WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Insight Report

Enhancing Europe's Competitiveness

Fostering Innovation-driven Entrepreneurship in Europe

January 2014

In collaboration with A.T. Kearney

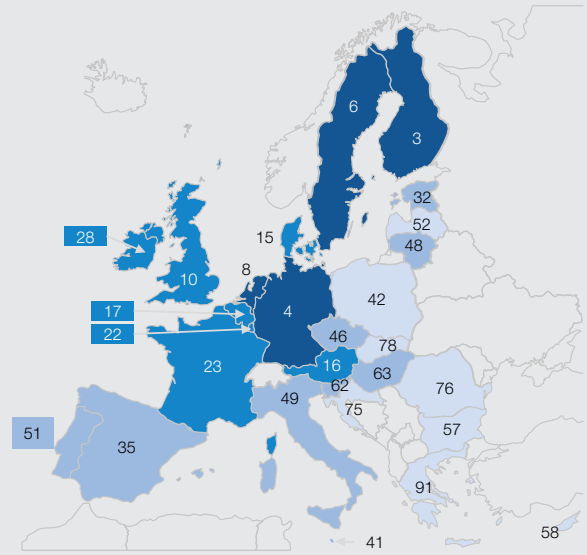
The views expressed are those of certain participants in the discussion and do not necessarily reflect the views of all participants or of the World Economic Forum.

REF 121213

Contents

Figure 1: Illustration of Challenges and Approaches to Fostering Innovation-driven Entrepreneurship

Innovation capabilities in the European Union influence the Competitiveness Divide[1]



Innovation score (scale 1-7):

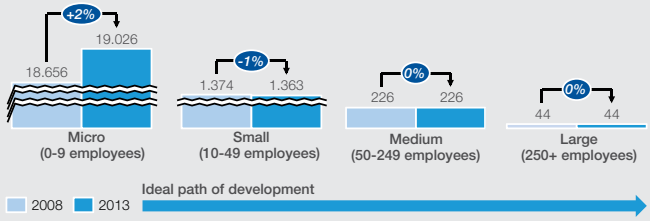
0-3.5 | 3.5-4.0 | 4.0-4.5 | 4.5-5.0 | >5.0

Note: The figure shows the overall GCI rank (lower is better) and the score of each country in the innovation pillar

1. Source: The Global Competitiveness Report 2013-2014, World Economic Forum

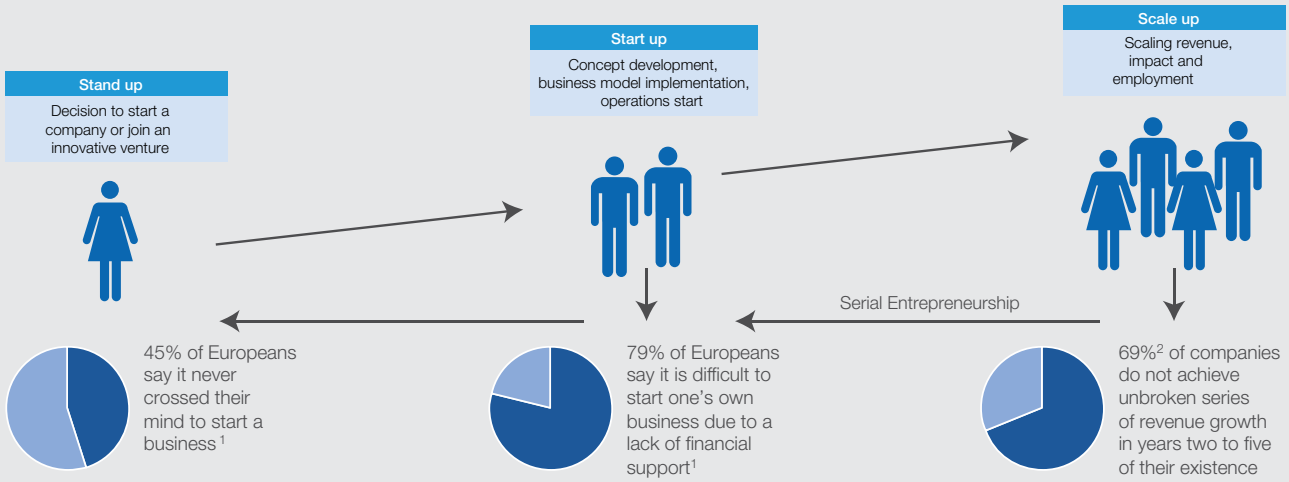
8 out of 10 jobs generated in the European Union since 2008 were created in small and medium-sized companies

While the number of micro companies in the European Union has increased by 370,000 (2%) between 2008 and 2013, the number of small and medium or large companies has not grown[1] (in 1,000 companies)



1. Eurostat statistics on enterprises on the European Union

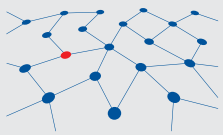
A Life Cycle Approach to Fostering Innovation-Driven Entrepreneurship: Stand up, Start up, then Scale up



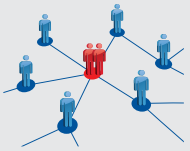
1. Entrepreneurship in the EU and beyond, European Commission
2. Global Entrepreneurship and the Successful Growth Strategies of Early-Stage Companies, World Economic Forum

A European Agenda to Foster Innovation-Driven Entrepreneurship

Focus: develop explicit criteria for identifying and investing in momentum-building entrepreneurship initiatives



Connect: develop a transparent, inclusive Europe-wide database and network of initiatives for entrepreneurship



Partner: develop entrepreneurship initiatives that achieve both scale and momentum by connecting stakeholders better

Benefits:

- Contribution to increasing scale, resource-efficiency, and number of initiatives

- In consequence, more (serial) entrepreneurs and more high growth innovative companies, more opportunities for innovation for European citzens at less cost

Executive Summary

This intermediate report, produced as part of the World Economic Forum's project *Fostering Innovation-driven Entrepreneurship in Europe*, presents draft analysis and a high-level agenda designed to contribute to Europe's future competitiveness and growth by encouraging new, innovation-driven ventures to be envisaged, created and scaled. Responding to evidence of innovation gaps contributing to Europe's competitiveness divides, the report is based on input from the Forum's Members, Global Shapers, Young Global Leaders and Network of Global Agenda Councils, as well as on data gathered from over 50 interviews and six workshops convened in Bad Ragaz, Berlin, Brussels, Dalian, Geneva and London.

Two important ideas have emerged from the Forum's work in this field.

First, fostering innovation-driven entrepreneurship in Europe requires a **comprehensive view on the entire entrepreneurial life cycle**,[1] which can be divided into three phases:

- **Stand up** – Promoting the attitudes and skills required to mobilize Europeans with both the desire and the ability to create scalable entrepreneurial ventures
- **Start up** – Gathering the resources to start up a business, with a particular focus on access to capital for entrepreneurs across the European Union
- **Scale up** – Enabling ventures to scale, with a particular focus on collaborations that simultaneously improve the innovation capacity of both partners to create growth and jobs across the region

In each phase, we identify challenges and examples of practices to foster entrepreneurship in such a way as to create serial entrepreneurs, and examine the supporting ecosystem factors that can enable or hinder entrepreneurs as they progress through the life cycle.

Second, recognizing the myriad positive efforts, but also the challenge of geographical fragmentation to current entrepreneurship initiatives across Europe, we propose a **European agenda for effectively promoting innovation-driven entrepreneurship**. Three key elements of an agenda with relevance for the entire entrepreneurial life cycle are:

1. *Focus: Develop explicit criteria for identifying and investing in momentum-building entrepreneurship initiatives.* Key questions include: Are initiatives adopting an integrative approach, appropriately intervening in the entrepreneurial life cycle and leveraging the potential to partner between regions, industries and actors? Are initiatives explicitly designed to be "paid forward"? Any beneficiary of the initiative should commit to give something to a new venture and would therefore pass on momentum or serve as a multiplier rather than as an endpoint.
2. *Connect: Develop a transparent, inclusive Europe-wide database and network of initiatives for entrepreneurship.* A network of initiatives for entrepreneurship is the key element to provide transparency and integrate initiatives across the entrepreneurial life cycle. It is targeted at initiatives by entrepreneurs themselves and by influencing actors within the life cycle, including representatives of schools and universities, civil society, investors, representatives of large corporations and policy-makers.
3. *Partner: Develop entrepreneurship initiatives that achieve both scale and momentum by better connecting stakeholders.* Building on an enabling network, encourage stakeholders to collaborate and partner across initiatives, regions, organization types and sectors to achieve scale and momentum among new ventures and ideas.

This report highlights these emerging ideas and is designed to spur debate about the most effective ways to improve the conditions for innovation-driven entrepreneurship across Europe, focused in particular on start-ups and small and medium-sized companies (SMEs) and their growth prospects as vehicles for value-added activity. However, despite this focus, the ideas in this report could apply more broadly to entrepreneurial activity within large companies, within the civil society sector and in other organizational contexts.

In issuing this intermediate report, we deliberately present two caveats:

First, this is meant to be a draft set of ideas for reflection and feedback by a broad community of European stakeholders.

Second, entrepreneurship and innovation are both very broad concepts with many definitions. We fully appreciate that entrepreneurial thinking can and does occur in a broad variety of contexts and organizational forms in a non-linear way.

This analysis is not meant to limit entrepreneurial activity to any particular age group, background, industry or sector. However, in this discussion, we do deliberately highlight a growth journey that starts with an idea, proceeds to a nascent organisation and then scales to achieve its impact.

We look forward to your comments and feedback on the ideas presented in this report.

Innovation Capabilities in Europe Influence the Competitiveness Divide

Despite significant efforts to restore economic dynamism through macroeconomic interventions and structural reforms, tempered growth expectations remain across advanced economies. The prospects for the Eurozone remain particularly uncertain, with low growth rates and stubbornly high levels of unemployment. Europe continues to struggle to increase its competitiveness and set its economy on a more solid footing. This is in part due to continued uncertainty about parts of its financial system, insufficient levels of competition in the service sector and fragmented markets in key strategic sectors.

The Global Competitiveness Index (GCI) provides a tool to identify the competitiveness strengths and challenges of an economy and track progress in addressing them.

The Global Competitiveness Report 2013-2014 analysis as described in Figure 2 shows that Europe's competitiveness is far from even, with a sharp competitiveness divide between a highly competitive Northern Europe outperforming Southern and Central-Eastern Europe. This divide is particularly strong in innovation performance, one of the key drivers of competitiveness for Europe, given its advanced stage of economic development and the imperative to focus its production on high value-added, innovation-rich products and services. In this respect, five out of the 10 most innovative countries of the world are European, and yet many other European economies continue to lag behind.

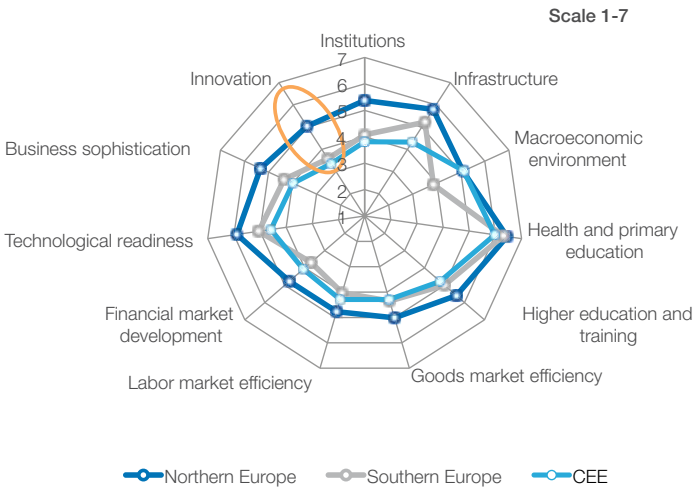
This report aims to show how to further improve innovation capabilities in Europe – by supporting countries with less developed innovation capabilities to catch up, while fostering continued sustainable development of leading innovators. Importantly, promoting innovation not only is a matter of one pillar of the GCI, but also requires improvements across other pillars such as higher education and training and technological readiness.

