

For Entrepreneurs, by Entrepreneurs

How Europe can successfully stimulate knowledge-intensive start-ups
learning from world-class European ecosystems





Students of Delft University of Technology “sell” their idea to a jury consisting of entrepreneurs and investors and to an audience of peers, friends and family during the final presentation of June 2009.

SUMMARY

In economic terms, Europe appears to be lagging behind other major world regions, which means that there is a growing possibility that it will not achieve its Lisbon objective to become the «the most competitive and dynamic knowledge-based economy in the world».

Innovative start-ups and the entrepreneurs who run them thus are crucial for our economy: they provide the jobs that are replacing positions lost in mature and declining businesses, and furthermore they create new growth.

Start-ups thrive specifically in ecosystems that provide the necessary support, and this report is based on the experience of two of the most longstanding and respected entrepreneurial ecosystems in Europe: IESE Business School in Spain and Delft University of Technology in the Netherlands.

Extended questionnaires and interviews with almost 1000 entrepreneurs from these two ecosystems produced a number of interesting, sometimes counterintuitive, insights that are discussed in the following pages.

STIMULATING ENTREPRENEURSHIP: FOR ENTREPRENEURS, BY ENTREPRENEURS

KEY SUCCESS FACTORS FOR ENTREPRENEURSHIP

Business knowledge & experience

INSIGHT 1: Start-up success depends on business knowledge and personal competencies.

Although entrepreneurship is also a matter of ambition and perseverance, the skills and capabilities can be learned.

Entrepreneurship ecosystems

INSIGHT 2: Ecosystems allow entrepreneurs to better and more quickly develop their initial ideas into viable businesses.

More and stronger European ecosystems will deliver more start-ups and achieve higher success rates.

ACTIONS NEEDED FROM STAKEHOLDERS

	(INTER)NATIONAL	LOCAL
BOTTOM-UP / PRIVATE	<p>CORPORATIONS</p> <p>INSIGHT 3: Corporations can provide vital business know-how and experience to start-ups but can also significantly benefit from the product, service and process ideas by participating energetically in the start-up ecosystem.</p>	<p>START-UPS</p> <p>INSIGHT 4: Start-ups can boost their own development and that of others by sharing their experiences in entrepreneurship ecosystems. These ecosystems should be based on trust to allow for fast and quality feedback.</p>
TOP-DOWN / PUBLIC	<p>GOVERNMENTS</p> <p>INSIGHT 5: To be effective, government support of ecosystems and start-ups should be faster, more targeted and less bureaucratic.</p>	<p>KNOWLEDGE CENTERS, INVESTORS, SERVICE PROFESSIONALS</p> <p>INSIGHT 6: Knowledge centers, investors and business service professionals should take the lead in setting up platforms for interaction to facilitate the development of ecosystems.</p>

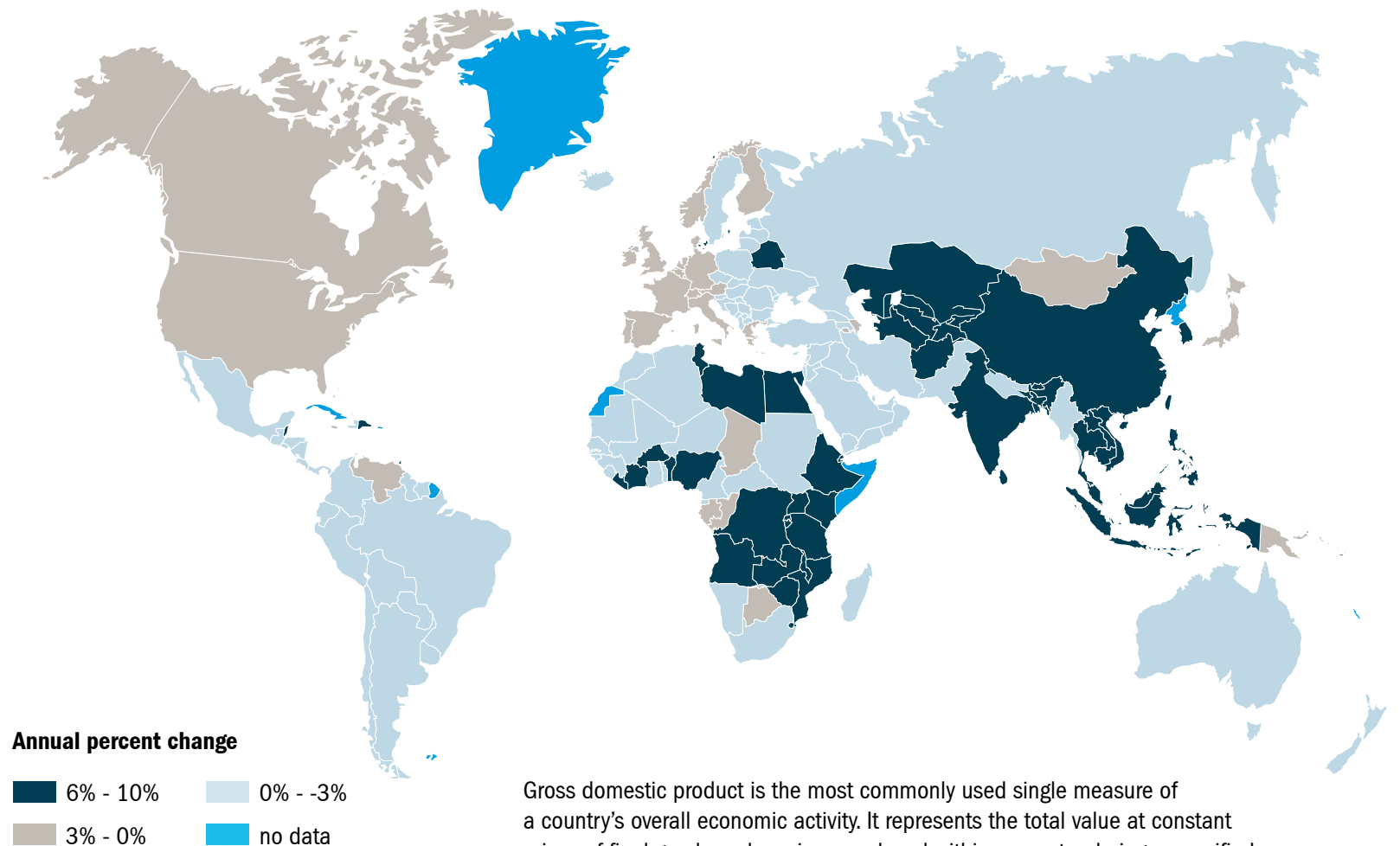
EUROPE URGENTLY NEEDS TO INCREASE THE NUMBER OF SUCCESSFUL START-UP BUSINESSES

ECONOMIC GROWTH IN EUROPE STRUCTURALLY LAGS BEHIND OTHER REGIONS

Structurally speaking, Europe lags behind Asia and America in economic growth and will probably not achieve the Lisbon objective to become the “the most competitive and dynamic knowledge-based economy in the world” by 2010.

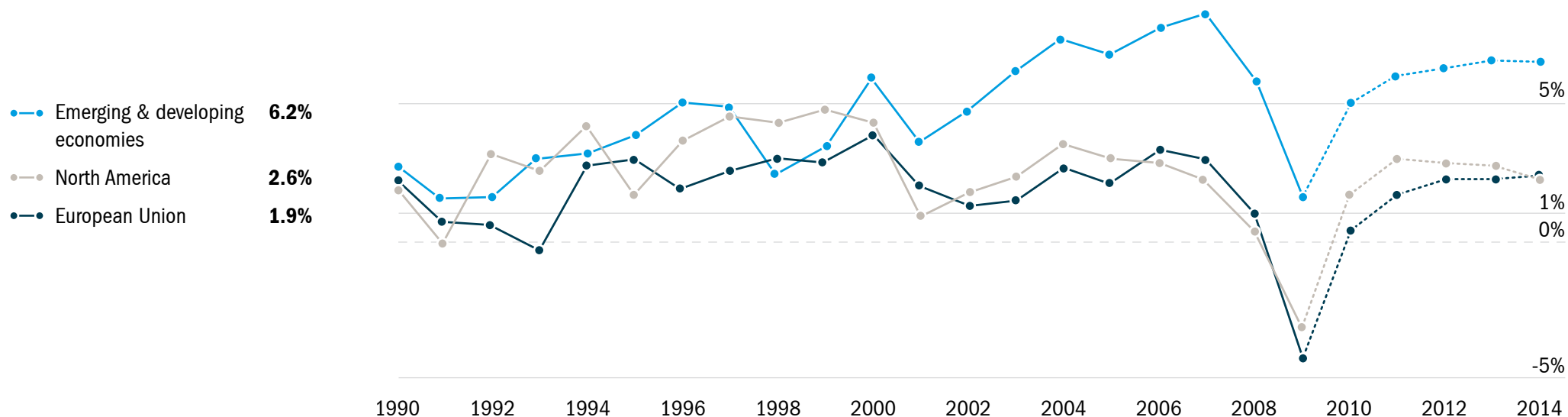
Growth of the national European economies also structurally trails that of not only well-known fast-growth nations like China and India, but also more established countries like the United States.

