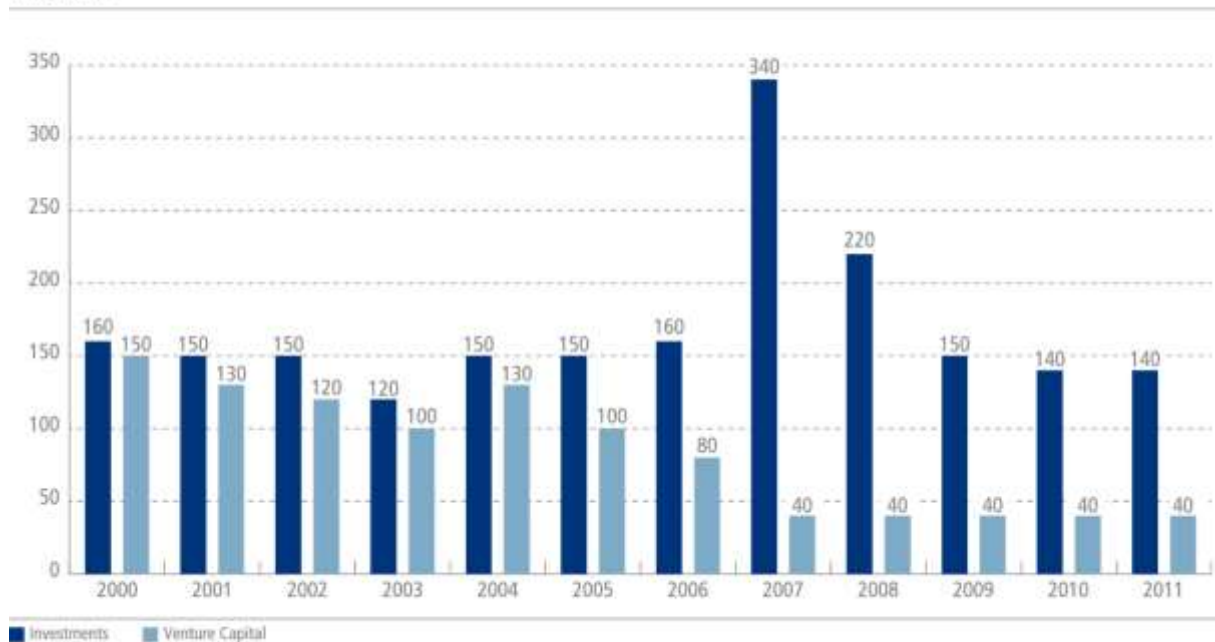
This also ties in with the rather conservative Austrian investment behavior, which has spurred a call for tax incentives on private investments to stimulate a mobilization of risk capital (AustrianStartups 2013; Speedinvest 2013). The Austrian Angel Investors Association (AAIA) co-founded by Johann “Hansi” Hansmann (probably one of the most active angel investors in Austria) is one of the most ambitious and successful institutions for the promotion of angel investments (investments by an affluent individual, who provides capital for a business start-up) in Austria.

Speedinvest, a rather young fund set up in 2011 in Vienna (Gründerszene Datenbank 2014), has recognized this funding gap as well and created an angel fund specifically targeted at early-stage companies in central and eastern Europe. Another example for successful start-up promotion made in Austria is i5invest, a Vienna-based incubator focusing on online and mobile businesses.

The supply of venture capital is still rather unsatisfactory as well. As displayed in the chart below (Figure “Venture Capital in Austria”), venture capital accounts for only a small percentage of total private equity in Austria.

#### Venture Capital in Austria, 2000-2011

Millions of €



Source: AustrianStartups, CEE Startup Ecosystem 2013. Original data by avco, europe.eu, Speedinvest and startupwiki.at. (Also available online at <http://www.austrianstartups.com/ecosystem>, accessed April 27, 2014)

Despite some regulatory and financial hurdles, a dynamic community has evolved. Internationally recognized events like the annual Pioneers Festival and a strong network of about 30 incubators, hacker- and co-working spaces provide a nurturing environment for start-ups and entrepreneurs (Borras 2014).