Figure 2: Defining competitiveness, comparison of European regions, Top 10 Countries in Innovation Globally

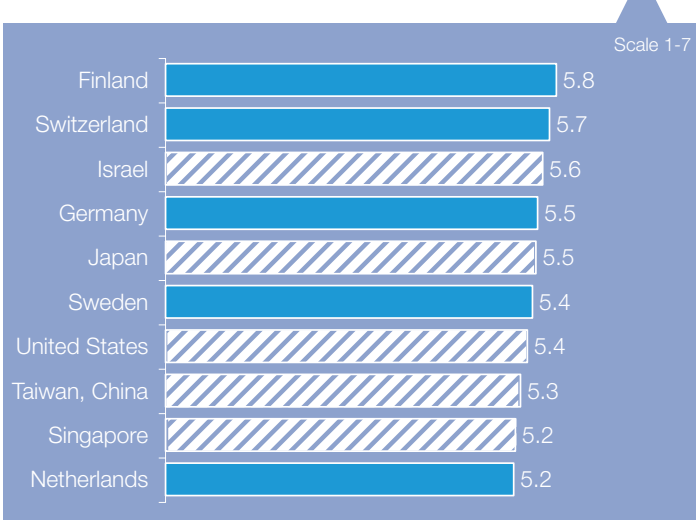
Source: *The Global Competitiveness Report 2013-2014*

Defining Competitiveness

> **The set of factors, policies and institutions that determine the level of productivity of a country taking into account its level of development.**



The 12 Pillars of Competitiveness



A Life Cycle Approach to Fostering Innovation-driven Entrepreneurship: Stand up, Start up, then Scale up

Innovation is driven by many actors, including companies, academic institutions and individuals. Although some large corporations are strong innovators, small and medium-sized companies are frequently the source of ideas for products brought to the market by large corporations.[3] In Europe, SMEs account for over 99% of firms and two-thirds of jobs, and contribute more than half of the total added value created by businesses.[4]

The SME segment represents real but volatile growth, innovation and employment opportunities for an economy. Even though eight out of 10 jobs net generated in Europe since 2008 were created in small and medium-sized companies, the segment is characterized by high levels of organizational and employment churn.

Figure 3 shows that European SMEs have performed very heterogeneously which shows the need for specific approaches to improve strong performers while allowing those countries that were struggling over recent years to catch-up.

It is estimated that only 50% of European start-ups survive the first five years.[5] Further, while the number of micro-companies in the European Union has increased by 370,000 (+2%) between 2008 and 2013, the number of small, medium or large companies has not grown over the same time period, highlighting that SMEs face difficulties in scaling to make a significant difference to growth and employment across Europe.[6]

It is this challenge of scaling innovative, entrepreneurial organizations that this report focuses on. It identifies key needs and challenges in different phases of organizational development and suggests that paying more attention to the entire entrepreneurial life cycle enables entrepreneurs, large corporations and policy-makers to help start-ups and SMEs to scale successfully, while also improving the innovation capacity of large organizations across Europe. Three important phases are analysed:

- **Stand up** – Assessing what drives individuals to desire and believe they have the ability to start an innovative company or join a market innovator start-up or SME as an employee
- **Start up** – Assessing the success factors for an entrepreneur in establishing an innovative organization and making it a viable, operating venture, in particular to be able to secure the required financial and human capital and increasing the likelihood for the business to break even
- **Scale up** – Assessing success factors in scaling a business sustainably to expand in terms market access, revenues, added value and number of employees, in particular identifying and realizing win-win opportunities for collaboration between market leaders and market disruptors

Figure 3: SMEs in many EU countries are struggling to reach or even exceed the 2008 level of employment and value-added

Note: Slovakia not part of the analysis since, as of 2010, and therefore during the assessed time interval, Slovakia has applied a new statistical methodology; source: 2013 SBA Fact Sheet Slovakia, European Commission
SME: small- and medium-sized companies; Source: Project Team based on Eurostat

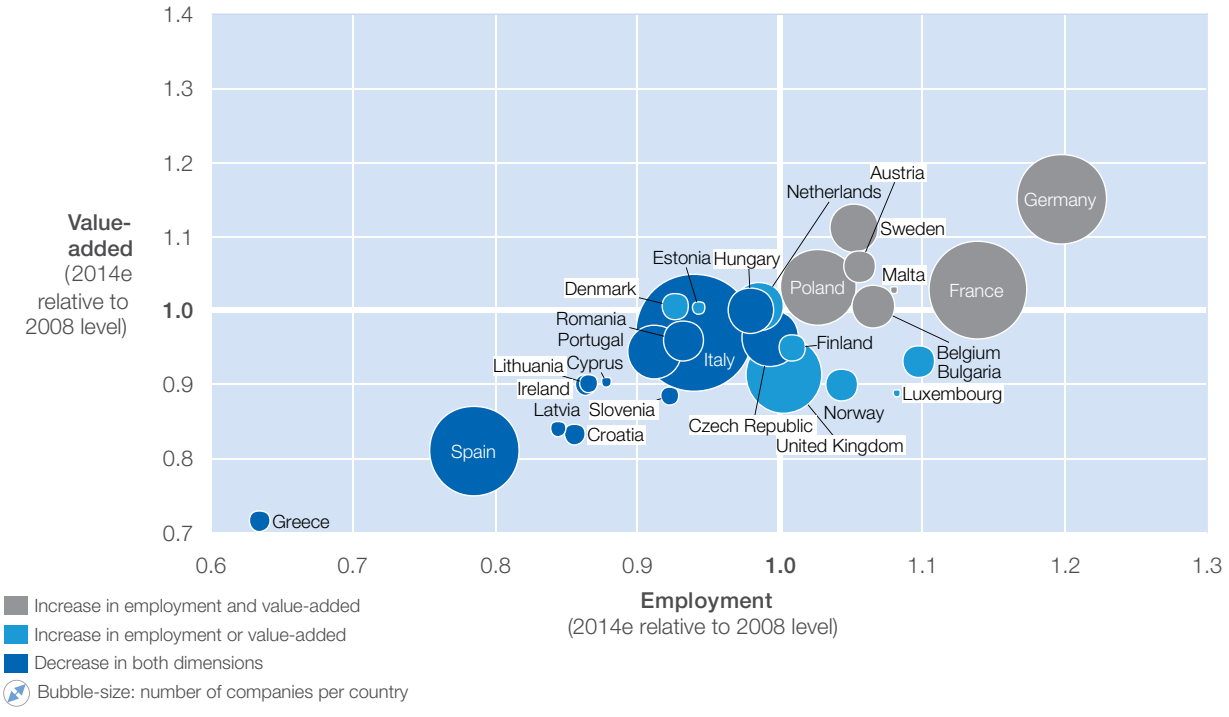
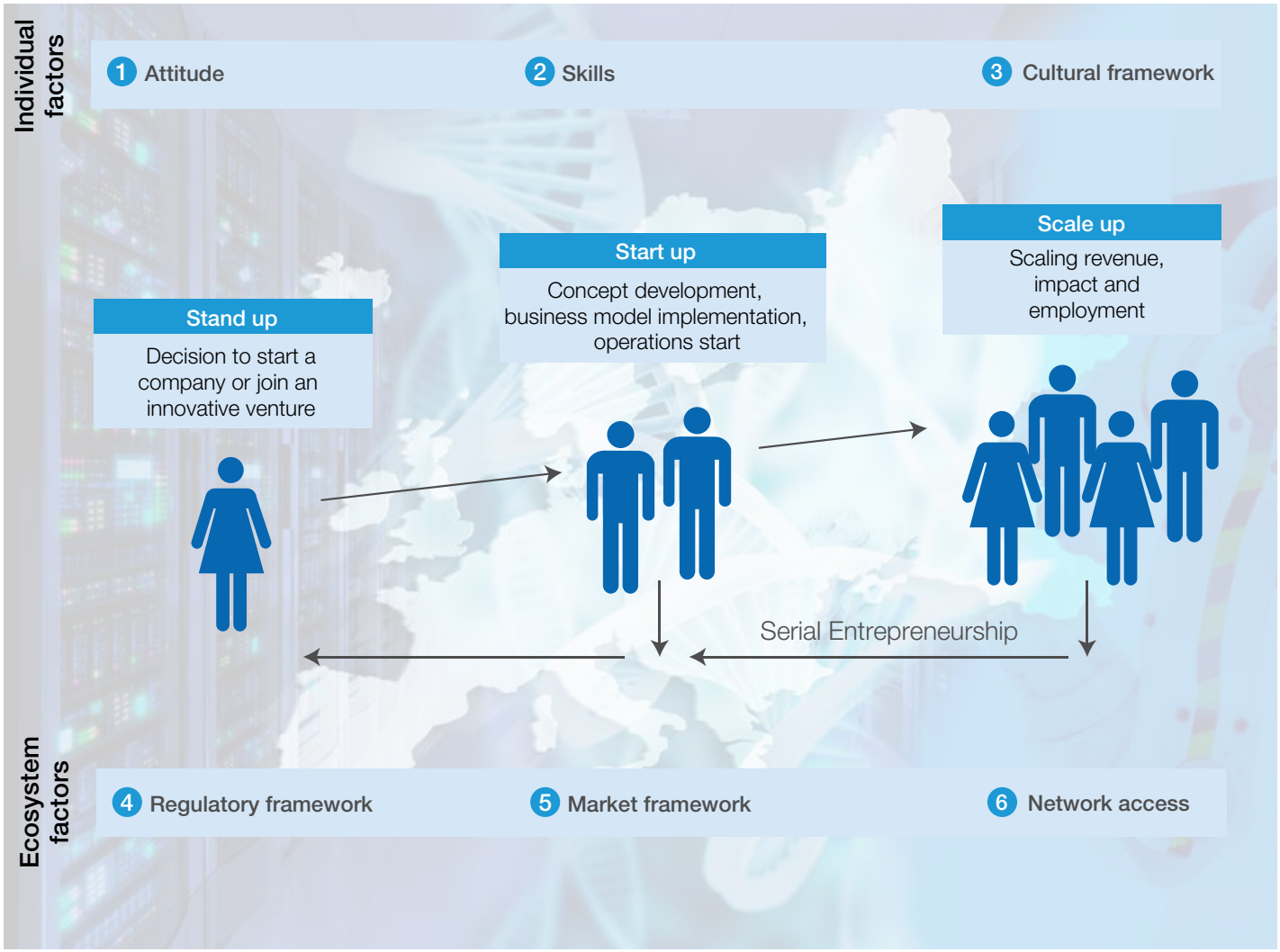


Figure 4: A Life Cycle Model for Entrepreneurship[7]

Source: Project team



In the following pages, a detailed model is introduced per life cycle phase, showcasing key influencing factors, discussing main challenges and featuring selected leading initiatives to improve conditions for entrepreneurship in the phase. Each phase highlights different key influencing factors from among the six displayed in Figure 4.