AVERAGE REAL GDP GROWTH 2010-2014 (BY COUNTRY)



Gross domestic product is the most commonly used single measure of a country's overall economic activity. It represents the total value at constant prices of final goods and services produced within a country during a specified time period, such as one year.

AVERAGE REAL GDP GROWTH 2010-2014 (BY REGION)



There are many reasons for this disparity. One constant for all economies at this time is the demise of older industries and uncompetitive companies.

The contribution to the European economy of agriculture, coal mining, textiles and consumer electronics is no longer as important as it used to be.

As economic activities and companies die out, new ventures have to take their place. A few decades ago, big business names of today like IKEA, Vodafone and Virgin were European start-ups.

And even more recently, the same applied to EasyJet, HTC and TomTom. Start-ups make up more than 60% of new jobs created in an economy, and account for 13 times more patents per employee than established companies¹⁾.

But start-ups are risky. Of all the new businesses started, barely 50% survive the first five years, a statistic that is undoubtedly even lower for start-ups with innovative offerings and business models. It thus is of the utmost importance that Europe increases both the number of innovative start-ups and the rate of their success.

¹⁾ US Department of Labor

Source: IMF World Economic Outlook, October 2009

IESE BUSINESS SCHOOL AND DELFT UNIVERSITY OF TECHNOLOGY PROVIDE VALUABLE INSIGHTS INTO ECOSYSTEMS THAT PRODUCE A LARGE STREAM OF SUCCESSFUL START-UPS

We studied two very different European ecosystems that cover a broad spectrum: from young to experienced, and from technology to business

As we will see, supportive ecosystems are the key to increasing the number of successful start-ups. Both IESE Business School and Delft University of Technology are examples of successful entrepreneurial ecosystems. Both are very successful in that they produce a large stream of start-ups every year. This report reflects the insights and recommendations of the entrepreneurs who are at the forefront of these success stories.

There are significant differences between these two locations that enrich our analysis. At IESE, the entrepreneurs are experienced professionals who have worked in the professional world for some time, and who later obtain a master's level business degree. At Delft University of Technology, the entrepreneurs often start their ventures during their undergrad studies. They thus lack business experience and tend to be more modest and regional in their ambitions. The juxtaposition of these two examples enriches the findings and recommendations of this report.

This report represents the views of almost 1000 participants in these two ecosystems and as such is not an academic analysis but a series of pragmatic suggestions from people who have been in the middle of the fray. Many of them now head successful companies. Others are still wrestling through the first years of company beginnings. And some have shifted their attention to other areas after having unsuccessfully tried to get their businesses off the ground. But all of this study's participants share hands-on experience in setting up a new company.



Location	Delft, the Netherlands	IESE campuses in Barcelona, Madrid, Munich and New York
Education	MSc and PhD	MBA, EMBA, GEMBA
Network	Young professionals	Experienced professionals
Age	20-35 years	30-60 years
Work experience	0-5 years	5-35 years
Nationalities	Netherlands (85%) International (15%)	Spain (50%) International (50%)
Population	500+	6.600
Survey participants	210 (42%)	742 (11%)
Workshop participants	19	15

The ecosystem partners can be categorized into four groups: established corporations, governments, ecosystems facilitators (knowledge centers, investors, and business service professionals) and the start-ups themselves. Each of these four groups has to contribute to setting up this ecosystem and making it work. Without each pulling its weight, the ecosystem will never gain the momentum necessary to make the impact on the European economy that is needed.

INSIGHT 1

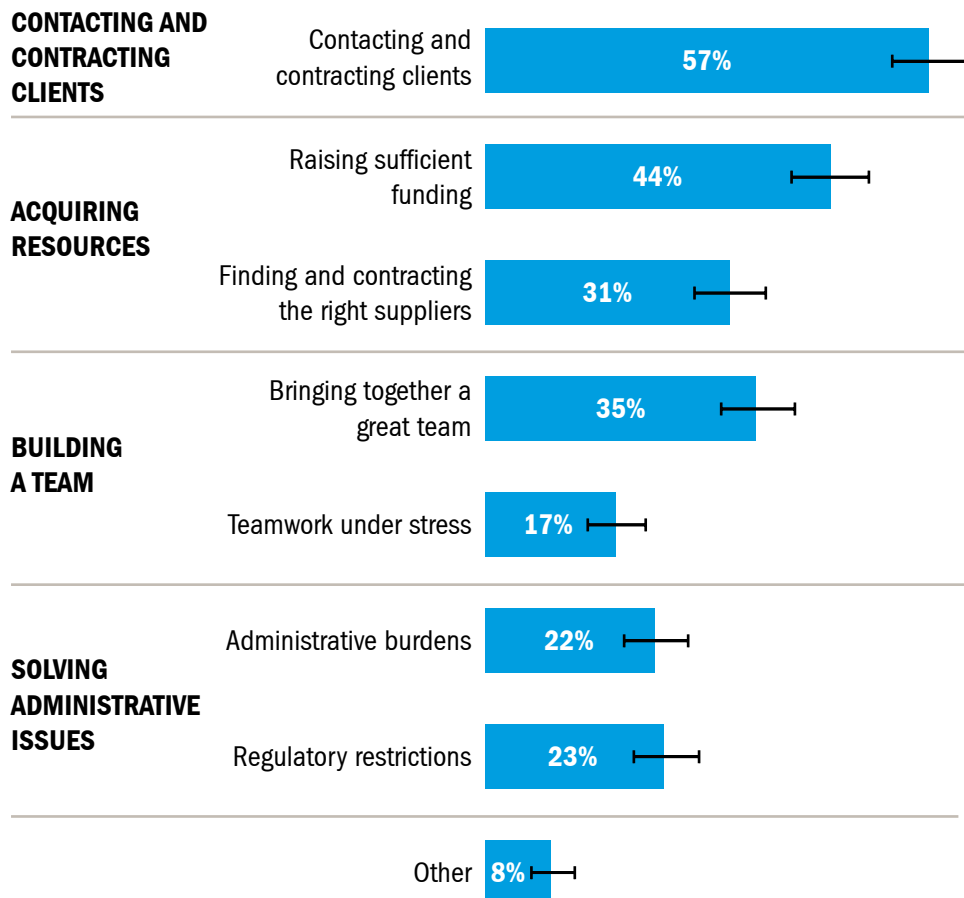
Start-up success depends on business knowledge and personal competencies. Although entrepreneurship is also a matter of ambition and perseverance, the skills and capabilities can be learned.

Getting started is matter of rapidly acquiring the necessary business knowledge and experience

In our study we first looked at the main hurdles that start-ups face. We found these to be mainly in getting to know customers and suppliers, in raising funding and in building the team. Successful ventures surmount these hurdles by gaining rapid access to the necessary business know-how and experience.

MAIN HURDLES TO STARTING A VENTURE INVOLVE CONTACTING AND CONTRACTING CLIENTS, ACQUIRING RESOURCES AND BUILDING A TEAM

WHAT HAVE BEEN THE MOST IMPORTANT HURDLES IN SETTING UP YOUR COMPANY? (N = 383 ENTREPRENEURS)