Concerning a continual inflow of fresh skills to the market, Vienna is not just attractive to young professionals from abroad but constantly produces new talent at its own education institutions. The University of Business and Economics Vienna (WU), for example, is placed 25th in the Financial Times Global Masters in Management 2013 ranking. Nevertheless, the Austrian Startups Report 2013 (Speedinvest 2013) revealed that there is still a perceived need to catch up in entrepreneurship-specific teaching. A respective political agenda and future investments in education will hence play an important role in Vienna’s future position as an innovation hub.

## **2. Berlin**

Berlin is shaped by a culture of creativity, change and diversity. "Berlin feels like a startup itself" (Startup Genome and Telefónica Digital 2012). It is the city's unconventional flair coupled with an affordable infrastructure that fuels Berlin's community. Start-ups are free to choose from a myriad number of net- and co-working opportunities and there is probably an event every night to attend. Rocket Internet, the world's largest internet incubator with a reference portfolio of over 100 companies, has also chosen Berlin as its place to be.

Yet the most prominent example of a Berlin-based start-up success story is Soundcloud, a music-sharing platform that has an estimated value of approximately \$700 million, following a major investment by Institutional Venture Partners (Gründerszene 2014). The city influenced the founders' decision as to where to set up operations (Startup Genome and Telefónica Digital 2012) and they decided to make Berlin instead of Stockholm their home. Soundcloud's success was also a major step toward Berlin's becoming an international start-up hub.

Google recognized Berlin's great potential and recently invested in the start-up and technology campus called "The Factory" thereby gaining direct access to potential groundbreaking innovations (Gründerszene 2012).

This reputation also accelerates the attraction of skills and talent from abroad interested in entrepreneurship and innovation. Berlin is famously known as a hub of creative minds and lateral thinking. In addition, the city has developed its own breeding ground for skilled people. The Technical University's Centre for Entrepreneurship, for instance, not only equips future entrepreneurs with facts and figures, but also supports the planning and application of business ideas (Technische Universität Berlin 2014).

A strong community and a skilled workforce are not the only building points of a start-up ecosystem. Germany has notoriously been known for its bureaucratic hurdles. Especially the employment regulations placed on non-EU citizens are considered to be major disadvantages for start-ups in the city (Ripsas, Schaper and Nöll 2013). German immigration regulations for non-EU citizens impact both the location-preferences of start-up businesses, as well as their ability to staff companies in Germany.

Attracting capital appears to be difficult in Germany according to the German Startup Monitor 2013, an online survey of 454 German start-ups. Of start-ups questioned, 70% state that obtaining venture capital is challenging in Berlin. It takes 6.5 months on average, per financing round, to obtain capital. This is almost unbearably long in the global start-up scene (Ripsas, Schaper and Nöll 2013).

In contrast, concerning governmental subsidies, funding and support, Berlin offers a relatively wide range of initiatives which are profiled in the "Förderfibel", published annually by Investitionsbank Berlin (IBB) (Investitionsbank Berlin 2013).

## **3. London**

In the Startup Ecosystem Report 2012 published by Startup Genome and Telefónica Digital, London has been appointed Europe's number one location for entrepreneurs (Startup Genome and Telefónica Digital 2012).

The government strongly supports the city’s development. Tech City UK, a technology cluster located in East London, has been one of the government’s most ambitious projects for promoting London as an innovation city (London and Partners 2014). Start-ups benefit from tax breaks, advisory services and a large network of companies. In addition, setting up a business is a comparably easy process, fully automated online and feasible within just a few minutes (Startup Genome and Telefónica Digital 2012).

In terms of capital provision, London lacks ample angel and micro-venture investments (Startup Genome and Telefónica Digital 2012). Nevertheless, raising money has improved tremendously in recent years thanks to seed funds like “#1seed” (Venturebeat 2014), Seedcamp or Seedrs.