- **Attitude** refers to the individual's mindset, particularly a risk-taking nature and levels of perseverance, qualities identified as essential among entrepreneurs.
- **Skills** refers to the set of job-related and behavioural skills required to successfully found or work in a fast-growing, innovative organization.
- **Cultural/social framework** refers to the set of social and cultural factors that either support or inhibit an individual's decision to engage in the entrepreneurial ecosystem rather than other occupational pathways.
- **Regulatory framework** refers to the administrative processes and rules required to start and operate a company, including licensing, tax and labour market regulations.
- **Market framework** refers to the availability of necessary inputs, transformation processes and customer demand necessary to operate and develop the venture.
- **Network access** refers to the availability of supporting partners, advisers and enablers who transfer know-how and create opportunities for growth.

For the purposes of this report, innovation is considered in a broad sense as the capability to manage an idea or invention for a) new products; b) processes; c) services; and d) a business model leading up to its successful commercialization. Entrepreneurship is defined as "the pursuit of opportunities beyond the resources you currently control".[8] The report, therefore, addresses opportunities for *fostering* the conditions for innovation-driven entrepreneurship across the entire life cycle, focusing on scalable interventions and measures which create opportunities for entrepreneurs, large corporations, academia and civil society to collaborate and mutually benefit from additional economic activity.

Finally, the entrepreneurial life cycle is not designed to end upon the successful scaling of a venture. The goal of a healthy and robust entrepreneurial ecosystem is to engender serial entrepreneurs who persevere over multiple ventures and, upon achieving success, continue to support entrepreneurial activities as investors, mentors and role models.

Stand up: Fostering an Entrepreneurial Mindset and Culture across the Continent

Stand up: Fostering an Entrepreneurial Mindset and Culture across the Continent

Stand up

Decision to start a company or join an innovative venture

Turning an innovative idea into economic activity creates companies, economic growth and jobs. It takes an entrepreneurial mindset to found a company, but also to decide to take the risk of joining an innovative start-up as an employee to contribute much-needed human capital.[9] Ensuring that individuals have the desire and believe they have the ability to create a business or add value to an innovative business as an employee is critical to a pipeline of innovative, scalable organizations. Figure 5 details a conceptual model for the factors influencing whether a person or group possesses the desire and ability to found or join an innovation-driven venture.

Three Core Factors to Foster Entrepreneurial Culture

The decision to become an entrepreneur or join an innovative entrepreneurial venture is complex.[10] This analysis focuses on three categories of individual factors that were highlighted in interviews and workshops: 1) a positive attitude towards entrepreneurship and risk is an enabler for selecting an entrepreneurial career and remains relevant throughout the process; 2) the inspiration to start or join an entrepreneurial business and the decision to turn the inspiration into reality are driven by skills (such as business intelligence and the capability for idea building); and 3) the cultural/social framework – family, friends, peer entrepreneurs and role models – influences the decision process.

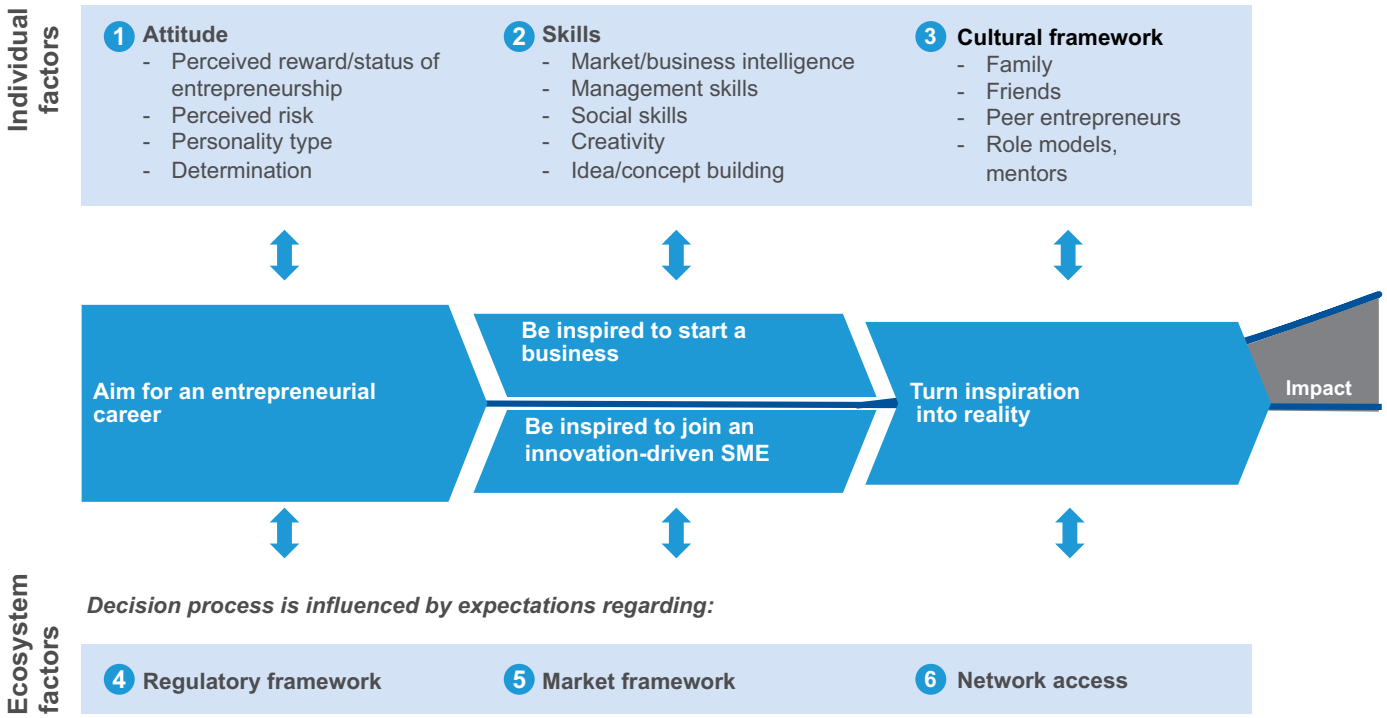
Challenges to Promoting Entrepreneurship

Attitude: Entrepreneurs have decreased risk-taking and aim less for radical innovation

Fear of failure is a key dimension frequently shown to be a roadblock for entrepreneurship, and seems to be more prevalent in Europe than in other regions.[11] There is evidence that the recent economic turbulence has resulted in entrepreneurs taking less risk overall; for example, in the high-tech sector, it seems that entrepreneurs are less inclined to aim for radical innovation.[12] This is a key challenge, as overcoming and learning from failure is crucial for successful entrepreneurship. Even though employees of the Finnish start-up Rovio had developed 51 programmes, none of them was a commercial success. After going through this, their 52nd programme, *Angry Birds*, finally delivered an overwhelming success with 500 million downloads.

Figure 5: A Conceptual Model of Factors Driving the Decision to Become an Entrepreneur or Joining a Market Innovator – The Six Influencing Factors of Innovation-driven Entrepreneurship

Source: Project team



Skills: Enterprising schools and universities

Possessing the skills to found and operate a business is an important complement to the attitude of risk-taking and perseverance that successful entrepreneurs display. Entrepreneurship education is undergoing a steady development in Europe, but there remains room for further expansion in primary, secondary and tertiary contexts. However, expanding such schemes requires well-trained and prepared instructors and professors to teach entrepreneurship and offer practical experience to young people that directly link to the needs of a start-up. Educational experiences have been shown to be powerful influencers of entrepreneurial activity: in a joint study, JA Sweden and the Stockholm School of Economics demonstrated that "mini company" programmes have a significantly positive effect on the creation of new firms, on firm survival and on job creation in organizations featuring programme participants.[13]

Cultural/social framework: Drawing attention to entrepreneurial career options

The third and possibly most important influencing factor is culture, which in turn determines individual attitudes towards entrepreneurship, the desire to acquire entrepreneurial skills and the overall likelihood of someone starting a business or choosing to work for a start-up or innovation-driven SME. One aspect of this is the attention paid by Europeans to the possibility of a career as an entrepreneur. According to the European Commission's Eurobarometer (cf. Figure 6), 45% of Europeans have never thought about starting a company. Self-employment is a less popular option than it was in 2009, with a clear majority in the European Union (EU) now favouring work as an employee. Another is the prevailing attitude towards entrepreneurs, which, while favourable, lags the professions. While 79% of Europeans tend to agree that entrepreneurs create new products and services that benefit all and 87% believe they create jobs, professionals (such as architects, lawyers, doctors and accountants) enjoy a more favourable opinion among Europeans.[14] Early exposure to entrepreneurship, entrepreneurial thinking and peer-level success stories is key to transmitting an entrepreneurial-friendly culture.

> **In the middle of the crisis, we started to increase funding of our universities to promote entrepreneurship.**
>
> Jyrki Katainen, Prime Minister of Finland

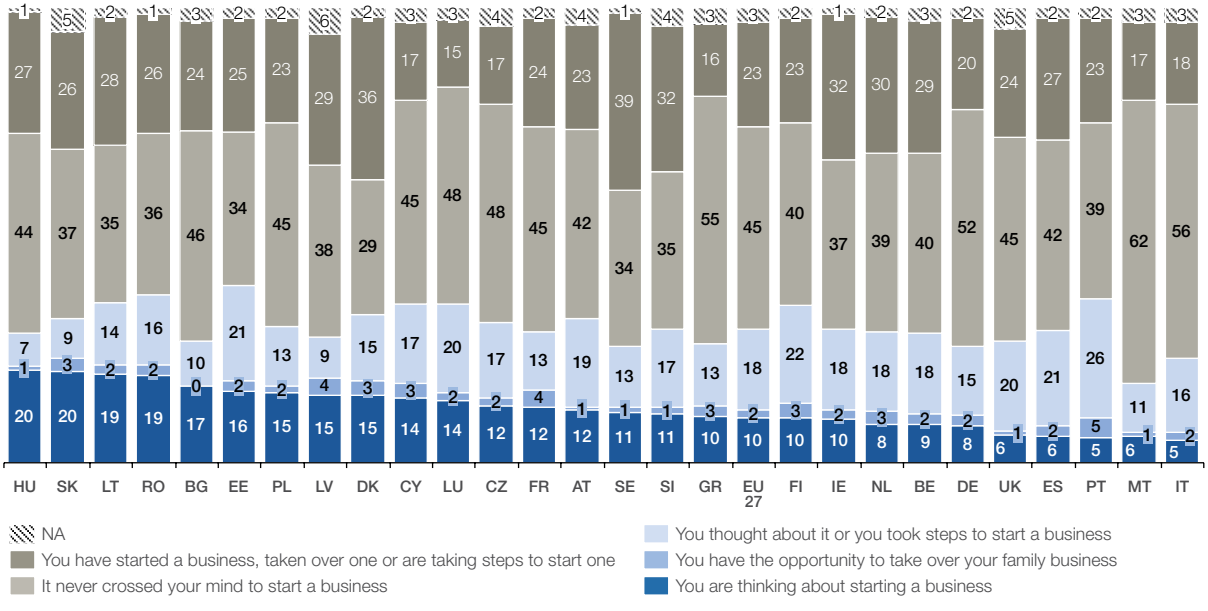
> **People who have successfully completed our entrepreneurship preparation programme are at least 60% more likely than a control group to engage in entrepreneurship.**
>
> Sean Rush, Chairman, JA Worldwide

Assessing entrepreneurship readiness with forward-looking measures

Extensive studies provide evidence about the perception and attitude towards entrepreneurship. In a workshop discussion and as a complement to this, a more forward-looking entrepreneurship readiness index was suggested that could build on an assessment at schools. The key idea is to support policy and society with indications about the challenges of tomorrow.