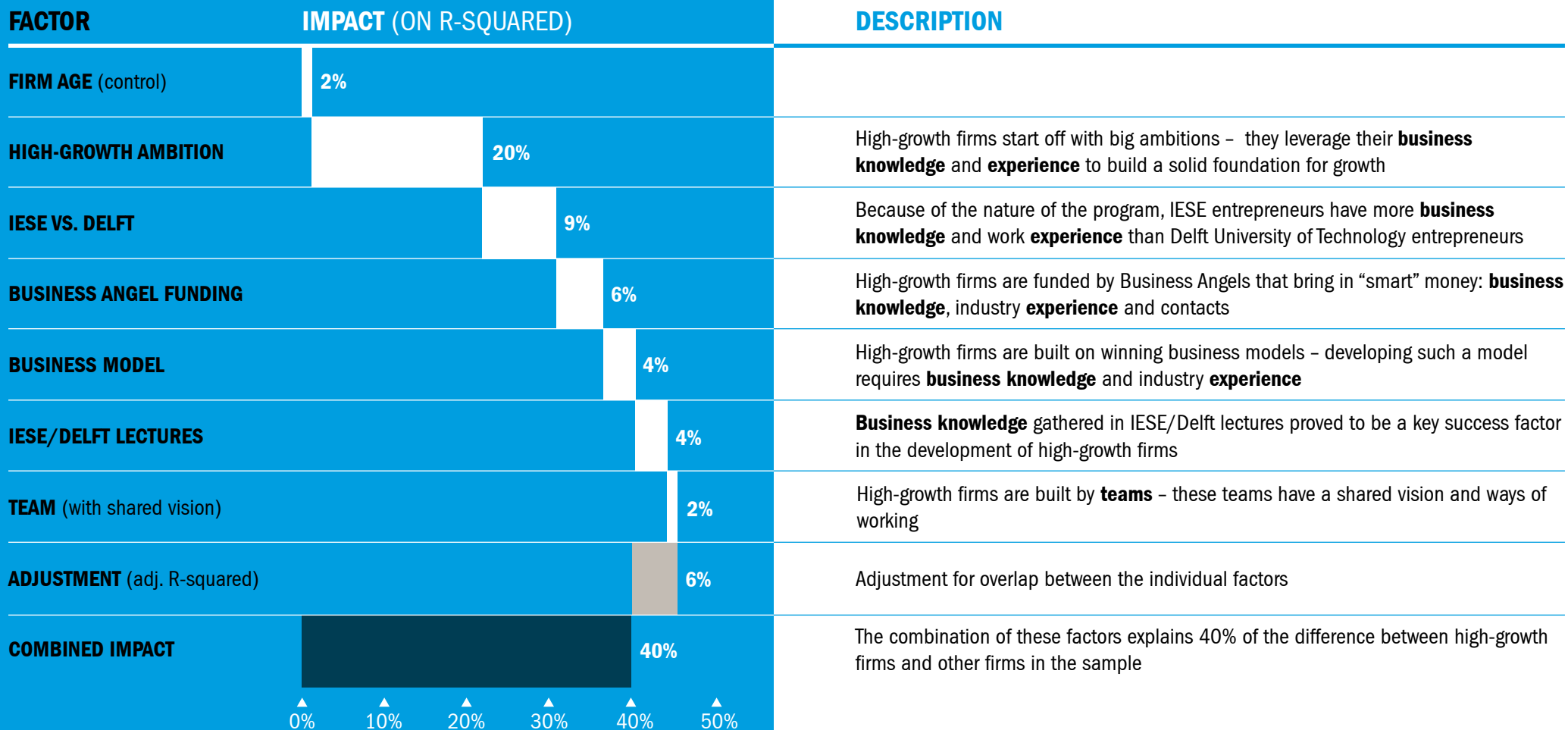
In a detailed analysis we compared 135 firms on 100+ criteria to understand what differentiates sustainable high-growth firms and see whether we could identify key success factors. What we found is that the chance of success is largely determined by business knowledge and experience.

In general, firms founded by the more experienced IESE entrepreneurs grow much faster than Delft University of Technology firms. Due to the nature of the MBA, EMBA and GEMBA programs, IESE entrepreneurs have many more years of work experience under their belt, and they have augmented this experience with significant business knowledge gained during the program.

Joëlle Frijters, Improve Digital "With over 10 years of work experience, you're so much better prepared. You have more visions (with more context), you have a better network, you are able to move things from A to B faster and convince others to come along with you."

HIGH-GROWTH START-UPS ARE BUILT ON BUSINESS KNOWLEDGE AND EXPERIENCE

ANALYSIS OF FACTORS CONTRIBUTING TO GROWTH¹⁾



¹⁾ Dependent variables: Ln (Revenue/firm age) controlled for firm age

Teams are the best source of knowledge and experience – High-growth firms are built by teams – you cannot do it alone. When building these teams, having a shared vision and ways of working are crucial.

Alejandro Bosch, Anko Asesores *“One of the key success factors in the development of the company is to have a team that is based on trust, is complementary, and has a shared vision.”*

Adding **experienced people** to the team is a major driver of success, especially when such additions act not as a coach, but as co-founder/entrepreneur. Firms that add experienced people to the team think bigger, act faster and make more use of industry contacts. For example, of the top quartile Delft University of Technology firms, more than half brought in experienced members to the team. Many promising starters now follow their example.

Hjalmar Van Raemdonck, Ephicas *“We always had the ambition to build a large firm [...] but after participating in the Delft University of Technology WaBP program we realized that we lacked experience. We then added a third person to the team who brings in 10 years of experience. This person really boosted our development and made us shift 10 gears higher. He knows how things work, and when he doesn't he has the connections in the business to find out.”*

Sabin Azua, B+I strategy *“The key success factor in the development of our firm was the extensive work experience of our partners in strategy consulting at large multinationals. This allowed us to develop a business model that differentiates us from our competitors, it gave us credibility in the market, it brought us (technical) knowledge, it gave us a network of references and a good client base from the start.”*

Gregorio Lopez Alonso, Tecnología y Control MedioAmbiental, S.L. *“The key success factors in the development of our firm were the founders' knowledge of the sector, the network of contacts at key clients for launching our product, the founders' technical knowledge of the product, and the management knowledge gathered by education (IESE) and through experience in other companies during my career.”*

Arnar Thorisson, Iceland Invest *“My advice to young entrepreneurs: ‘First get a job and make all the mistakes with other people's money. Then start on your own.’”*

Experience leads to self-confidence and high-growth ambitions – Many starting entrepreneurs aim too low and consequently get stuck with a mediocre plan that has only limited potential for growth and profitability. We found that the 30% of Delft University of Technology start-ups and 40% of IESE start-ups that had high-growth ambitions in terms of revenues and employees were much more likely to actually build a high-growth firm, as they were able to build the foundation for growth right from the start.

Although in some cases a low ambition level originates from a lack of personal ambition, more often it can be explained by a lack of business knowledge and experience that leads to inaccurate assessments of economic dimensions. University students who have limited experience find it especially hard to think in terms of millions instead of thousands.

Jesus de la Fuente, Iniciativas Fotovoltaicas *“What I, with the benefit of hindsight, would have done differently is to be (even) more ambitious and have grown faster. Now the opportunity is gone.”*

Benno van Dongen, co-founder of the Delft University of Technology Writing a Business Plan program: *“Throughout the last 12.5 years that we have organized the Writing a Business Plan program, I have seen so many teams with great innovations but low ambition levels. They simply lack the knowledge and experience to think big.”*

Experience enables start-ups to build innovative and winning business models

– When asked to name the source of their competitive advantage, high-growth firms mention their business models. High-growth firms develop business models that change the rules of the game in an industry. Developing a winning business model requires extensive business knowledge and (industry) experience.

Entrepreneurial behavior is developed through personal and interpersonal competencies.

Good entrepreneurs need more than technical or business skills. The driving force of entrepreneurship comes from a person's character (personal competencies), which enables him or her to make the right decisions in matters that are beyond his or her knowledge. Developing such character can only be done through practice, which takes time, and means that we cannot start early enough with developing these competencies.

J. Jesus de Benito y Alonso, founder of S&P Consulting *“The key success factor in the development of a firm is to work hard, be very honest and generous with people who work with you and always think about customer needs.”*

Arnar Thorisson, Iceland Invest *“The key in developing the firm is endurance and flexibility, and to have a team based on friendship and trust.”*

Entrepreneurial behavior can be learned and developed. Rather than applying business skills – which are necessary, but not sufficient – the real challenge is to develop other competencies that will provide a foundation for business skills. A framework proposed by Prats¹⁾ includes all aspects of the entrepreneur: as a person who makes decisions, as an individual embedded in a network of relationships with others and as a businessperson.

¹⁾ Source: J. Prats, IESE Insight Second Quarter 2009, “Beyond Business Instinct - Competencies Every Entrepreneur Should Develop”

PERSONAL COMPETENCIES

These are competencies that center on the entrepreneur as a person: creativity, determination, integrity, tenacity, emotional balance and self-criticism. Personal competencies are crucial for the exercise of judgment and for learning, both of which are essential for exploiting business opportunities or for overcoming tough times.