The most important asset of the city’s start-up ecosystem, however, is its strong community and networking opportunities with almost 60 accelerators, incubators, co-working spaces and other community institutions (TechBritain 2014). The Google Campus, for instance, enriches London with an incomparable hub for collaboration, co-working, events and networking.

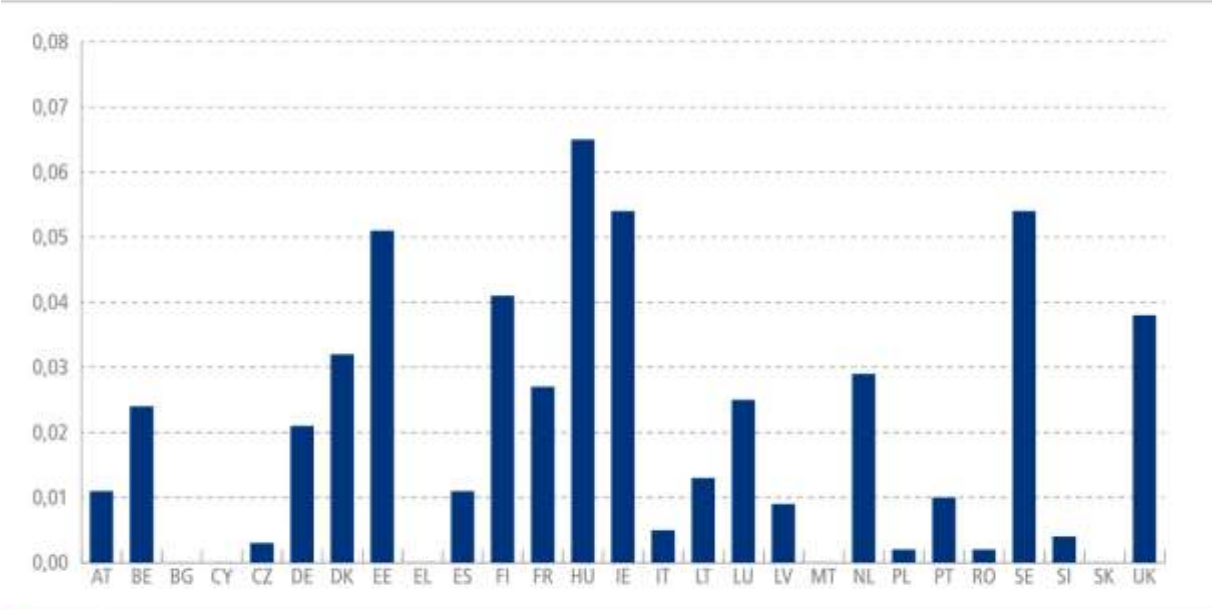
**4. Dublin**

Ireland has attracted a lot of attention since becoming the European headquarters for some of the world’s most powerful firms, such as Google, LinkedIn and Twitter. It is the country’s regulatory environment including very low corporate taxes that makes Dublin an extremely attractive business location (Enterprise Ireland 2012).

Besides an attractive tax environment, Ireland is renowned for its ease of raising capital offering the third highest level of venture capital investments within the European Union (see Figure “Total Venture Capital Investment”).

**Total Venture Capital Investment, 2012**

as % of GDP; available EU countries



■ Percentage of GDP

Source: European Commission, Venture Capital, 2013. Original data by EVCA and Eurostat. (Also available online at [http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index\\_en.htm](http://ec.europa.eu/enterprise/policies/finance/data/enterprise-finance-index/access-to-finance-indicators/venture-capital/index_en.htm); accessed April 27, 2014).



Angel investments are even further boosted by the country's tax incentives granted to start-up investors (Enterprise Ireland 2012).

Furthermore, collaborations between large multinationals and agile start-ups have the potential to initiate actual technological leaps (Dublin City Council and Dublin Chamber of Commerce 2013).

Additionally, Dublin-based start-ups benefit from an increasing supply of incubators and accelerator programs. Three of Europe's top eight technology accelerators are based in Dublin, namely NDRC Launchpad, Propeller Venture Accelerator Fund and Startupbootcamp (TechCocktail 2011).