Figure 6: Reasons for Not Having Started a Business, Based on a Survey with 30,881 Respondents

Source: Entrepreneurship in the EU and beyond, European Commission



Practices in Collaboratively Promoting Entrepreneurship and Entrepreneurial Careers, with Examples

Actors	Leading initiatives to foster attitude, skills and cultural/social framework	Leading initiatives to foster regulatory framework, market framework and network access
Private	**Platforms to connect mentors and mentees, entrepreneurs and interns, entrepreneurs and potentials** *Mentorsme.co.uk* is a national network of over 10,000 experienced mentors offering free or paid mentoring to improve skills.[15] *Enternships.com* has helped over 5,500 companies to find graduate talent for entrepreneurial internships.[16] *Founders4Schools* reached 2,500 students in a pilot programme in 2011-2012; the platform connects entrepreneurs with teachers to inspire talent at school with success stories.[17]	**Bottom-up networks for entrepreneurs, engaging in policy support** *Campus Party*, *Le Web* and *Pioneers* are leading international conferences gathering entrepreneurs and talent, promoting entrepreneurship through access to broad and dynamic networks and influencing policy.[18]
Public-private	**Platforms to connect private actors with schools and universities to set up education programmes, student projects or events to inspire talent with success stories** *Junior Achievement Young Enterprise Europe* is Europe's largest provider of entrepreneurship education programmes. It reached 3.1 million students in 2012.[19] *IMP³rove for students* offers intrapreneurial experiences in consulting innovative SMEs in innovation management based on an extensive European benchmarking database. Over 3,500 companies in more than 30 countries have used IMP³rove.[20] *The European Forum for Entrepreneurship Research (EFER)* was founded in 1987. EFER has trained 472 professors in entrepreneurship, organizes events and publishes regularly on entrepreneurship.[21]	**Large-scale event series to promote entrepreneurship** *Global Entrepreneurship Week*, the world's largest campaign to promote entrepreneurship, inspires and connects potential future entrepreneurs – approximately 35,000 events in 125 countries.[22] **Bottom-up networks of entrepreneurs providing bottom-up policy support** *European Young Innovator Forum (EYIF)* is building innovation ecosystems in Europe by encouraging young Europeans to take more risks in innovation and entrepreneurship, and encouraging governments, businesses, society and individuals to support and reward such risk-taking through policy-frameworks, access to mentors, finance and markets. EYIF has rapidly become the leading foundation for youth innovation in Europe, reaching more than 500,000 participants across Europe.[23] **Partnering across stakeholder groups to improve regulatory framework** *Start-up Europe* was launched in March 2013 with a six-part plan to accelerate and connect local entrepreneurship ecosystems in Europe, with a focus on tech start-ups.[24]
Public	**Systematic entrepreneurship education throughout the curriculum, tailoring content to market needs** Initiatives exist in a dozen countries on cooperation between education and business, entrepreneurial competitions, certification of entrepreneurship skills, the setting-up and running of student training firms, and teacher training and support.[25]	**Comprehensive entrepreneurship programmes** *The Entrepreneurship and Innovation Programme*, under the European Competitiveness and Innovation Framework Programme (CIP), had a budget of € 2.17 billion for the period 2007-2013. Achievements include (focus on promotion of entrepreneurship) numerous projects with universities and non-governmental organizations to improve entrepreneurship education, and the European SME Week with 1,562 events across and beyond Europe in 2012.[26]

Start up: Supporting the Establishment and Initial Expansion of Innovation-driven Ventures

Start up: Supporting the Establishment and Initial Expansion of Innovation-driven Ventures

Start up

Concept development business model implementation, operations start

Before deciding to start an innovation-driven venture, the individual factors described above are of prime importance, while ecosystem factors primarily influence the decision process in terms of defining regulatory and market expectations.

In the subsequent phase of starting a business, detailed in this section, ecosystem factors play a more crucial role. This section focuses on access to capital as a key bottleneck in starting up a company: 79% of Europeans specify access to finance as an issue preventing them from starting or expanding a business.[14] While regulatory frameworks are often also cited as a barrier to business set-up and operation in Europe, these are very heterogeneous across European countries – for example, in some countries, all the necessary licenses required to start a business to manufacture small IT devices can be obtained in less than 10 days; in others it can take more than 80 days.[27]

As Figure 7 indicates, access to finance comes in different forms that are relevant for and commonly accessible at different stages of a venture's growth. Friends and family are often the earliest form of seed finance, frequently complemented by funds drawn from incubators and business angels. Venture capital is primarily available in Europe to ventures that are past the "proof of concept" stage, while bank loans and other forms of growth capital require proof of successful operation and profits that indicate future success at larger scales.

Even though major hubs are booming, venture capital supply has decreased by 56% since 2007

The EU is home to 19.0 million micro companies (those with less than 10 employees), constituting the majority of the 20.6 million European SMEs in 2013.[29] The business foundation is significantly heterogeneous across Europe: in Spain and Italy, fewer businesses were started in 2013 than in 2008, while France, Sweden and the United Kingdom have experienced an increase.[30] However, Europe's major innovation hubs are booming. Between 2008 and 2012, the number of start-ups in Berlin increased from 36,700 to 44,200 per year.[31] Yet, venture capital fundraising in the early and expansion stages amounted to only € 3.6 billion in 2012, compared to € 8.2 billion in 2007, a drop of 56%.

This section examines the reasons for this contraction in access to capital in further depth, considering the drivers of the overall situation and segmenting the analysis by actors, with a focus on the role of business angels, venture capital and banks.

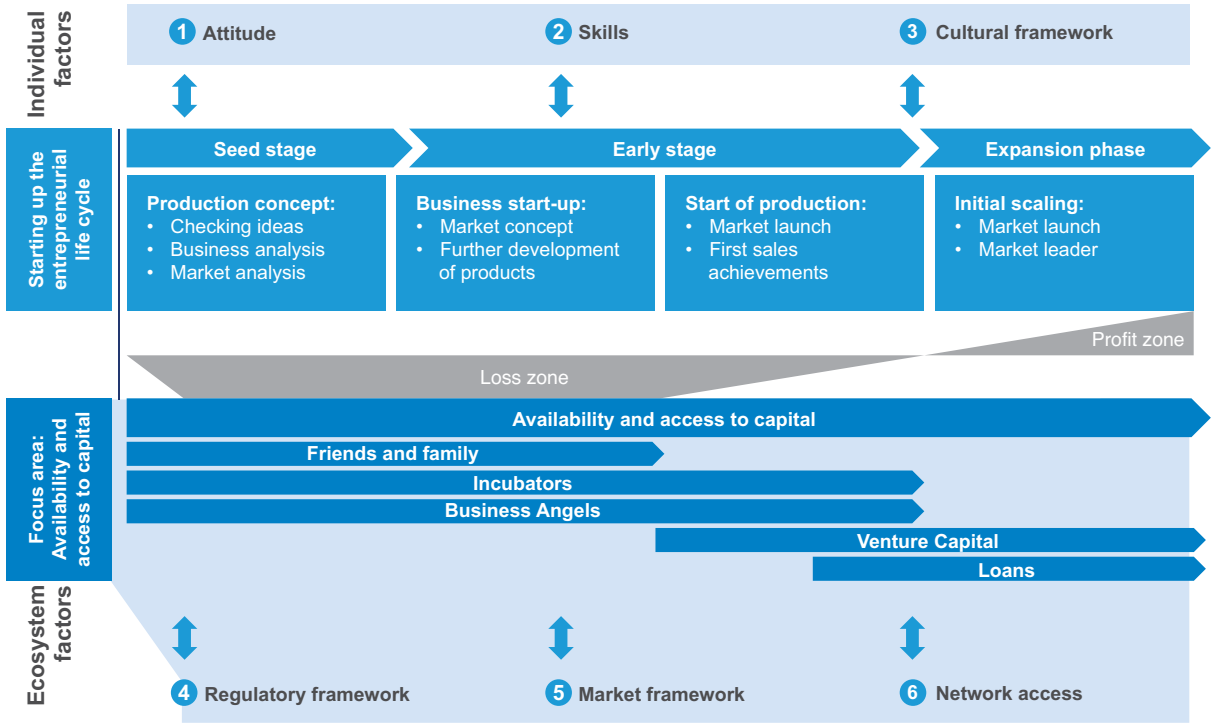
Challenges in Access to Capital

Mediocre long-term performance dampens capital supply despite a number of recent success stories

The quality of the ventures demanding capital and the return expected of them given market conditions take a key role in access to capital. Europe does not lack capital, but there is a lack of appetite to invest in entrepreneurial ventures as an asset class. This lack of appetite is matched by a perception of low returns for investors. Indeed, from 1980 to

Figure 7: Overview of start-up phase with focus area market framework

Source: Project team, based on financing stage overview by OECD[28]



2012 and including the years of the financial crisis, venture funds reported an average internal rate of return of only 1.27%, with the top quartile earning 18.49%.[32] However, while data is hard to come by, in recent years the venture capital segment in Europe has seen a number of notable successes, such as Supercell and Spotify. Many European venture capital experts remarked that the sector may be stronger than the long-term data indicate.

> **Today, non-European investors recognize Europe's strong development. Take digital as an example. In music, Europe is the home of Spotify, SoundCloud and Shazam. In gaming, there is Rovio, Supercell and King. In e-commerce, there is Skyscanner, Privalia or Zalando. In software, you find Criteo, Unity and OpenX. Since Skype, the speed at which Europe is generating billion-euro companies has been dramatically increasing.**
>
> Matthias Ummenhofer, Head, Venture Capital, European Investment Fund

Supply of business angel financing: Transparency on availability and "smartness" of money needs to be improved

Business angels are a key source for seed financing. "Smart money" from business angels can serve to provide both financing and expert advice. However, transparency on the availability and quality of angel funds is an important issue. This is illustrated by the fact that the visible share of business angel investments only amounts to approximately 10% of the overall market estimate of € 5.1 billion for 2012.[33] However, while there is room for further improvement, the actual availability of business angel capital for seed and early-stage financing was not noted as a key issue in project interviews and workshops. Rather, the primary focus was on "the missing middle" of financing larger than typical angel investments (up to around € 500,000), but smaller than the deal size typical of venture capital funds operating in Europe (from € 3-5 million and up).[28]

Supply of venture capital: In the aftermath of the crisis, government agencies take a key share

As mentioned above and displayed in Figure 8, the supply of venture capital has seen a sharp decline in recent years. Part of this decline is linked to higher levels of risk aversion following the financial crisis. There is some evidence that investors experienced an increased regulatory burden after the financial crisis that discouraged investment.[34] This drop in private investment has seen the role of government agencies in venture capital raised from institutional investors increase from pre-crisis activity of 14% in 2007 to more than 40% in 2012. A reliance on public funds in this way is not a good signal of the health of the venture market – financing volumes of government agencies are typically limited, in the case of the German *Gruenderfonds* to € 500,000 for the first round and up to € 1,500,000 for follow-up rounds, which can create ceilings for subsequent financing and may exacerbate the challenge of accessing growth capital.[35]

Figure 8: Venture Funds Raised in Europe by Investor, 2007-2012 (incremental amount raised per year as a percentage of total)