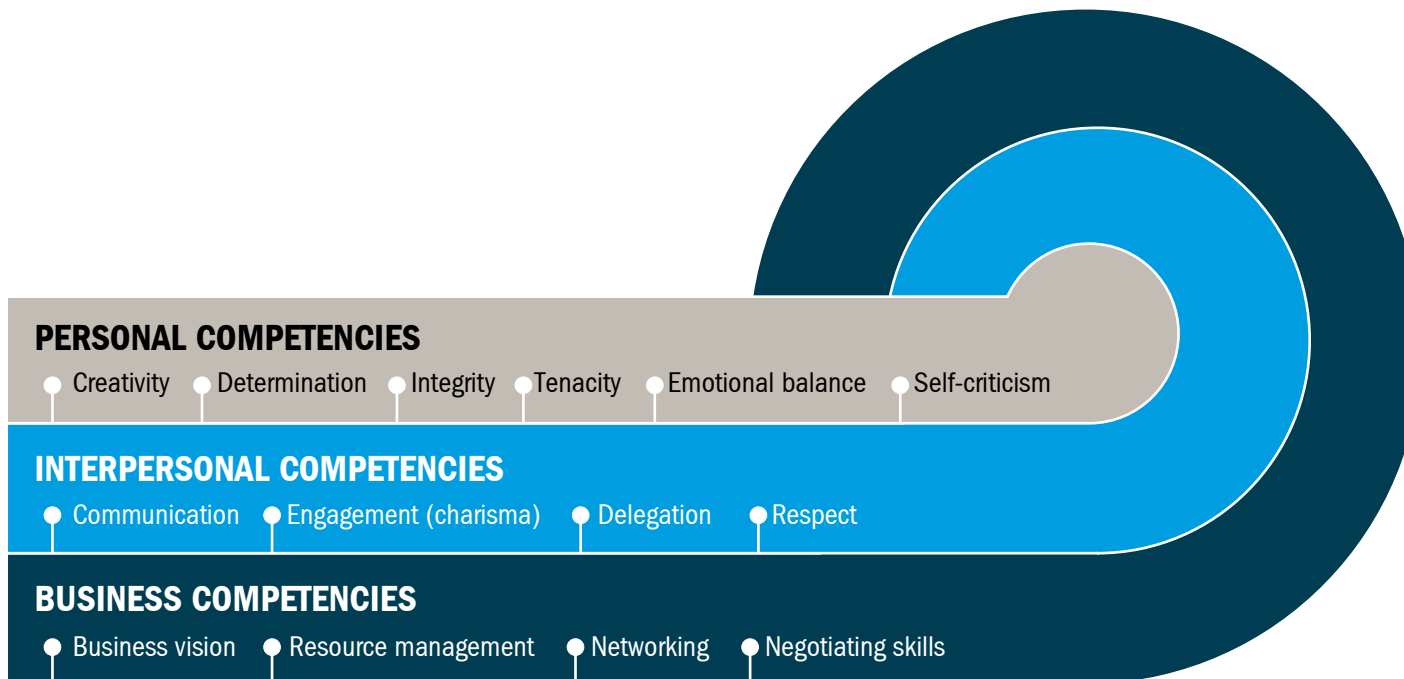
INTERPERSONAL COMPETENCIES

These are competencies which deal with the relationships between the entrepreneur and the people with whom he or she works: communication, engagement (charisma), delegation and respect. For example, interpersonal competencies encompass an ability to effectively communicate a business opportunity to a target audience.

BUSINESS COMPETENCIES

These qualities consist of skills and knowledge that enable an entrepreneur to exploit opportunities: business vision, networking, resource management and negotiating skills. Experience indicates that entrepreneurship is not something a person can learn in a classroom. This does not mean that an entrepreneur does not need theoretical knowledge, but once that knowledge has been acquired, the entrepreneur still has to learn how to use it properly, and this can only be done through practice.

BUSINESS SKILLS HAVE TO BE GROUNDED IN PERSONAL AND INTERPERSONAL COMPETENCIES



INSIGHT 2

Ecosystems allow entrepreneurs to better and more quickly develop their initial ideas into viable businesses. More and stronger European ecosystems will deliver more start-ups and achieve higher success rates.

Ecosystems generate successful start-ups

Start-ups do not emerge like a “deus ex machina” from the garage of a lonely genius. Most if not all of them are the result of the teamwork of inspired people who know that they work within an inspiring and supportive environment – an ecosystem. Silicon Valley in California, the birthplace of HP, Apple, Google and many of the success stories of today, is a well-known example of such an ecosystem. So is “Route 128” around Boston, a business environment that feeds on the medical and biological research centers of the universities in Boston. These ecosystems can be compared to the regional clusters of business activity that Michael Porter identified as the core of national economic strength¹⁾. In an entrepreneurship ecosystem, entrepreneurs have immediate access to teachers, coaches, supporting professionals in law, accounting, patenting and other areas as well as customers and companies with whom they frequently and easily communicate through extensive and intensive network relationships. People who start companies also derive ideas and inspiration from the many other entrepreneurs with whom they rub elbows in the buildings and neighborhoods in which they work. Know-how and experience are at the doorstep.

Within the ecosystem, the venture feeds on two levels of networks: the open network of acquaintances through which the entrepreneurs get in touch with customers, suppliers, financiers and other supporters, and in which they establish their reputation. The second level of network – the “close” network – is even more important. With these contacts, the entrepreneur can speak openly about his or her ideas and worries, and get honest and immediate feedback that helps them develop their ideas better and faster into a viable business. However, a major prerequisite here is trust. The more people trust each other, the more information they will share, and the better feedback they will get.

¹⁾ Porter, Michael E. *The Competitive Advantage of Nations*, London, 1990, MacMillan Press

Igor Opdam, MoodScent *“Often people (in Delft) think ‘I have something that is really unique and when I tell it to people they will steal it from me’. In my opinion it is very important to tell as much as possible without being afraid.”*

Delft University of Technology and IESE are examples of effective ecosystems. The Delft University of Technology Writing a Business Plan program attracts students with a special interest in entrepreneurship (an interest which already sets them apart from other students); as a group they take classes, undertake the same process together, and support and inspire each other during the many ups and downs. Furthermore, there is an atmosphere of “friendly competition” which brings out the best in people: they want to do better than their peers but they are not real competitors in the marketplace.

Since its beginnings 12.5 years ago, the program has been jointly run by Delft University of Technology and a variety of enthusiastic individuals now working at corporate organizations, such as Ernst & Young (accounting), Rabobank (banking), Arnold + Siedsma (legal protection of intellectual property), Holland Van Gijzen (law and notary) and Roland Berger Strategy Consultants (consulting), without any governmental subsidies. The organizations involved support the participants with academic knowledge, on-the job coaching and industry contacts. The program has now been embedded within the YES!Delft initiative – an incubator set up in 2006 by Delft University of Technology in cooperation with the city of Delft. Many students who begin companies after participating in the Delft University of Technology WaBP program move on to the YES!Delft incubator where they receive continued support.

The IESE Business School attracts students from all over the world, who are interested in business and strive for making a positive impact with their work. These students go through the same intensive MBA program together, where they build friendships and relationships that last a lifetime – not only with each other but also with the professors and staff. The small class size, the open-door policy and active mentoring are key to this process. The IESE community supports each individual’s personal and professional growth, fostering a sense of community within the school. Furthermore, the continuous education program geared toward all alumni allows for cross-year interaction.

Jordi Canals, Dean of IESE Business School *“A Hallmark of the IESE experience is the school’s dedication to personal development.”*

ECOSYSTEMS SUPPORT THE DEVELOPMENT OF ENTREPRENEURIAL SKILLS

Developing entrepreneurial skills

The Delft University of Technology and IESE programs confirm that one has or can develop the capabilities required to start a business. This is achieved on the one hand by developing these capabilities and on the other by facilitating contact with other entrepreneurs from the same background to show “how they did it”.

Josep Ll. Sanfeliu, Ysios Capital Partners *“An MBA program is crucial for entrepreneurship because it allows you to gain knowledge and experience in concepts that you are familiar but not entirely comfortable with. It gives you the self-confidence to launch a new venture.”*

The Delft University of Technology and IESE programs are designed to develop needed capabilities. Based on many years of experience, these programs focus on building practical skills instead of theory: “learning by doing” to build entrepreneurial experience. Students have to “sell” their ideas to other participants, to guest speakers, to their coaches and to a jury during the final presentation. Over time, students develop their sales pitches and strengthen their confidence, so that should they start a business they will know they have or can acquire the capabilities necessary.

Hicham Shatou, Icy Solutions *“We started the firm based on a patented technology for continuous water cooling at very precise temperatures that was given to us by the Delft University of Technology. After brainstorming about possible applications we set out to investigate ways to improve the therapy of ice bathing. Working on engineering products to eliminate the hassle of preparation, we designed our first product, the IcyDip. The IcyDip was met with great success on the market, appealing to athletes, trainers, physiotherapists, doctors and coaches alike. IcySolutions won several innovation awards including the STW Valorization Grant for the most promising innovation, the New Venture Best Business Award and recently, the Dutch MKB Innovation Top 100.”*

Developing business opportunities

The Delft University of Technology and IESE programs are great sources of innovative ideas. Students have access to world-class knowledge and experience, the latest technology and many examples of innovative business models. For example, many teams that participate in the Delft program have an idea that is based on a patented technology that is developed at Delft University of Technology, and which they are allowed to use to build a venture. Furthermore, through active on-the-job coaching by professors and consultants, the Delft University of Technology and IESE programs help participants develop their initial ideas into viable business opportunities.

Igor Opdam, MoodScent *“I was asked by a friend to participate in the Delft University of Technology WaBP. We didn’t have an idea, but we had a shared interest in music and clubbing. After some brainstorming about how the club of the future would look like we had the idea of applying ‘scent’ to enhance the clubbing experience. By talking about our ideas to the other students in the program it started to develop into a real business opportunity. When finally the jury of experienced entrepreneurs was very enthusiastic about the idea, we realized that we could actually make a serious business out of it. So then we decided to go for it.”*

ECOSYSTEMS SUPPORT THE DEVELOPMENT OF BUSINESS OPPORTUNITIES

Local “Business Angels” are another valuable resource in a venturing ecosystem. From our analysis of key success factors that differentiate high-growth firms, we found that many are financed by Business Angels (private investors).