Furthermore, the Irish government is well aware of the importance and potential of Europe's youngest workforce, and a annual investments in education by Irish government authorities have exceeded the European average by more than half (Enterprise Ireland 2012). With its education institutes delivering continual streams of highly skilled employees and future entrepreneurs, Dublin exhibits high potential for leading the future European start-up scene.

## **5. Silicon Valley**

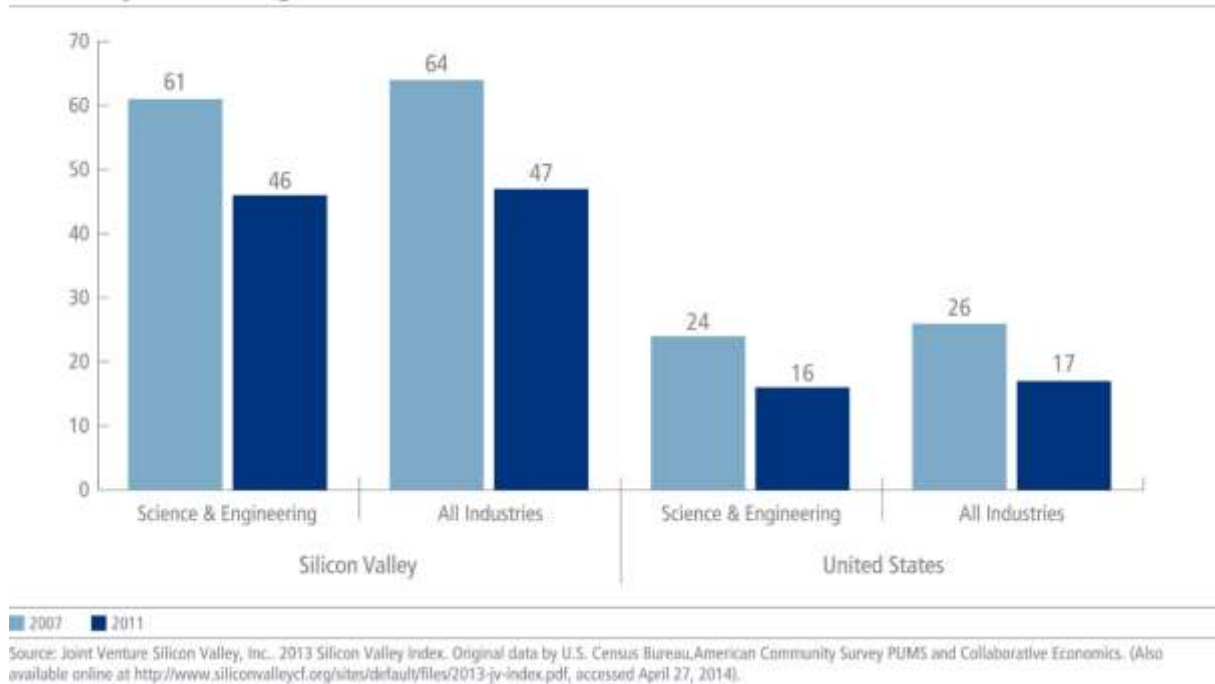
Silicon Valley has been hyped as the start-up and innovation Eldorado. Other regions are trying to decode its success factors and it almost became a brand itself with replications like "Silicon Beach" in Los Angeles or Berlin's "Silicon Allee". This hype is to some extent justified by an impressive list of highly successful companies including Google, Apple and Adobe which have their roots in California's innovation hub. Currently, countless start-ups nestle among these global tech giants hoping to be nurtured by the region's ecosystem. Silicon Valley's community clearly has major appeal for young companies.

Yet the most important asset Silicon Valley has to offer for start-ups is probably its highly educated, diverse and success-driven workforce (Harris and Junglas 2013). Graduates of one of the most prestigious universities, Stanford University, have alone produced around 40,000 companies since the 1930s and 25% of those who graduated after 1990 have established a business within just 30 kilometers of their university (Eesley and Miller 2012).