Source: EVCA

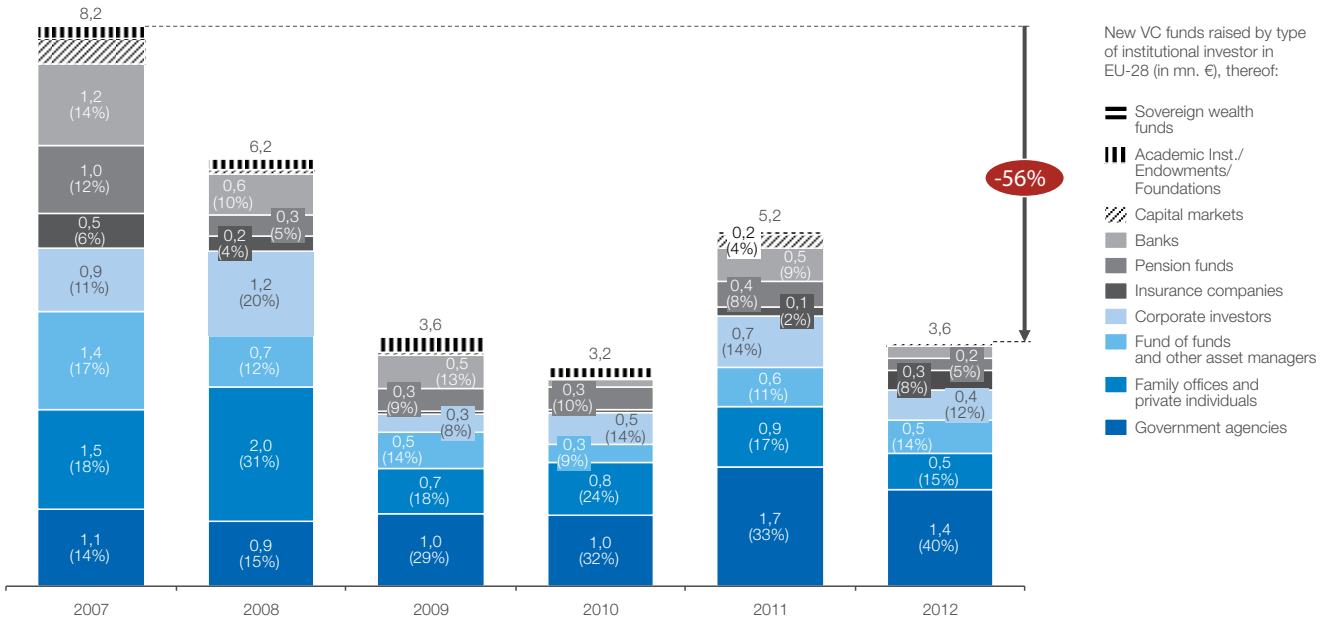
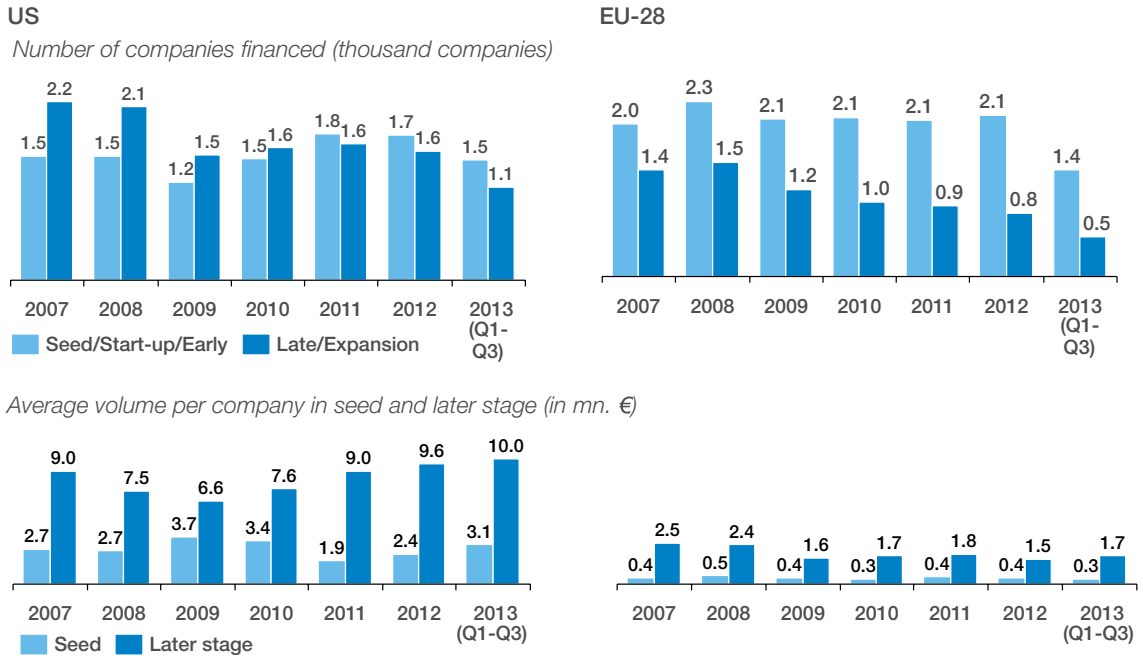


Figure 9: Imbalance between Seed and Follow-on Rounds by Number and Region

Note: All 2013 figures shown are preliminary.
Source: EVCA; NVCA/Thomson Reuters



Europe's next challenge: Increasing the number of high-growth businesses receiving financing rounds

Further financing challenges appear when European start-up businesses intend to scale their activities. Comparing seed/start-up/early-stage rounds and follow-on rounds between the US and Europe in Figure 9, there is a more significant drop between seed and follow-on rounds in Europe, which illustrates the European "valley of death" after the seed stage. While one should expect a drop between the number of seed and growth investments as some start-ups fail, the difference between the two is far more marked in Europe than in the US, indicating a higher level of difficulty accessing growth capital.[36]

Increased demand for collateral after the economic crisis restricts access to bank loans for entrepreneurs

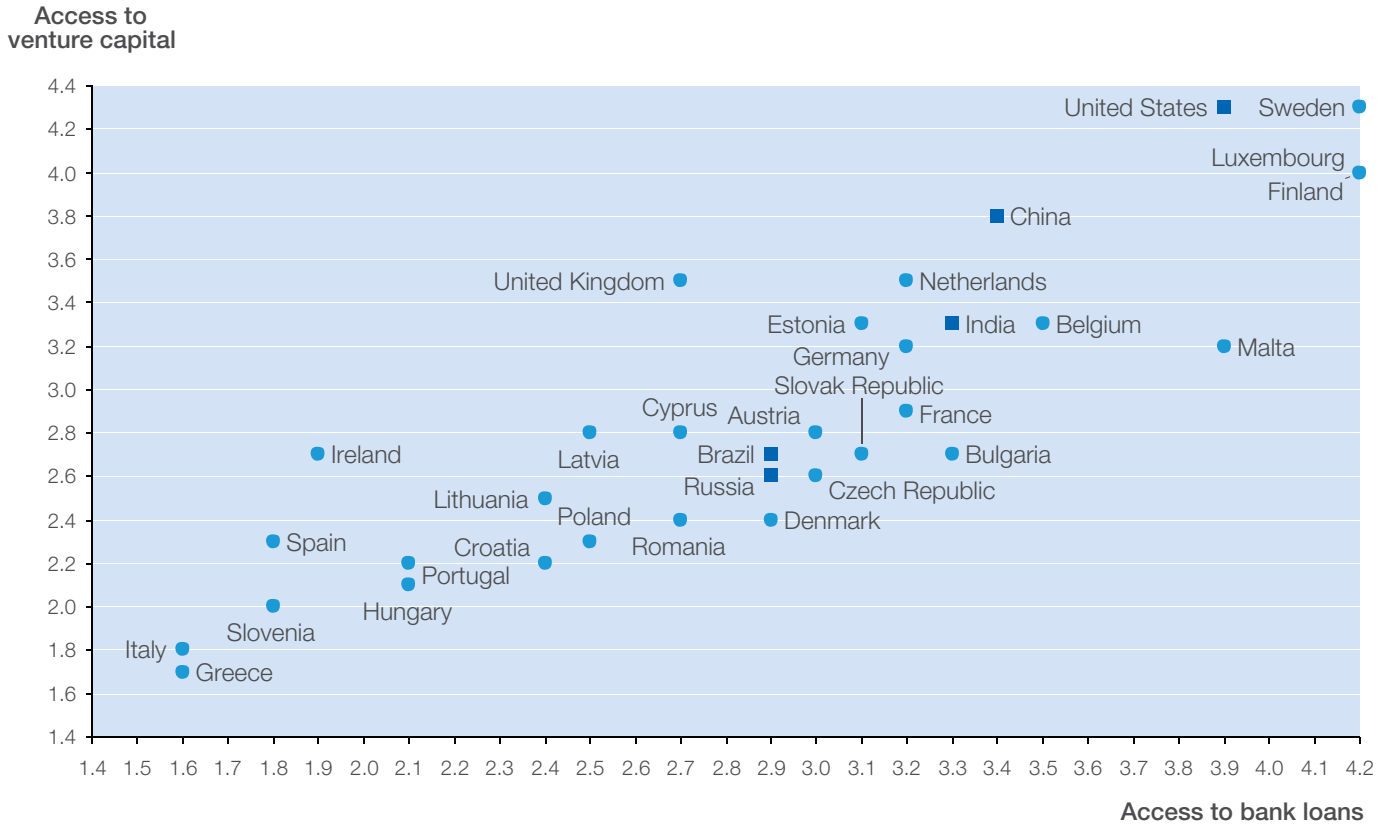
The European Small Business Finance Outlook 2013 and *The Global Competitiveness Report 2013-2014* state that the financial and economic crisis continues to impact on capital supply through financing conditions. In particular, greater demand for collateral by banks in the course of the financial crisis made it more difficult to get access to credit.[37]