On the one hand it can be argued that Business Angels might be good at picking high-growth firms, but they often also bring “smart money” to the table. With their business knowledge and experience, they can be an incredibly valuable coach/guide for entrepreneurs, and their personal contacts in the industry can open doors that otherwise would have been locked.

The 18% of IESE firms and 10% of Delft University of Technology firms that were funded by a Business Angel were much more successful than those that were not.

Arnar Thorisson, Iceland Invest *“What I, with the benefit of hindsight, would have done differently is to find a Business Angel in the beginning, and make more use of external resources.”*

Developing the firm

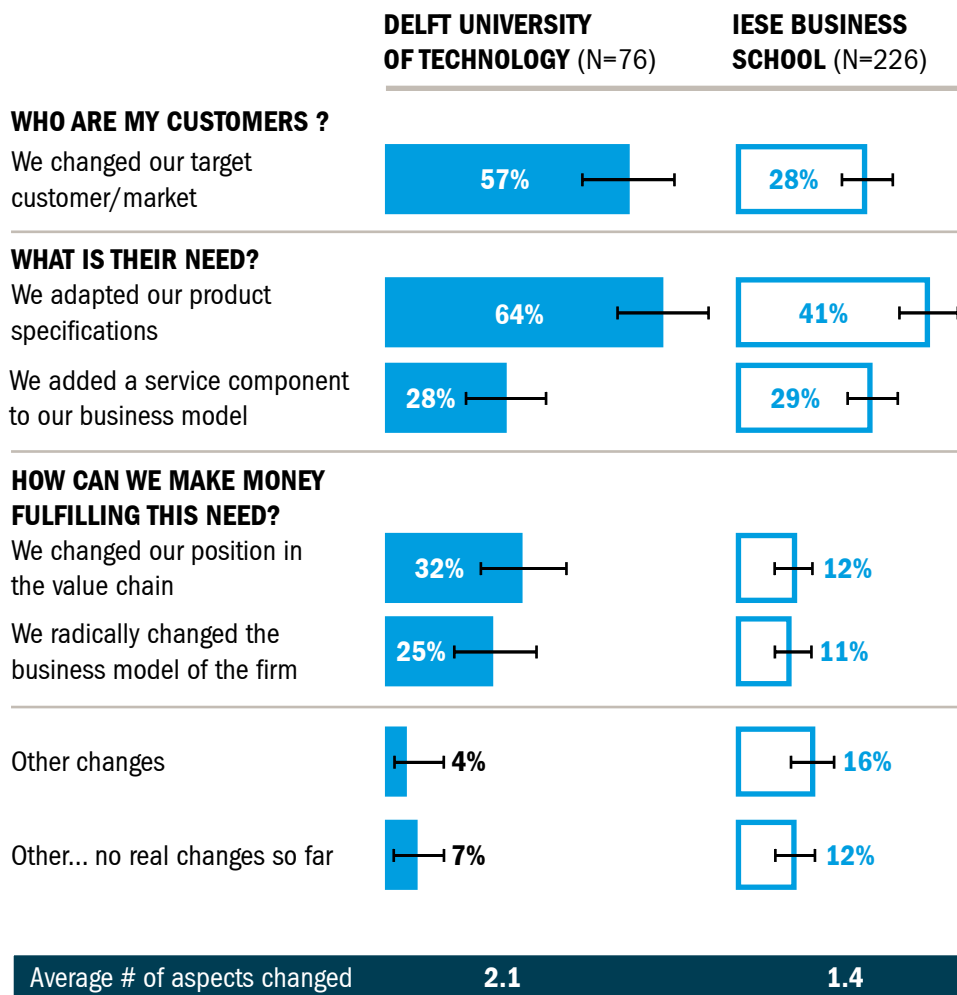
Start-up is not a linear process with carefully predetermined steps. Adjustments and iterations are inevitable; one cannot have it right from the start. First of all, it is almost impossible at the beginning to envision what the business is going to look like. Since most ventures start with limited or insufficient know-how about customers and suppliers, and many are based on new technologies, most of them come to a point when they (finally) fully understand the details of what the customer needs or the supplier can supply. This then necessitates a redesign of product or service that can have serious implications on how things work within the business. Furthermore, the world is continuously changing, and entrepreneurship is about chasing a moving target. Entrepreneurs must question every premise on which their venture is based: “Who are my customers?”, “What is their need?” and “How can we make money fulfilling this need?” Only about 10% of all start-ups in our study did not fundamentally change any aspect of their original plan.

Looking at the difference between IESE entrepreneurs who benefit from business experience and formal business training and Delft University of Technology entrepreneurs, we can conclude that extensive business knowledge and experience help, but are not enough to respond point for point to the dynamic forces that make a start-up. The iterative return to the basics of a business model requires a considerable amount of flexibility and ingenuity so that problems can be faced quickly and successfully. One cannot do this alone – the ecosystem is essential for providing fast and quality feedback for the development of the firm.

STARTING A BUSINESS IS AN ITERATIVE PROCESS THAT REQUIRES FAST AND QUALITY FEEDBACK FROM THE ECOSYSTEM

HOW DID YOU ADAPT YOUR INITIAL IDEA OVER TIME?

(SELECT ALL THAT APPLY)



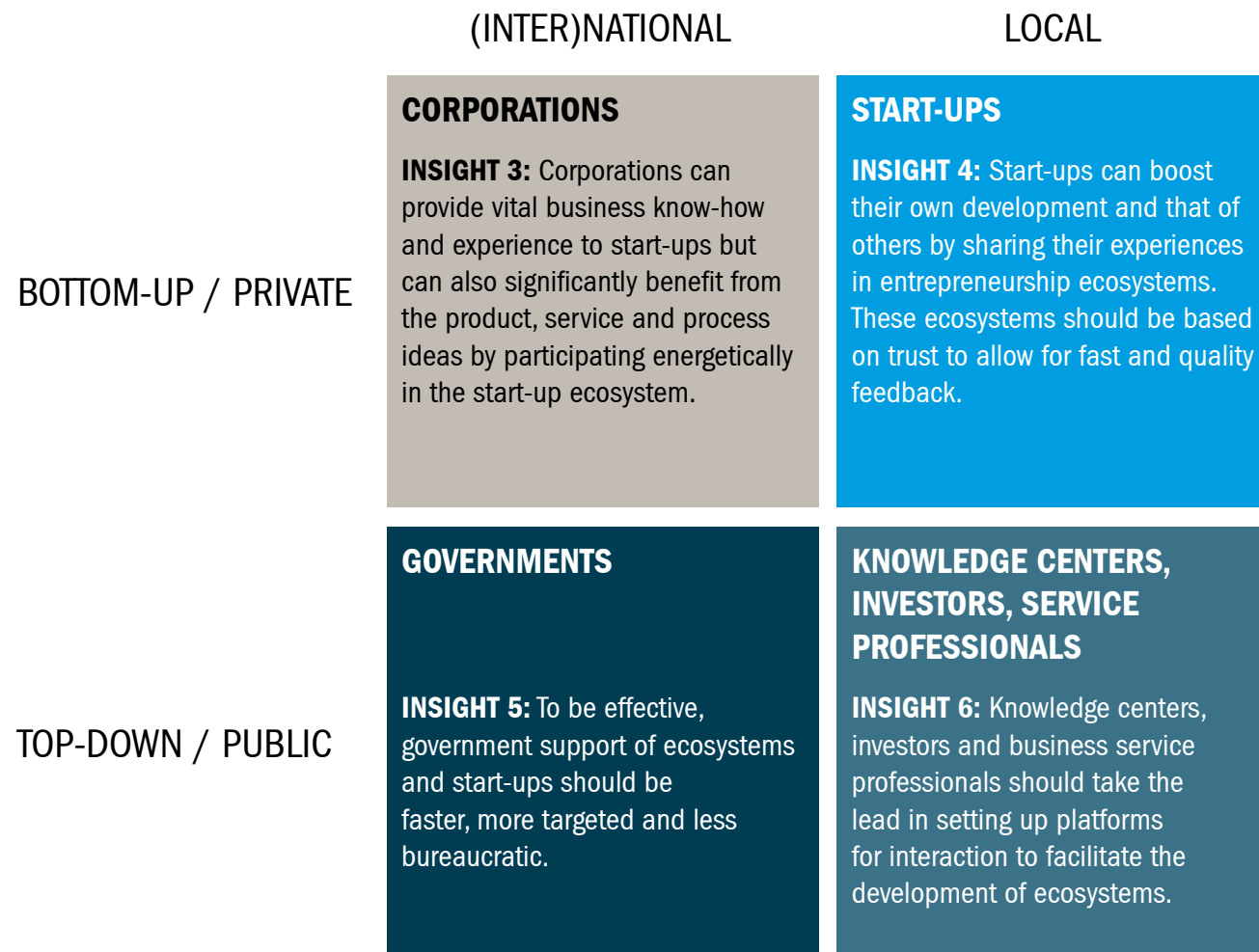
More and better European ecosystems will deliver more start-ups and achieve higher success rates

Stimulating start-ups is not rocket science but rather a matter of establishing the ecosystem that provides the crucial experience, know-how and support that start-ups need in their difficult first months and years.