Furthermore, the region's reputation entices talent and experts worldwide to settle in the Valley, especially in the fields of engineering and science (Joint Venture Silicon Valley, Inc. 2013). As emphasized by the table below, the share of educated foreign employees is remarkably higher in the region of Silicon Valley than in the rest of the United States.

## Percentage of employed population with BA or higher that is foreign-born, 2007 and 2011

### Silicon Valley vs. other US regions

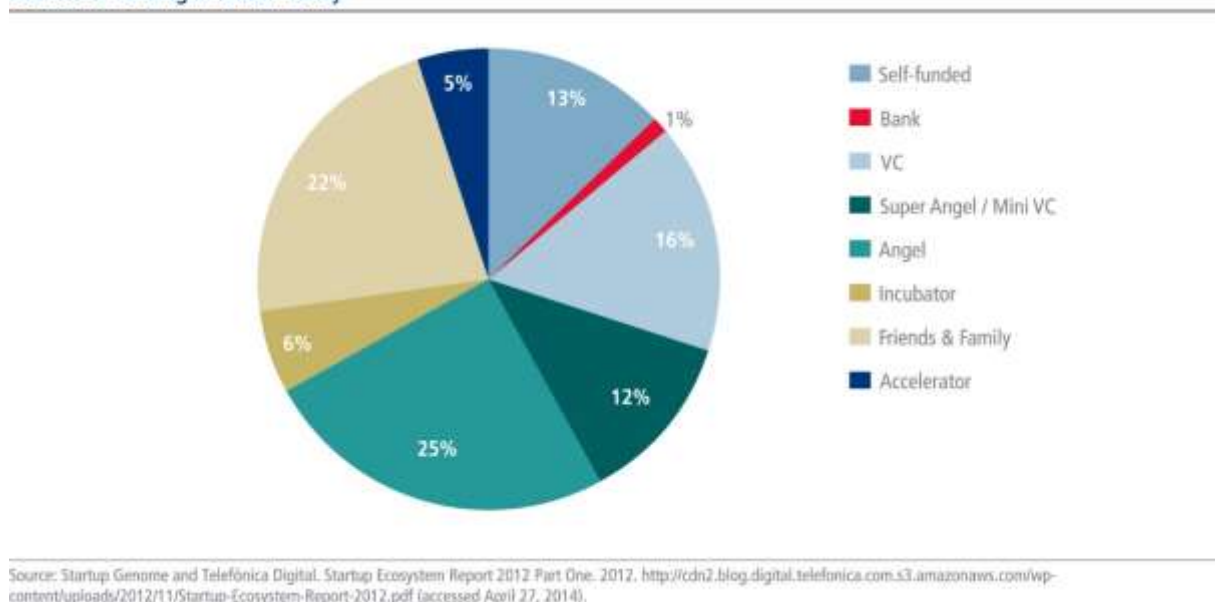


These numbers are especially impressive given the rather limited number of long-term visas available in the United States. Against this background, an initiative for the introduction of a special “Startup Visa” has been launched in Silicon Valley.

It has also been mentioned that there is still room for adaption regarding start-up-friendly taxes and public policies. Especially the introduction of preferential tax treatments for investors as well as the promotion of loans for pre-profit taxes are highly desired (Silicon Valley Bank 2013).

In terms of raising capital, angel investments appear to be the most important source of capital in Silicon Valley. This correlates with the recent immense increase of angel investments of 90% in the region (Joint Venture Silicon Valley, Inc. 2013).

### Sources of funding in Silicon Valley



StartX, an accelerator program located in Silicon Valley, specifically supports Stanford University students, faculty and alumni in their entrepreneurial activities with funding and mentorship (StartX 2014).

Venture capital, by contrast, accounted for only 16% of all investments in 2013. These numbers confirm the common notion that raising venture capital is a rather difficult process in Silicon Valley due to the extremely high competition (Startup Genome and Telefónica Digital 2012).