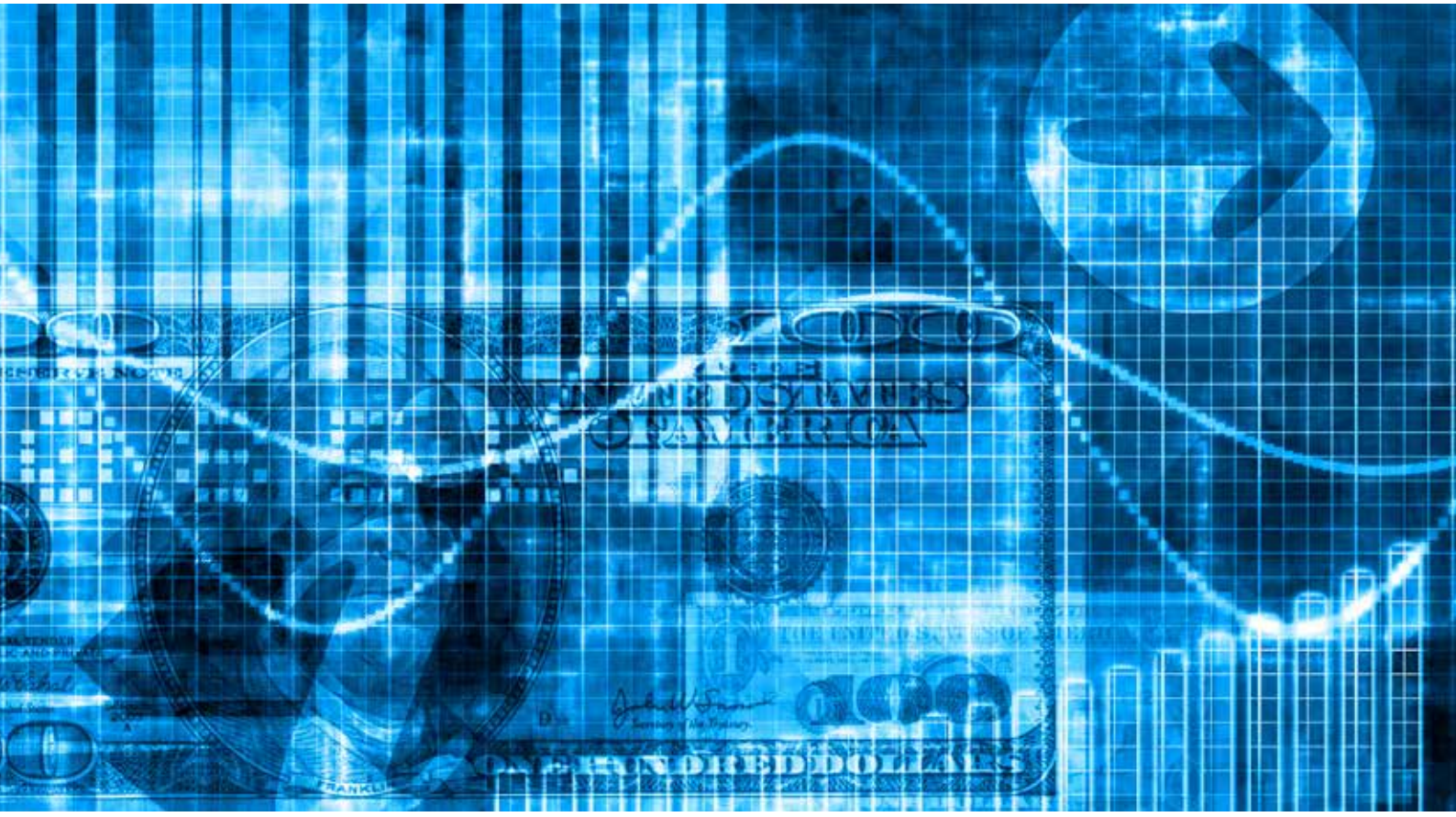
In some countries, such as the United Kingdom, potential difficulty with access to bank loans is alleviated by easier access to venture capital. However, Figure 10 indicates that restricted access to bank loans and venture capital reflects Europe's competitiveness divide, with Northern European countries being among global leaders in access to venture capital and access to loans.

> **The growing number of legislative initiatives in the wake of the financial crisis has amplified the burden for long-term investors. Capital standards like Basel III and Solvency II have pushed banks and insurance companies out of European long-term equity financing, impacting private equity and venture capital.**
>
> André Loesekrug-Pietri, Managing Partner, A CAPITAL

Figure 10: Access to Venture Capital and Access to Bank Loans in EU-28, the United States and BRIC States

Questions: A) In your country, how easy is it for entrepreneurs with innovative but risky projects to find venture capital? (1 = extremely difficult, 7 = extremely easy); B) In your country, how easy is it to obtain a bank credit with only a good business plan and no collateral? (1 = extremely difficult, 7 = extremely difficult)
Source: Global Competitiveness Index 2013-2014





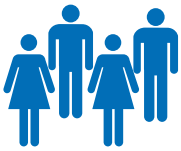
Practices in Collaboratively Promoting Access to Capital, with Examples

Actors	Financing phase: Seed/early stage	Financing phase: Late stage and expansion stage
Private	**Push private actors at the core of attention** *European Business Angel Week* will increase visibility of angel investments; 140 events were held in 34 countries in November 2013.[41] **Use crowd-funding** *In a large number of emerging platforms*, both funding needs and funding purposes are communicated through an open call to a forum – the crowd. In 2012, global crowd-funding reached US$ 2.7 billion raised (thereof approximately 44% lending, 4% equity). Global crowd-funding grew 81% in 2012, accelerating from the 64% growth in 2011. European crowd-funding volumes grew 65% to US$ 945 million.[38] At the current market development stage, due diligences for lending and equity crowd-funding can be an issue due to the low market power of individual investors.[39]	**Offer alternative instruments to classic loans – Intermediated disintermediation** *Setting-up mini-bonds*, e.g. € 10 million volume that is accessible to medium-sized companies and can be traded, and does not depend on bank financing. The market for mini bonds is expected to grow strongly, e.g. from £ 90 million in 2012 to **£** 1 billion in 2013 in the United Kingdom.[40] **"We need an intermediated disintermediation."** Andrea Illy, Chief Executive Officer, Illycaffè
Public-private	**Rethink the role of public entities to be a co-investor joining private investments** *Co-investment funds* such as the *EBAN/EIF* collaboration set up a cross-border co-investment fund. Co-investments are intended between business angels and EIF. For example in Portugal, business angels invested € 2 million on average before a comparable initiative; after the initiative, the average investment was € 11 million. Advantages: 1) opportunity to invest in larger companies; 2) increased potential to diversify investment amounts.[41] In the United Kingdom, the *Scottish Co-Investment Fund* (SCF) is a £ 72 million equity investment fund. For example, in venture capital, the fund invests £ 0.5-2.0 million in deals of £ 2-10 million. The fund operates at minimal cost on a fully commercial basis.[28] **Offer combined support services and financing** *A growing number of European accelerators and incubators* can combine financial support with networking, mentorship and physical space for entrepreneurs. A recent study by Telefonica indicates that over the past five years, the number of incubators and accelerators has increased at an annual rate of 29% to an overall number of 260 start-up programmes in Europe, compared to circa 200 in the United States.[1]	**Creating innovation partnerships between companies, universities and research organizations** Finland is a leading country in innovation cooperation between companies and the research sector. In SMEs, an investment of one euro by Finland's funding agency *Tekes* produces € 21 of turnover annually; for every euro invested by Tekes, companies increased their own R&D expenditure by two euros. A total of 47 of the 50 fastest growing companies in Finland are Tekes customers. These successes are not linked to higher spending: in relation to gross domestic product, public funding for R&D activities in Finland is 3%, compared to 7% on average in the EU and 14% in the US. [42] **"We need to strengthen access to capital across the region beyond the early stage with a public-private investment in pan-European private sector fund-of-funds."** Dörte Höppner, Secretary-General, The European Private Equity and Venture Capital Association (EVCA) **"We need more of a pan-European mentality, both on the investor's and on the entrepreneur's side."** Karen E. Wilson, Senior Fellow, Bruegel, and Organisation for Economic Co-operation and Development (OECD)
Public	**Reducing cost for entrepreneurs**[43] **"We invest in the business environment to create a feeling of opportunities."** Ali Babacan, Deputy Prime Minister of Turkey *The Turkish state* reduces taxes for techno parks – eligible businesses do not have to pay income or corporate taxes on revenues derived from certain development projects.[44]	

[1] Incubator: provision of physical space, usually without funding but with mentorship network, informal event programmes, consulting services, investor exposure and public funding links. Accelerator: provision of pre-seed investment, usually taking a minority share in the start-up; start-ups profit from both events and mentoring. Source: Salido, Sabás and Freixas (2013), "The Accelerator and Incubator Ecosystem in Europe", Telefonica.

Scale up: The Collaborative Road to Sustainable Growth

Scale up: The Collaborative Road to Sustainable Growth



Scale up

Scaling revenue, impact and employment

> **By helping the SMEs in Europe, we should not lose those entrepreneurs out of sight, who have the potential to go international. We want to create European Champions.**

Carl Bildt, Minister of Foreign Affairs of Sweden; Chair, Global Agenda Council on Europe

For Europe to realize the potential of its innovative entrepreneurial ventures, the ventures must scale well beyond simply being viable, local businesses employing a handful of people and serving a small customer base. The primary ways for start-ups to achieve this scale tend to be organic, based on acquisitions, or based on collaboration. While the first two options generally require large levels of equity or debt financing to proceed, collaborative strategies enable "win-win" situations for both partners while offering potential for the start-up/innovative SME partner to profit from the resources and backbone of the large corporation. Therefore, this section focuses on the sixth influencing factor of network access, with particular regard to business partners.

Collaboration between large market-leading corporations and market innovators can create opportunities throughout the value chain. Collaboration may occur in many areas, including research and development (R&D), sourcing/manufacturing and sales. The focus of this section is on R&D collaboration broadly defined, whereby a start-up/innovative SME and a large company agree to work together on the development or implementation of novel know-how by making use of the resources and competencies of both organizations.[46] An overview of benefits and risks in collaboration for entrepreneurs and large corporates is shown in Table 1.

> **The solutions being pioneered by start-ups are an important element of our innovation strategy. This year alone, for example, we have seen more than 300 start-ups and entrepreneurs take part in our Open Innovation project, and have launched partnerships to develop 60 new tech businesses over the next three-years.**

Antony Jenkins, CEO, Barclays

Table 1: The Give and Take of Collaboration – Key Aspects Based on Project Interviews and Workshops

Source: Project team

Benefit for large corporates	Benefit for entrepreneurs	Risk to one or both partners
Entrepreneurial spirit and culture	Experience and advice	Dilution of organizational culture or cultural clashes
Company shares in high-potentials	Access to finance	Loss of investment/independence
Ideas/concepts	Commercialized innovation in an accelerated process	IP ownership, disputes, issues
Specialized talent and resources	Access to talent and resources	Loss of talent or resources
Specific partner network	Access to business partners	Branding issues
Specific customer intelligence, access to specific customer segments	Access to new markets and sales network to access the market	Cost of partnership failure

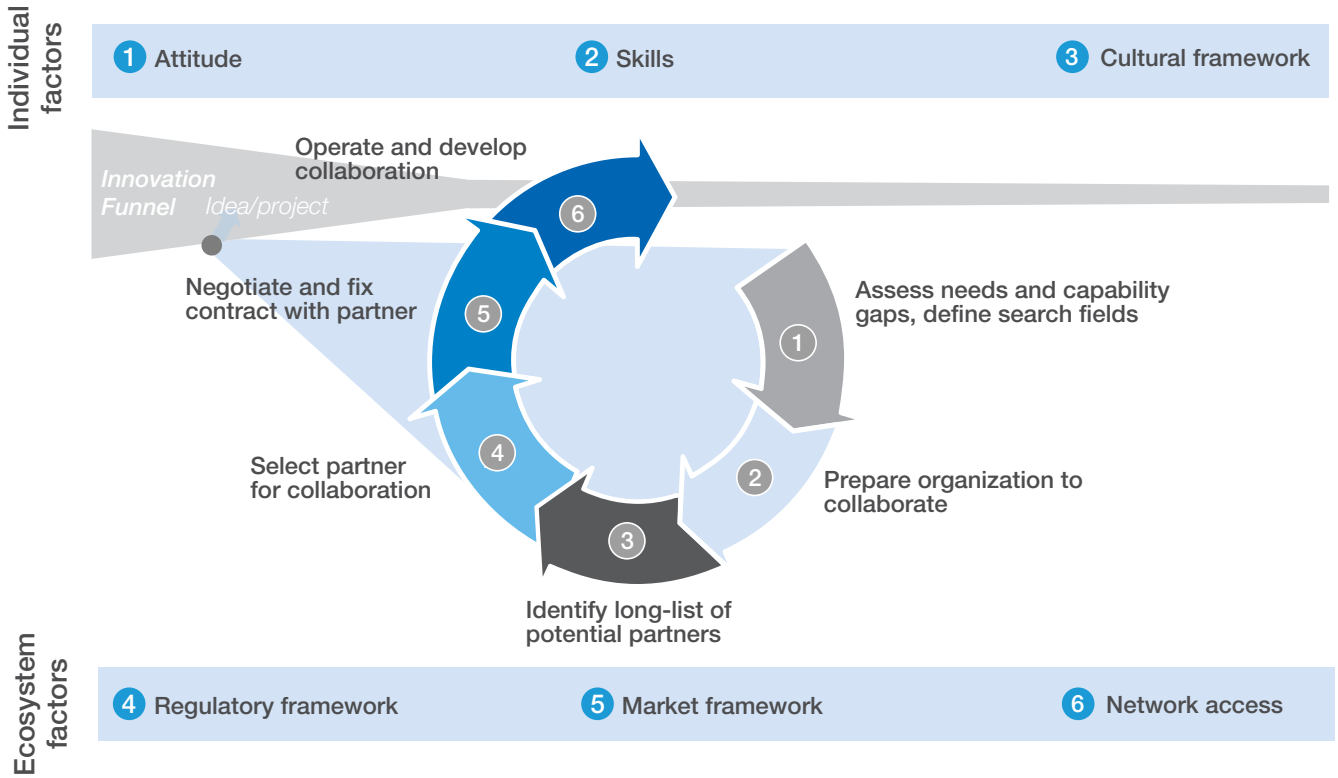
The analysis is based on a six-step model of R&D collaboration shown in Figure 11, starting with 1) the assessment of capability gaps; 2) preparing for collaboration; 3) identifying potential partners; 4) evaluating potential partners; 5) negotiating and fixing the contract; and 6) operating and developing the collaboration.