Our queries and interviews have shown that a well-developed ecosystem is the most important foundation for launching large numbers of successful start-ups, and that this ecosystem depends on active involvement of four groups of participants: established corporations, the government, the local university or ecosystem facilitators (knowledge centers, investors, business service professionals) and the entrepreneurs themselves. In the following pages we will discuss each of these groups individually.

The development of these ecosystems depends on support in two dimensions, public vs. private and local vs. (inter)national. Public support comes from “above” in the form of infrastructure and programs initiated by public authorities. Private support can range from venturing sponsorship by major corporations to advice from a local peer.

BUILDING AN EFFECTIVE ECOSYSTEM REQUIRES COOPERATION BETWEEN ALL STAKEHOLDERS: CORPORATIONS, START-UPS, GOVERNMENTS AND KNOWLEDGE INSTITUTES



INSIGHT 3

Corporations can provide vital business know-how and experience to start-ups but can also significantly benefit from the product, service and process ideas by participating energetically in the start-up ecosystem.

Effective networks between corporations and start-up ventures are not a new phenomenon

Apple, Google and Nokia maintain extensive networks of small companies, to name a few. Many of these small companies are start-ups that not only take on subcontracted work but also supply the larger firms with innovative ideas. Companies like Intel and Motorola have established in-house venture capital firms. The pharmaceutical industry is known for its extensive involvement with venture companies often associated with universities and research institutes. For corporations, buying from start-ups can be a very powerful way to innovate. In their experience, start-ups often are more effective and efficient in both originating innovative ideas and in developing them into usable products. In Europe, successful ecosystems have often arisen around corporate operations. Examples include Espoo (around the headquarters of Nokia), Toulouse (Airbus), Eindhoven (Philips and ASML), München (BMW and Siemens) and Basel (Roche and Novartis).

For the start-up and its entrepreneurs, corporations can be both a critical launch customer as well as a highly valued source of experience and know-how. In the preceding pages we discussed how early commercial contacts play a crucial role in the first months of a start-up. Buying innovative products from start-ups thus creates a market. For entrepreneurs, we have found that having a rapid external feedback loop (contact with potential customers) is essential in establishing innovative start-ups and that contracting clients is one of the main hurdles to starting up an (innovative) venture. Corporations can take on this role. We also mentioned how important experience and know-how are for the survival of a start-up in its first months. Corporations are particularly suited to providing this experience and know-how.

Cooperation between (large) corporations and start-ups can be organized in a number of ways, for instance:

Exchange programs between corporations and entrepreneurs

- > Development programs where corporate talents build up entrepreneurial experience at start-ups.
- > Retention programs where corporate talents can work at a start-up as a sabbatical.
- > Experience programs where young entrepreneurs build up business knowledge and experience at corporations, e.g. within a corporate intrapreneurship team.
- > Recruitment programs in which talents who are deliberating between an entrepreneurial career and a corporate career can work up to two years on the development of their own business (related to the corporation's business) with a job guarantee in case they decide not to continue their start-up.

Joint business development (co-creating) programs between corporations and entrepreneurs

- > Joint development of innovative business ideas with rapid feedback loops between both parties.
- > “Develop an iPhone application” program set up by Apple and Stanford, where young entrepreneurs develop applications for corporate platforms/products (a great way to solve the chicken and the egg problem prone to firms that develop new markets).

Trying & buying innovative products from start-ups

- > Corporations need to start buying from start-ups and provide rapid feedback.
- > As the first sale is the hardest, governments should subsidize buyers of innovative products from start-ups and take away risks that might keep corporations from buying (see also section on governments).

The exchange of knowledge and experience works both ways: more than 40% of participants in the programs that eventually quit the development of their start-up took a job at a (large) corporation and engaged in intrapreneurship.

Michiel Visser 't Hooft participated in the Delft University of Technology WaBP program in 2001. The program made him realize that he had or could develop the knowledge and skills required to start a business, but for personal reasons he did not continue in the start-up for long. Later on in his career however, he successfully used his start-up experience when with a small team of intrapreneurs at Heineken he introduced the coffee brand “Bazar”.

ACTIONS THAT CORPORATIONS SHOULD TAKE

WHAT

CORPORATIONS AND START-UPS SHOULD EXCHANGE KNOWLEDGE AND EXPERIENCE

CORPORATIONS SHOULD CO-DEVELOP MORE WITH START-UPS AND PROVIDE QUICK AND QUALITY FEEDBACK

CORPORATIONS SHOULD BUY MORE FROM INNOVATIVE STARTUPS

WHY

Corporations can benefit from entrepreneurial ideas and spirit

Corporations can attract, retain and develop talented employees

Start-ups can benefit from business knowledge and experience which are key to building high-growth firms

Corporations can benefit from entrepreneurial ideas and spirit

For start-ups, a rapid external feedback loop is key to establishing a company

For **corporations**, buying from start-ups can be a powerful way to innovate

For **start-ups**, contracting clients is the main hurdle to starting up an (innovative) venture

HOW

Exchange programs between corporations and start-ups

- > Corporate development /retention programs at start-ups
- > Experience programs for young entrepreneurs at corporations
- > Recruitment programs that let hesitant talents work on their own business

Joint business development programs

- > Joint development of innovative business ideas with quick feedback loops
- > “Develop an iPhone application” programs where start-ups develop applications for corporate platforms/products

Trying & buying innovative products from start-ups

- > Corporations need to start buying from start-ups and provide quick feedback

INSIGHT 4

Start-ups can make an essential contribution by sharing their experiences in their ecosystems.

Start-ups should set up more ecosystems (for entrepreneurs, by entrepreneurs) to benefit from cooperation with each other. This cooperation can spark a self-supporting cycle, in which more successful ecosystems build up critical mass and start attracting the interest of investors and professional services firms (lawyers, consultants, insurers, media), that together shape an environment in which new firms can flourish. These ecosystems should not be based on the “drink-and-small-talk” type of networking. Instead, successful ecosystems are communities of people who have built up strong trust-based relationships with each other within an institutional setting that allows for cumulative learning.

What we found is that entrepreneurs make an essential contribution to each others' success:

- > We have found that ecosystems create entrepreneurs by inspiring/motivating potential entrepreneurs and validating their ability to develop the necessary skills (demystification of entrepreneurship).
- > Ecosystems built on trust enable rapid and quality feedback (peer coaching) that allows entrepreneurs to better and more quickly develop initial ideas into viable businesses.

An important eye-opener to and an amazing motivator for entrepreneurship as a serious career option is the personal contact one can have with entrepreneurs who talk passionately about their experience. Personal contact with successful entrepreneurs with the same background (e.g. fellow students) has much more influence than, for instance, coverage about entrepreneurs in the media. Participants typically responded to the realization that “if he/she can do it, I can do it”.

Roy Campe, Actiflow *“Speaking to other (successful) entrepreneurs that were studying here 5 years before, made me realize I could do it too.”*

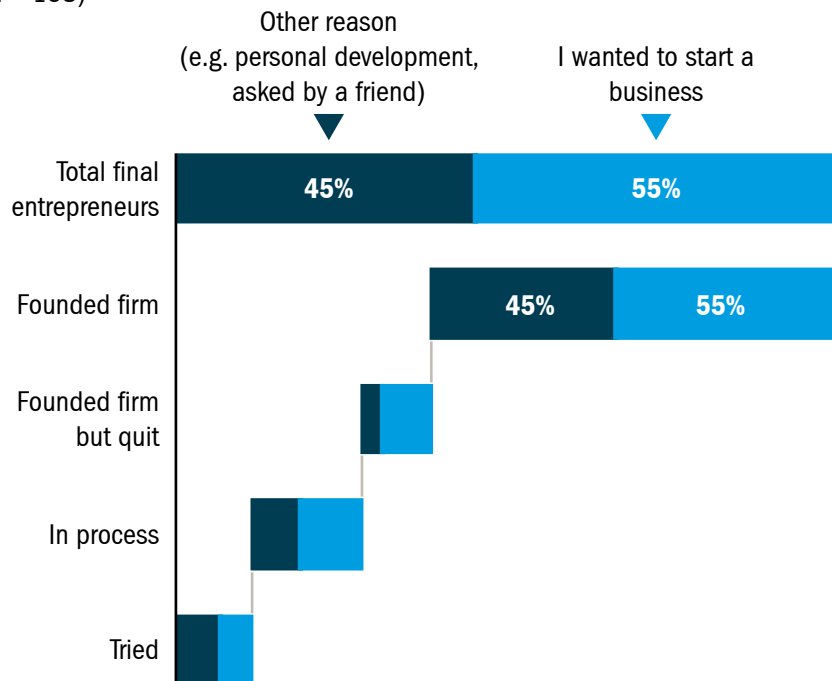
It is important to note here that entrepreneurs who mention that the Delft University of Technology or IESE programs made them aware of the option of entrepreneurship, or who mention that the programs made them realize they have or could develop the required skills and knowledge, have been just as successful as other entrepreneurs, both in terms of survival (see figure, page 26) and growth.