Major obstacles for start-ups are the high rents and housing prices, which subsequently increase the average wage level in the area (Joint Venture Silicon Valley, Inc. 2013). In particular, very young companies with limited capital will struggle to survive in this environment.

## **6. Shanghai**

With more than 600 incubators, tech parks and accelerators, Shanghai does not have to shun comparison (Techcrunch 2013). There is definitely a vital community existent in Shanghai and governmental authorities are eager to further stimulate it.

The Fengxian District is just one ambitious governmental project. Designed to attract overseas returnees to launch their business in the area, the program offers incentives like free or subsidized office and housing spaces (Boost New Media and Boost Agile 2012).

In addition to encouraging well-educated Chinese living abroad to return, Shanghai is also building up its own educated elite. Institutions like Fudan University and Jiao Tong University have become internationally recognized for the high quality of their teaching and research.

Investors have noticed the city's ambitious aspirations and high potential. Venture capitalists and business angels are providing a steady flow of capital and investing heavily in diverse industries (Forbes 2011). Strong competition between venture capitalists and Chinese corporate investors for the best deals further fuels the inflow of capital (The Wall Street Journal 2014).

Networking events are another very important part of the Chinese start-up community, especially given the fact that the Chinese culture attaches great importance to trust building in (business) relationships. Techyizu is one of the most important supporters of the start-up community, hosting regular events on technology, innovation and entrepreneurship (Techyizu 2014).

Apart from numerous start-ups, Shanghai hosts some of the most influential international corporations including Google and Siemens. These global players can greatly assist small start-ups with their experience, networks and resources.

A major detriment of innovating in Shanghai is the high risk of intellectual plagiarism in China. Protecting intellectual property rights is frequently too costly for young start-ups, and they feel simply powerless in seeking justice when their rights are violated (Where to Startup 2012). The enforcement of law will continue to be a major task for China's government if it wants to attract foreign investments.

## 7. Tel Aviv

Israel established itself as “Startup Nation” (Senor and Singer 2012). With the highest density of start-ups worldwide and more companies listed on the NASDAQ than all other European countries together, Israel clearly leads the way (Senor and Singer 2012). The Startup Ecosystem Report 2013 even ranks Tel Aviv as second most attractive location, right after Silicon Valley (Startup Genome and Telefónica Digital 2012).

Israeli culture, shaped by a strong military presence, is what caused Tel Aviv’s rise, helping it become one of the most important locations in the global start-up scene.

Tel Aviv has a well-established community and favorable support systems making it a highly attractive location for local and foreign start-ups. Manifold incubators and accelerator programs emerged in the city and the government actively hosts several events and competitions throughout the year (Tel Aviv-Yafo Municipality 2013).

The country’s strong investment landscape clearly represents an attractive playground for start-ups as well. Based on the number of inhabitants, more than twice as much venture capital has been invested in Israel than in the United States in 2008 (Senor and Singer 2012). International investments already represent an important share of this venture capital. Almost 20% of the 70 funds currently active in Israel are headquartered abroad (ArcticStartup 2011).

The country’s attractive investment opportunities have also been recognized by the world’s leading technology corporations and half of them have made major acquisitions or set up their own innovation centers in the city (Senor and Singer 2012). Finding strong partners for collaboration in Tel Aviv should not be too difficult given the wide range of choices.

The further sponsorship of Israel’s position in the international start-up community has become a major priority of the local government. The Municipality of Tel Aviv has recognized the city’s great economic potential and recently promulgated a comprehensive action plan for 2013/2014.

The attraction of international talent and foreign investments are clearly in focus (Tel Aviv-Yafo Municipality 2013). In this sense, the government’s Startup Visa initiative is intended to greatly simplify the process of residence permits for foreigners aiming to set up or work for a start-up (Tel Aviv-Yafo Municipality 2013). Moreover, measures such as municipal services targeting foreigners, the installation of bilingual signs or free Wi-Fi-access throughout the city will transform Tel Aviv into an international hub of innovation (Tel Aviv-Yafo Municipality 2013).