Challenges in Collaboration

To fully profit from the potential to collaborate requires first an understanding of key challenges in collaboration, and second, the ability to overcome them with specific strategies. Based on the Forum's workshops and interviews exploring this area, large corporations and entrepreneurs should consider the six steps as both an inspiration and a checklist for identifying and engaging in partnerships.

Figure 11: A Six-phase Model of Collaboration

Source: Project team



Boosting collaboration is about systematically identifying win-win situations for both sides.

Jim Andrew, Chief Innovation Officer, Philips

Opening-up systematically in their innovation activities will be key for large corporations in order to get to the next level of development speed and effectiveness.

Kai Engel, Partner and Managing Director, Germany, A.T. Kearney

Figure 12: Challenges in Six Phases to Guide Entrepreneurs and Large Corporations in Partnerships

Large Corporations

Entrepreneurs

1 Identifying key hunting grounds

As a first step, capability gaps within the organization need to be transparent and form the basis to define search fields for setting-up collaborations.

Knowing and profiting from search fields

Entrepreneurs in start-ups/innoative SMEs need to be proactive to monitor how far their activities are relevant for large partners.

2 Fostering a collaborative culture and setting-up infrastructure

Both a soft, cultural and a hard, organizational component need to be considered: from a cultural perspective, collaborating requires a new paradigm to open R&D. Importantly, this requires support throughout the corporate hierarchy. From an organizational perspective, developing a specific structure and processes to institutionalize collaboration is crucial to systematically realize opportunities – e.g. with separate units for venturing or R&D collaboration, the independence of these units has been highlighted as an important enabler for disruptive innovation.[47]

Opening up to large partners where appropriate

The "not-invented-here" syndrome of considering external work to be competition and a threat to the own organization should be overcome where appropriate. You can be too open: Henry Chesbrough highlights the case of a start-up that had a business model in competition with a large corporation while requiring support of this corporation – the company was shut down.[49]

3 In Berlin, 44,200 start-ups in 2012, 21 million SMEs in EU-28: Impossible to track potential partners globally?

There is an enormous number of potential market innovators to collaborate with, which are hidden in overall 20.6 million small and medium-sized companies in the EU and even beyond this region.[50]

In EU-28, 43,700 large corporations: Which company to partner with, whom to contact?

From the perspective of an innovative SME, the number of large corporations representing potential partners is much more tractable; the key challenge of finding a potential partner is to identify the relevant contact within the organization.

4 How should partners be evaluated, if hardly any data exist?

Once potential partners who in principle work on the relevant topics are identified, data to evaluate their performance in collaboration can often be scarce and is even more difficult to obtain and evaluate when addressing start-up partners.

5 Speed matters: Finding the right mix of rigor and pragmatism when negotiating a win-win contract

Setting up a start-up/SME collaboration requires fast and lean processes on behalf of both partners to fully realize the potential of accelerating R&D while keeping the approach tractable for the smaller partner. A key challenge is that the procurement processes of large corporations can be a roadblock when targeting to work with a start-up, in terms of complexity and the requirements for the potential partner.

6 Applying stringent project management that fosters collaboration without hindering an entrepreneurial culture

As in the pre-contract phase, the processes of a large corporation and those of a start-up/SME partner can differ largely, which can pose challenges when synchronizing them for a successful collaboration.

Practices to Promote Collaboration, with Examples

Phase	Practice/example	
Assess needs and capability gaps, define search fields	**"Consider strategic relevance for large partners and commercialization of your offer as early as possible."** Robyn Scott, Co-Founder and Chief Executive Officer, OneLeap; Young Global Leader	**"If large corporations systematically publish their search fields, there will be an increase in transparency, which ultimately boosts collaboration."** Martin Vollmer, Chief Technology Officer, Clariant
Prepare organization to collaborate	**Set-up an R&D process with specific organizational structures integrating employees, partners, and customers** *Barclays Open Innovation*[48]: The project began with a survey of business units which returned more than 80 challenges that could be addressed by start-ups and entrepreneurs. Over 300 individuals (founders and entrepreneurs) pitched their proposed solutions to specific challenges in a series of presentations and one-to-one sessions which involved more than 60 members of the Barclays team. The result was 171 one-to-one evaluations and 92 companies were selected to launch pilots and develop partnerships. Barclays are now working to scale this model for open innovation across the group to different regions and problem sets. *Phonebloks/Motorola*[51]: Phonebloks' aim is to develop a modular cell phone, to provide the opportunity to exchange, for example, the camera or the memory without having to change the entire phone. The approach was targeted open-source, designed to last and made for the entire world; the plan has more than 960,000 supporters. Motorola committed to open up its corporate R&D, using a platform for exchange with the Phonebloks community. To retain independence, Phonebloks is financed by donations. Motorola will provide a developer's kit to allow the community to contribute to product development.	
Identify long-list of potential partners	**Conduct a broad search for partners** *Game Engine Modeling (GEM)/Siemens*[52]*:* GEM is a machine simulation solution that applies game engine components and architecture. GEM makes it possible to pre-validate software, cutting development time by as much as 50%. Siemens and GEM co-developed the idea. Today, GEM has become an industry-leading product called Mechatronics Designer that is in use worldwide. **Draw on intermediaries supporting connections between challenges and solvers** *Innocentive* works with over 300,000 solvers from more than 200 countries, and has posted more than 1,650 external challenges and thousands of internal challenges (employee-facing). The CEO-Collaborative Forum (CEO CF) is where CEOs from high-growth companies convene to explore practical solutions to critical problems about finance, raising capital, shareholder issues, their board, growth strategies and other challenging real-life issues. They receive pure-peer-collaborative feedback from an experienced community of CEOs. **"Finding the right entry point and the right champion is crucial: a person who is senior enough to bend some rules if necessary for collaboration with a start-up/ SME."** Rajeeb Dey, Chief Executive Officer, Enternships.com; Young Global Leader	

Evaluate partner for collaboration	**Consider the science of choosing a partner: Build database and evaluate data with a clearly defined process** *Google Ventures* uses algorithms with data from academic literature or from due diligences. As summarized in *The New York Times*: "Is it better to invest in someone who started a company in a mediocre year for returns and did well, or started one in a good year with mediocre results? Most people say the first case. But results from academic studies show it is the second, because that indicates the founders have a better sense of market timing."[53]
Negotiate and fix contract	**Accelerate contract development with lean and partly standardized documents** **"Getting to a draft contract needs to be a question of days, not months – otherwise the opportunity to accelerate processes is turned into a risk."** Fridolin Stary, Senior Vice-President, Research and Development, Wacker Chemie
Operate and develop contract	**Be adaptable to the needs of the partner and develop on-going mutual benefits** *ABB/Fastned*[54]: ABB delivers multi-standard 50 kW fast chargers for electric vehicles and industry-leading software solutions for remote servicing. Fastned, a Dutch start-up, has received governmental concessions to build 201 charging stations out of 245 stations planned for the country's 16.7 million habitants. Process: a team of 15 employees of ABB collaborated with Fastned to develop the concept. *DSM/Provexis*[55]: DSM and Provexis jointly made Fruitflow® a commercial success – a natural tomato extract that prevents blood platelet from hyper-aggregation and helps to maintain a healthy blood flow. DSM invested to acquire a minority share through its venturing arm and agreed with Provexis on a global exclusive license agreement for Fruitflow®: Provexis is maintaining Intellectual Property and contributes technical and scientific expertise, DSM avails skills, know-how, and network to take the product to customers on a global level – both parties participate in commercialization of the project through a profit sharing agreement. **"Adapt processes and project management to address start-ups/SMEs specifically."** Paul Campbell, Chief Executive Officer, Start-up Genie **"Conduct experiments to truly understand the 'living organism' of collaborations."** Sir Tim Hunt, Principal Scientist, Cancer Research UK, Nobel Laureate

A European Agenda to Foster Innovation-driven Entrepreneurship

A European Agenda to Foster Innovation-driven Entrepreneurship

A European Agenda: Focus, Connect and Partner

A comprehensive approach to fostering innovation-driven entrepreneurship in Europe requires addressing the key challenges across all three of the stand-up, start-up and scale-up phases. The Forum's work in this area points to opportunities in two main categories.

The first category of opportunities concerns *setting explicit criteria for identifying momentum-building initiatives* and then *connecting the diverse set of actors* currently engaged in them to increase awareness and transparency. European policy shows a high level of commitment to fostering innovation-driven entrepreneurship, as do many committed private and civil society-based actors. Strengthening connections and transparency among those working is crucial to the identification of further synergies.

The second category of opportunities builds on the first and concerns ways of *partnering between the actors*. To realize further synergies in a more transparent ecosystem, collaborative and scalable concepts in fostering innovation-driven entrepreneurship can be further explored to partner between regions, stakeholders and initiatives addressing different aspects in different phases of the entrepreneurial life cycle.

Together, connecting actors and developing partnership approaches can lead to a more integrated innovation ecosystem that could contribute to growth in European industries and regions.

Focus: Develop explicit criteria for identifying and investing in momentum-building entrepreneurship initiatives

Working towards the goal of a more integrated innovation ecosystem in Europe requires an active discussion on the criteria required to assess the effect of ongoing entrepreneurship initiatives in the region. The following two criteria reflect the potential for achieving scale and momentum in an integrated innovation ecosystem:

1. Does the initiative adopt an integrative approach, appropriately intervening in the critical phases of the entrepreneurial life cycle and leveraging the potential to partner between regions, industries and actors to achieve success?
2. Is the initiative explicitly designed to be "paid forward" and create its own forward momentum? Any beneficiary of the initiative should commit to give something to a new venture and would therefore pass on momentum or serve as a multiplier rather than as an endpoint.