ECOSYSTEMS CREATE ENTREPRENEURS BY VALIDATING THAT ONE HAS OR CAN DEVELOP THE NEEDED CAPABILITIES AND BUSINESS IDEA

HOW ENTREPRENEURSHIP PROGRAMS CREATE ENTREPRENEURS

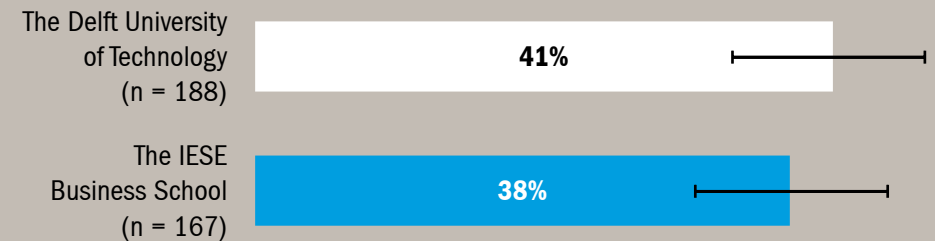
Programs create entrepreneurs...

WHY DID YOU PARTICIPATE IN THE TU DELFT WABP PROGRAM?
(n = 158)

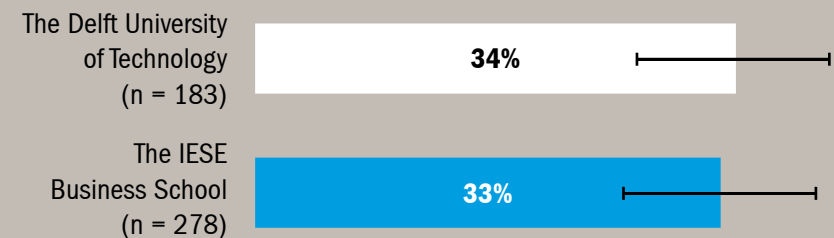


...by motivating and validating

WHAT MADE YOU AWARE OF THE OPTION OF AN ENTREPRENEURIAL CAREER?



WHAT MADE YOU REALIZE YOU HAVE OR COULD DEVELOP THE SKILLS REQUIRED TO START A BUSINESS?



ACTIONS THAT **START-UPS** SHOULD TAKE

WHAT

START-UPS SHOULD SET UP MORE ECOSYSTEMS TO BENEFIT FROM COOPERATION WITH EACH OTHER

WHY

Ecosystems **create entrepreneurs** by inspiring and motivating (potential) entrepreneurs and by validating that one has or can develop the capabilities to start a firm

Ecosystems built on trust enable quick and quality feedback (peer coaching) that allows entrepreneurs to **develop** their initial ideas **better** and **faster** into **viable businesses**

HOW

Start building relationships with other entrepreneurs

Join entrepreneurship ecosystems

INSIGHT 5

To be effective, government support of ecosystems and start-ups should be faster, more targeted and less bureaucratic.

There is no doubt that the many government support programs that exist at the European, national and local levels are well intended. And there are a good number of examples of ventures that succeed thanks to government support. This applies in particular to the most innovative companies that may require considerable up-front outlays to develop and commercialize the underlying technologies.

Javier Hernandez, Ekicells Energy SL *“One of the key success factors in the development of the firm was the institutional support and the subsequent investment aid for the project which later enhanced its credibility in seeking investors.”*

Matching subsidies and support with the needs of the start-up

The participants in our study noted that too often, governments “coddle” promising entrepreneurs so much that the business suffers.

Governments promote subsidy programs offered by the local, national and international authorities. Being dependent on subsidies for funding has serious implications. Due to the innovative nature of many start-ups, the window of opportunity for launching new products is often very limited. As innovative start-ups are difficult to assess, subsidies are often provided by specialized funds or institutions for each stage of development.

Consequently, start-ups submit special paperwork for each stage of development and for each application that addresses the specific requirements of the fund. This means that over the course of the development of the product, start-ups have to convince many different people in different ways to receive different kinds of funding.

Furthermore, many subsidies aim at perfection of the product rather than its (early) commercial success. Therefore the development of the product takes too much time. When the product is finally launched, the real opportunity is (partly) lost as a competitor has often been able to get a similar product to the market faster.

Rather than spending more money in the traditional way, the subsidy system should be smarter and better integrated. Ideally, an entrepreneur would have an “account manager” who sets specific milestones that the entrepreneur has to meet to take part in the full subsidy trajectory from idea to launch. These subsidies should then be focused on getting the product to the market instead of doing more research.

Financieel Dagblad, July 30, 2009 *“When we evaluate our projects of the last 20 years, we see that projects that did not get any government subsidy are more successful in the international market than projects for which we did get a government contribution. The only explanation we can think of [...] is that as the window of opportunity to launch a new technology, product or service is often very limited [...] and because it takes a very long time to get government contribution and the fact that the market can already take notice of your idea, the innovative aspect is already lost before the project is introduced on the market.” Anonymous comment on the article “Green subsidies for SMEs”*

Hjalmar Van Raemdonck, Ephicas *“It would be great to have an ‘account manager’ that really understands our business plan, sets milestones, and commits to handing out subsidies when we meet these milestones. This would avoid that we have to explain our story over and over again, thereby losing a lot of time.”*

TIME-TO-MARKET IS KEY FOR HIGH-GROWTH FIRMS, BUT CURRENT SUBSIDY SYSTEM IS TOO SLOW TO HAVE AN IMPACT

TIME-TO-MARKET IS A KEY SOURCE OF COMPETITIVE ADVANTAGE FOR HIGH-GROWTH FIRMS¹⁾

KEY SOURCES OF COMPETITIVE ADVANTAGE

- > Business model
- > Time-to-market
- > Employee enthusiasm

NON-SIGNIFICANT SOURCE OF COMPETITIVE ADVANTAGE

(Don't differentiate high-growth firms from other firms)

- > Better solution
- > Unique feature/functionality
- > Customer service/responsiveness
- > Innovation/new technology
- > Product price

CURRENT SUBSIDY SYSTEM IS TOO SLOW TO HAVE AN IMPACT

Due to its innovative nature, the **window of opportunity** for launching new products is often limited

As innovative start-ups are difficult to assess, subsidy is often provided by **specialized funds** for each stage of development

Start-ups have to **apply to different funds** with a different plan for each stage of development

Start-ups have to **convince many different people** according to different criteria each time

Many subsidies stimulate **product perfection** rather than push the product to the market

Development of product takes **too long**, often resulting in a lost opportunity

SIMPLIFY REGULATION AND MAKE IT EASIER TO COPE

In general, participants found that regulation in Europe is cumbersome and bureaucratic, and not at all conducive to entrepreneurship. When the European Union passed its Small Business Act in 2008 it found that of its entrepreneurs²⁾:

- > Two-thirds found the government paperwork for establishing a new company very cumbersome.
- > More than 60% thought that legislation creates a disproportionate and unnecessary administrative burden on their company and almost 90% believed that government should take measures to alleviate the administrative burden.
- > More than two-thirds found that the education system did not deliver basic skills needed to start up a company, and nearly 90% thought entrepreneurship is not sufficiently reflected in the school curricula.
- > More than three-quarters of respondents felt that they could not sell products to the government because they had no access to public procurement channels
- > More than half thought it would be a good idea to establish European Business Centers to support small businesses.

Regulation is an area in which governments should consider starting “small business desks” that help ventures navigate the difficult and time-consuming regulatory waters.

¹⁾ Dependent variables: Ln (Revenue/firm age) controlled for firm age; P < 0.05

²⁾ Source: Response Statistics for Small Business Act for Europe, EU, 2008

ACTIONS THAT THE GOVERNMENT SHOULD TAKE

WHAT

GOVERNMENTS SUPPORT OF ECOSYSTEMS AND START-UPS SHOULD BE FASTER, MORE TARGETED AND LESS BUREAUCRATIC

WHY

Time-to-market is crucial for growth of innovative firms, but current subsidy systems are too slow to have an impact

Regulation is cumbersome and bureaucratic

HOW

Set up a subsidy system that ensures that innovations get to the market faster

- > Integrate subsidies - hand out subsidies based on milestones for a complete trajectory from idea to launch
- > Set up an independent "seal of approval" of the feasibility of the business plan to provide credibility
- > Subsidize buyers of innovative products from start-ups
- > Subsidies for investors in innovative starters

INSIGHT 6

Knowledge centers, investors, and business service professionals should take the lead in setting up platforms for interaction to facilitate the development of ecosystems.