International talent is drawn to the city because of its attractive education services. The Tel Aviv-Yafo Academic College, for instance, set up a study and coaching program aimed at providing future entrepreneurs with practical business know-how and experiences (Tel Aviv-Yafo Municipality 2013).

## IV Lessons learned

Both companies and regions have recognized the need to accelerate their innovation activities.

Business leaders must now reorganize their processes and structures in a way that supports intrapreneurs in their creative work. Flat and fast channels of communication as well as flexible procedures act like catalyzers of corporate innovation. Even more important is a culture that encourages and rewards proactivity and entrepreneurial thinking and a reasonable attitude towards risks. Only in this way will employees feel motivated to contribute to their organization's future success.

Whereas business leaders have to guide their organizations to become innovation leaders, governments play a major role in the promotion of regions as innovation hubs. The regions and cities presented above have already established themselves as renowned locations for starting a high-growth business. All of them exhibit specific strengths and weaknesses and taken together could fuse into an ideal breeding ground for start-ups.

The following parameters can enhance a region's attractiveness to start-ups immensely (AustrianStartups 2013; Feld 2012; Jud, Marchart, Haslinger, Friesenbichler and Peneder 2012):

- Governmental subsidies and incentive programs (e.g. state-supported loans, tax allowances, etc.) as well as reduced bureaucratic barriers and favorable regulations (e.g. trade regulations, labor laws, etc.).
- Access to funding and risk capital as traditional methods of financing are frequently not suitable for start-ups due to the higher risk involved.
- A vibrant community with a wide range of events and co-working opportunities as well as other supportive institutions like accelerators, incubators or co-working spaces.
- A high density of large and influential corporations supporting young companies in mutually beneficial collaborations with their resources and networks.
- Renowned universities and research institutes supplying a region with fresh talent and skills as well as research facilities and support programs.
- The chart below presents the performance of each region investigated in the above-mentioned categories of comparison.

## Hubs of innovation strengths and weaknesses

	Strengths	Weaknesses
Vienna	<ul style="list-style-type: none"> <li>• Vibrant and strong growing community with internationally recognized events and networking opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Governmental subsidies frequently not suitable for start-ups</li> <li>• Rather unfavorable regulatory environment</li> <li>• Relatively conservative investment behavior and unsatisfactory supply of venture capital</li> <li>• Improvement potential in entrepreneurship specific teaching</li> </ul>
Berlin	<ul style="list-style-type: none"> <li>• Strong and historically developed art and creativity scene fostering the start-up community</li> <li>• Pool of talent, given the city's attractiveness and its educational offerings</li> </ul>	<ul style="list-style-type: none"> <li>• Major bureaucratic hurdles, especially concerning employment regulations for non-EU citizens</li> <li>• Attraction of venture capital challenging</li> </ul>
London	<ul style="list-style-type: none"> <li>• Ambitious governmental support and development programs, e.g. Tech City UK</li> <li>• Start-ups friendly regulatory environment, e.g. ease of incorporation</li> <li>• co-working spaces, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial lack of angel and micro venture investments</li> </ul>
Dublin	<ul style="list-style-type: none"> <li>• Highly favorable regulatory environment, e.g. low corporate taxes</li> <li>• Third highest EU level of VC investments</li> <li>• Strong potential for collaborations between multinationals and start-ups</li> <li>• Very high public investment in education</li> </ul>	<ul style="list-style-type: none"> <li>• Start-up / tech scene not as diverse as elsewhere, e.g. in Berlin (technologies)</li> </ul>
Silicon Valley	<ul style="list-style-type: none"> <li>• Many collaboration opportunities with tech giants including Google, Apple and Adobe</li> <li>• Highly educated, diverse and success-driven workforce and internationally recognized university (Stanford)</li> </ul>	<ul style="list-style-type: none"> <li>• Strict labor and immigration regulations, e.g. very limited number of long-term visas</li> <li>• Lack of start-up-friendly taxes and policies</li> <li>• High competition for the attraction of capital</li> <li>• Extremely high cost of living</li> </ul>
Shanghai	<ul style="list-style-type: none"> <li>• Ambitious governmental action plan</li> <li>• High quality of teaching and research institutions</li> <li>• Strong and active investment landscape</li> <li>• Collaboration opportunities with influential international corporations like Google and Siemens</li> </ul>	<ul style="list-style-type: none"> <li>• Weak enforcement of law including intellectual property rights</li> </ul>
Tel Aviv	<ul style="list-style-type: none"> <li>• High involvement and interest of government authorities in the community, e.g. sponsorship of events, Startups Visa initiative, etc.</li> <li>• Very active community with the highest density of start-ups worldwide</li> <li>• Easy access to capital</li> <li>• High interest of international corporations in collaborations and investments</li> </ul>	<ul style="list-style-type: none"> <li>• When compared to Silicon Valley or Shanghai, Tel Aviv lacks internationally recognized education and research</li> </ul>