> **Design a code for entrepreneurial initiatives: creating a charter outlining the types of interventions we want to talk about; thinking through organizational culture and the contribution to society.**

Global Shaper Hub London

> **Build a network of structures which converges on common parameters and goals. The network will merge different structures willing to cooperate and share resources, ideas and expertise.**

Global Shaper Hub Genoa

Connect: Develop a transparent, inclusive Europe-wide database and network of initiatives for entrepreneurship

Establishing a well-functioning network of initiatives for entrepreneurship is the key element of providing transparency and integrating initiatives across the entrepreneurial life cycle. It is targeted at initiatives by entrepreneurs themselves and by influencing actors within the life cycle, including representatives of schools, civil society, universities, business angels, accelerators, incubators, venture capitalists and corporate intrapreneurs. It currently takes significant research to appreciate, for example, the number and type of public and private mentoring initiatives for entrepreneurs that are accessible in a certain European state. A network connecting entrepreneurship initiatives could lower this kind of transaction cost and ease transparency on initiatives. Primarily providing infrastructure for decentralized communication and

exchange, the network could evolve and govern itself according to innovation focus areas. One important aspect of such a network would be a layer of data, not only on the initiatives themselves, but on the interests, preferences and locations of relevant stakeholders, including entrepreneurs, interested businesses, civil society stakeholders, investors and potential mentors. Emerging examples of resources and partnership networks are detailed below.

Partner: Develop entrepreneurship initiatives that achieve both scale and momentum by connecting stakeholders better

Connecting the network is an enabler. The crucial second element builds on improved transparency to encourage collaboration and to create new types of initiatives linking different dimensions to achieve scale and momentum: e.g. linking phases of the entrepreneurial life cycle, regions, industries, or actors. The ultimate goal is a more integrated European innovation ecosystem.

Connect and Partner throughout the Life Cycle

The following illustrates how these elements translate into important elements of an agenda for the three life cycle phases. The agenda elements summarized are intended as examples to trigger further discussion on how to collaboratively achieve and scale impact.

Stand up

Among Europeans, 45% have never thought about starting a business; 18% of Europeans have thought about starting a company but gave up on the idea.[56] Therefore we should:

Connect entrepreneurs to schools and universities and celebrate peer-level success stories to create awareness, improve skills and foster individual and cultural attitudes to entrepreneurship. A key opportunity to foster attention for opportunities is in enterprising schools and universities. Strengthening this connection has an effect for both the next generation labour force and the education system. First, teachers and professors can be trained as entrepreneurship developers. Second, potential entrepreneurs can be inspired and encouraged to take action. In interactive presentations, entrepreneurship can be shown as the ability to navigate increased complexity, overcome career barriers, and more closely leverage personal strengths. Third, more entrepreneurial attitude can be measured in a forward-looking way by assessing the mindset of children in school. Starting with local networks between schools, universities and entrepreneurs, this type of intervention could scale up to influence the culture of entire populations. Finally, research shows that individuals are most influenced by those they regard as their peers. A focus on telling the stories of "ordinary entrepreneurs" and how they overcame barriers in practical, relatable ways could do much to foster a culture that promotes entrepreneurship.

Partner to encourage active engagement in start-ups as employees as well as founders. Individual attitudes and skills can be effectively influenced by direct experience in a start-up environment, for example through internship programmes or employment opportunities. These experiences build on school-based programmes and often lead to employees founding their own businesses.

> **Organize school roadshows and share that being an entrepreneur is a great opportunity.**
>
> Global Shaper Hub Torino

> **Every young person should attend at least one action-driven entrepreneurship class during their education.**
>
> Global Shaper Hub Geneva

> **We propose fostering an active collaboration between entrepreneurs and high-school/university professors or students to ensure we progress towards decreasing the gap between education and the marketplace.**
>
> Global Shaper Hub Madrid

It's time for a fundamental change of thinking in Europe. We need to create an entrepreneur-friendly culture that encourages young people to take risks and assume the lead on change and progress in partnership with governments, businesses, civil-society and individuals who support and reward risk-taking.

Kumardev Chatterjee, Founder and President, European Young Innovators Forum

We need to build entrepreneurial culture by 'enterprising the schools' and getting young people talking about business.

Gordon Brown, UN Special Envoy for Global Education

Start up

Among Europeans, 51% say it is difficult to obtain sufficient information on how to start a business; 79% say that it is difficult to start one's own business due to a lack of available financial support.[56] Therefore we should:

Connect a network of resources for start-ups and push private actors at the core of attention to strengthen the European support system. The starting point for more sustainable development is the mobilization of mentors. Moreover, and with particular regard to the focus area of access to capital, connecting actors is of key importance to enable progress towards a more transparent, single European market for risk finance.

Partner to support start-ups and find new models of co-investment for capital supply with complementary resources. The state has shown massive engagement to support entrepreneurship. Realizing the further potential of private actors, co-investment models, in which the state joins private actors to top up investments or private actors join forces to support entrepreneurship, can allow for multiplier effects. Investments in pan-European fund structures support the above-mentioned development towards a European single market for risk finance.

Build solid networks that serve as a financial net.

Global Shaper Hub Brussels

Complement policy frameworks with grassroots-driven initiatives.

Global Shaper Hub Zurich

Inception of the 'yes we can' feeling in the European DNA is a priority.

Global Shaper Hub Lisbon

Create a board of mentors and advisers for young European change-makers.

Global Shaper Hub Düsseldorf

Scale up

Only 31% of companies have unbroken series of revenue growth in years two to five of their existence.[57] Therefore we should:

Connect large corporations and entrepreneurs to monitor the potential for collaboration. Align on a standard format to systematically publish search fields online to boost the development of platforms that can draw on the data.

Partner to realize mutually beneficial relationships. Prepare to further open up from a cultural and an organizational perspective. Conduct experiments on how to realize specific opportunities to step up collaboration between entrepreneurs and large corporations.

The key to the success of the agenda is the mobilization of stakeholders to engage in its realization. For this purpose, the World Economic Forum will work with constituents to create momentum for the agenda, which is driven by different stakeholders across Europe.

> **Global Shapers could organize matchmaking events between entrepreneurs and large corporations.**
>
> Global Shaper Hub Vilnius

> **We need to work on connecting the dots in Europe to foster entrepreneurship.**
>
> Ann Mettler, Executive Director, Lisbon Council

We welcome all comments and feedback relating to the ideas in this document. To provide feedback, please contact europeentrepreneurship@weforum.org

Further Reading

In recent years, there have been a large number of influential publications on the subject of entrepreneurship.

The World Economic Forum has been addressing entrepreneurial ecosystems in several interactive formats and reports. These include the reports *Global Entrepreneurship and Successful Growth Strategies of Early-Stage Companies (2011)* and *Entrepreneurial Ecosystems Around the Globe and Company Growth Dynamics (2013)*, which provide insights on two core questions: 1) What do entrepreneurs perceive to be the difference between entrepreneurial ecosystems around the globe in terms of the availability of the various pillars that make up an ecosystem? 2) Which pillars of an entrepreneurial ecosystem do entrepreneurs view as most important to the growth/success of their companies?

Work on the educational and skills components of the ecosystem includes the Forum reports *Educating the Next Wave of Entrepreneurs* (2009) and *Unlocking Entrepreneurial Capabilities to Meet the Global Challenges of the 21st Century* (2011), which deliver detailed insights on challenges, opportunities and measures to improve entrepreneurship education. Work on specific regions includes *Accelerating Entrepreneurship in the Arab World,* highlighting 10 recommendations to promote vibrant entrepreneurial ecosystems across the region.

At the European level, the *Start-up Manifesto* of the Leaders Club of European Entrepreneurs, created by the Vice-President of the European Commission, Neelie Kroes, specifically targets tech entrepreneurs and delivers a set of recommendations with a focus on policy measures. The manifesto forms a part of the *Start-up Europe* activities pursued by the European Commission and the Lisbon Council, focusing in particular on the digital agenda.

Finally, the following reports give a deeper understanding of the entrepreneurial environment in Europe:

– European Commission (2012), “Entrepreneurship in the EU and beyond”, available at http://ec.europa.eu/public_opinion/flash/fl_354_en.pdf
– Tjan, Harrington and Hsieh (2012), *Heart, Smarts, Guts, and Luck: What it takes to be an entrepreneur and build a great business*, Harvard Business Review Press
– Wilson, Silva (2013), “Policies for Seed and Early Stage Finance”, *OECD Science, Technology and Industry Policy Papers*, No. 9
– OECD (2011), “Financing High-Growth Forms: The Role of Angel Investors”, OECD Publishing
– Chesbrough (2006), *Open Business Models: How to Thrive in the New Innovation Landscape, Harvard Business School Press*

Endnotes

1. The entrepreneurial life cycle is defined here as including the factors influencing an individual to turn an idea into economic activity or join a start-up as an employee, and the factors related to the successful growth of a venture.
2. Northern Europe: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Sweden, the United Kingdom; Central and Eastern Europe: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia; Southern Europe: Cyprus, Greece, Italy, Malta, Portugal, Spain.
3. United Nations Economic Commission for Europe (2012), "Fostering innovative entrepreneurship – Challenges and Policy Options".
4. Http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/.
5. EIM Business & Policy Research (2011), "Do SMEs create more and better jobs?"
6. Cf. Eurostat database.
7. Thank you to Dominic Llewellyn of Numbers4Good for naming these stages.
8. Global Education Initiative (2011), "Educating the Next Wave of Entrepreneurs", World Economic Forum.
9. A recent study by Silicon Valley Bank showed that nine out of 10 start-ups in the United Kingdom are hiring, while an equal number say it is challenging to find workers with the skills they need. Cf. Silicon Valley Bank (2013), "Start-up outlook report".
10. For a general and extensive assessment on entrepreneurs and business-building, cf. Tjan, Harrington and Hsieh (2012), "Heart, Smarts, Guts, and Luck: What it takes to be an entrepreneur and build a great business", Harvard Business Review Press.
11. "Just 17.3% of young Europeans believe there are good business opportunities available and that they have the skills and knowledge required to start a business. This compares to 60.0% in sub-Saharan Africa, 40.0% in Latin America and the Caribbean, and 30.0% in the Middle East and North Africa. Asia Pacific and South Asia was the only region to score lower, albeit only marginally at 16.8%." http://www.gemconsortium.org/news/783/europe%E2%80%99s-young-people-fear-business-failure-and-lack-of-start-up-skills, GEM Consortium (2013). "Global Entrepreneurship Monitor".
12. Diedrichs, E. (2013), "Do SMEs lose their appetite for innovation during the economic crisis?" Blog on Innovationmanagement.se.
13. JA Sweden and Stockholm School of Economics (2011), "Practice makes perfect".
14. European Commission (2012), "Entrepreneurship in the EU and beyond", Flash Barometer 354, http://ec.europa.eu/public_opinion/flash/fl_354_en.pdf.
15. Cf. http://www.mentorsme.co.uk/.
16. Cf. http://enternships.com/.
17. Cf. https://www.founders4schools.org.uk/.
18. Cf. http://www.campus-party.eu, leweb.co, and http://pioneers.io/festival.
19. Cf. http://www.ja-ye.org/.
20. Cf. https://www.improve-innovation.eu/.
21. Cf. www.efer.eu.
22. Cf. unleashingideas.org.
23. Source: Kumardev Chatterjee, Founder and President, European Young Innovators Forum.
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51. Cf. Phonebloks.com.
52. Case study provided by Sven Scheuble, Head, Technology-to-Business, Siemens.
53. Cf. New York Times (2013), “Google Ventures Stresses the Science of the Deal, not the Art of the Deal”.
54. Case study input by Ulrich Spiesshofer, Chief Executive Officer, ABB, during project workshop at Bad Ragaz Group Meeting.
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57. Foster et al. (2011), “Global Entrepreneurship and the Successful Growth Strategies of Early-Stage Companies”, World Economic Forum.

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