Source: Authors.

In terms of governmental promotion and an overall favorable regulatory environment, clearly Dublin and Tel Aviv serve as role models. Dublin's generous taxation greatly facilitates starting and running a business from a financial perspective. Tel Aviv in turn set up an ambitious action plan including the promotion of collaboration and networking platforms, as well as specific measures simplifying business processes for foreigners.

A favorable business environment also benefits start-ups via indirect channels. Tax incentives on investments spur the activity of business angels and thus benefit the region's funding landscape as evident in Dublin. Moreover, large companies also want to avail themselves of regulatory advantages and thus settle down in the corresponding region. Mutually beneficial collaborations

between these companies and start-ups stimulate the innovation activities within a region to a great degree, as evident in most of the hubs addressed in this paper.

The promotion of incubators and accelerators further promotes regions' attractiveness in terms of capital availability.

The importance of first-class research and educational institutions is evident by the influence of Stanford University on Silicon Valley. Likewise, Shanghai's universities are major attractors of international talent. A highly educated population not only secures the future growth of an economy but also enhances the attractiveness of a region for other start-ups. Consequently, it is important for governments to understand the significance of allocating funds to education and research.

Last but not least, a vibrant community and start-up scene – possibly with a success story like Soundcloud – has the power to accelerate awareness of a region internationally. Such communities sometimes emerge naturally and from a historical background, as in Berlin, whose tradition of art and creativity scene has favored the formation of its start-up scene. Vienna has long been recognized for its cultural offerings as well, thus naturally attracting creative minds.

In most cases, however, a beneficial environment has to be created from scratch and then benefit from strong word-of-mouth. The power of a region's image is particularly evident in the case of Silicon Valley, which still attracts numerous start-ups every day, despite the extremely harsh competition for workforce, capital, working and living space and customers.

## **V Policy recommendations**

The leverage effect of public action on the creation of a start-up-friendly environment is clearly evident. Specifically, governments must identify potential “enemies of innovation” within their existing regulatory and support landscape and identify suitable measures for the stimulation of new businesses in their region.

Policy measures such as the following can greatly stimulate innovation and start-up activity:

- A preferential tax treatment of private investments directly favors the activities of angel investors and thus the ease of access to capital.
- Financial subsidies targeting entrepreneurs incite the establishment of new ventures. These subsidies are, however, only conducive when specifically designed for the needs and circumstances of young ventures and easily accessible for start-ups.
- Apart from financial assistance, governments should simplify incorporation policies to encourage innovators to establish their own business.
- By introducing beneficial immigration and employment regulations, governments can stimulate the in-flow of entrepreneurs and fresh talent to the market.
- Finally, the greatest priority should be given to publically promoting educational and research institutions in light of the immense importance skilled and talented inhabitants have for a region's innovativeness and development.

Ultimately, however, a region can only be transformed into a hub of innovation – and, as a result, thrive – when government authorities begin collaborating closely with the actual players in the start-up community.

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