Facilitating the development of the entrepreneurial ecosystem

Ecosystems consist of loose and close networks. Loose networks of acquaintances serve as contact points from which commercial links with customers and suppliers arise, and information is passed on. Loose networks not only deliver names and knowledge about what the name can deliver for the start-up but, more importantly, qualitative information like reputation. These contacts are the starting point of the delivery chain that is the backbone of any start-up business model. Close (tight) networks are even more important because they create trust and self confidence. It is within the close network that the entrepreneur can share his/her concerns, worries and confidences. Effective ecosystems provide both loose and close networks to give entrepreneurs choice and access in support of his or her venture. In effective ecosystems, such network partners are close at hand and accessible, and their support is delivered at competitive rates.

In the end, building ecosystems of entrepreneurs depends on the appropriate empowerment of people.

Since the core of the ecosystem is the relationships between entrepreneurs, forcing it too much might destroy it. Hence the motto: “For entrepreneurs, by entrepreneurs”. A successful ecosystem needs:

- > A structured program built around an institution that provides credibility, attracts talented people and ensures a stable organization for years (decades) that provides for a learning process.
- > A small community that commits to the group and to each other.
- > Focus on learning by doing (actual process and relationship building).
- > Innovative technology/insights (e.g. innovative patented technology that can be provided to (potential) entrepreneurs, or insights into innovative business models).
- > World-class knowledge and experience that is shared through on-the-job coaching.

Once an ecosystem of entrepreneurs is in place and starts building critical mass, it attracts the attention of investors and business service professionals. Extending the ecosystem follows the same process as with entrepreneurs: it cannot be directed from the outside but should come from within. For example, the Business Angel network at IESE has been set up by a group of individuals who took a class on “how to invest in high-tech firms”, after which they decided to put things in practice.

Javier Hernandez, Ekicells Energy SL “We have to facilitate access to ecosystems of professionals that accompany the entrepreneur (venture consultants, VCs, advisors, interim managers, etc.). Why lose time learning what others already know?”

ACTIONS THAT ECOSYSTEM FACILITATORS SHOULD TAKE (KNOWLEDGE INSTITUTES, INVESTORS, BUSINESS SERVICE PROFESSIONALS)

WHAT

KNOWLEDGE CENTERS, INVESTORS AND BUSINESS SERVICE PROFESSIONALS SHOULD TAKE THE LEAD IN SETTING UP PLATFORMS FOR INTERACTION TO FACILITATE THE DEVELOPMENT OF ECOSYSTEMS

WHY

Ecosystems allow entrepreneurs to better and more quickly develop their initial ideas into viable businesses. More and stronger European ecosystems will deliver more start-ups and achieve higher success rates

HOW

Building ecosystems is about **empowering people** – if you force it too much you might destroy it

Set up **structured programs around an institution** with stable, long-term organization to ensure learning process

Keep it a **small community** with commitment to group

Focus on **learning by doing**

Provide innovative technology/insights (e.g. provide innovative patented technology to (potential) entrepreneurs)

Share world-class knowledge and experience through on-the-job coaching

IN CONCLUSION

Europe urgently needs to increase its flow of successful start-ups.

New start-ups lack experience and know-how.

More and better entrepreneurial ecosystems with networking coaching, training and timely financing are key to building experience and know-how.

Corporations and entrepreneurs have the responsibility to foster and benefit from increased cooperation by exchanging knowledge and experience
(for entrepreneurs, by entrepreneurs).

Knowledge institutes and governments play a productive role in building and strengthening ecosystems and effective support structures.

Entrepreneurship is often described as a benevolent virus. This virus is highly contagious and most of the members of ecosystems -- including the participants in the IESE Business School and Delft University of Technology ecosystems -- say they have contracted the virus there. These ecosystems have also helped participants nurture their entrepreneurial virus with ideas, inspiration, know-how and experience. Up to 50% of the participants have started ventures.

60% of participants in the programs that have not set up a firm are in some way involved in entrepreneurship, and over 95% intend to start a firm some time in the future. Once "it's in your blood", it is there forever.

WE WOULD LIKE TO THANK ALL PARTICIPANTS IN THE STUDY AND SPECIFICALLY THE PARTICIPANTS IN THE WORKSHOPS FOR THEIR SUPPORT AND INSIGHTS

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IESE's Global Executive MBA attracts business leaders from all over the world. The experience of completing an international MBA while working means that the knowledge learned in the classroom is immediately put into practice.



APPENDIX

Insight into the programs

To understand how to stimulate entrepreneurship, we studied two examples of world-class European entrepreneurship ecosystems

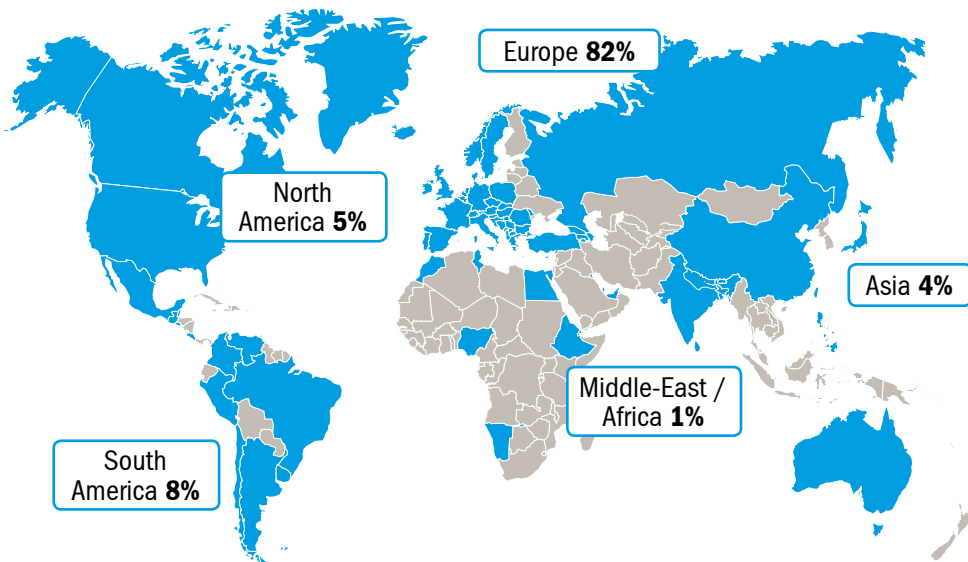
When we talk about entrepreneurship, the United States often comes up as the best-in-class, global benchmark. Though we can learn a lot from the US, Europe has its own path to follow. The European environs are very different from the US. Europe is not (yet) a single, homogeneous market, and language barriers and cultural differences significantly complicate the development of start-ups, to name but a few of these differences.

Such differences mean that the US cannot necessarily serve as our model. But another important reason to study European entrepreneurship ecosystems is to counter the belief that Europe is not entrepreneurial. Europe is certainly home to world-class ecosystems that match their American counterparts. By studying these ecosystems we aim to understand how innovative knowledge-intensive start-ups are stimulated within them.

We studied two European ecosystems that have impressive track records: the network of students and alumni of the “Writing a Business Plan” program at Delft University of Technology and the network of students and alumni of IESE Business School. In total, almost 1000 (potential) entrepreneurs participated in our surveys and workshops and more than 50 people from a range of stakeholders have been interviewed about our recommendations. Although the large majority of participants are European, study participants come from a wide range of 57 countries from all continents, representing the international orientation of both programs.

WE STUDIED TWO VERY DIFFERENT EUROPEAN ECOSYSTEMS THAT TOGETHER COVER A BROAD SPECTRUM OF ENTREPRENEURIAL SPIRIT: FROM YOUNG TO EXPERIENCED, AND FROM TECHNOLOGY TO BUSINESS

PARTICIPATION IN RESEARCH



Location	Delft, the Netherlands	IESE campuses in Barcelona, Madrid, Munich and New York
Education	MSc and PhD	MBA, EMBA, GEMBA
Network	Young professionals	Experienced professionals
Age	20-35 years	30-60 years
Work experience	0-5 years	5-35 years
Nationalities	Netherlands (85%) International (15%)	Spain (50%) International (50%)
Population	500+	6.600
Survey participants	210 (42%)	742 (11%)
Workshop participants	19	15

The Delft University of Technology
“Writing a Business Plan” program is a good
case study for understanding start-ups that
arise from (technical) university students and
young professionals.



A successful example of active stimulation of entrepreneurship can be found in the Delft University of Technology Writing a Business Plan program (WaBP), established in 1996 by strategy consultants Benno van Dongen and Martijn van der Mandele in cooperation with Delft University of Technology in the Netherlands.

With its vision “for entrepreneurs, by entrepreneurs”, WaBP’s objective is to stimulate entrepreneurship by linking students and PhD candidates in a network that currently reaches over 500 alumni. Students who follow this elective course are guided through the initial phases of starting up a new venture by professional coaches and fellow entrepreneurs. The program has now been embedded within the YES!Delft initiative – an incubator set up in 2006 by Delft University of Technology in cooperation with the city of Delft. Many students who begin companies after participating in the WaBP program move on to the YES!Delft incubator where they receive continued support.

The program has garnered considerable international recognition thanks to many of the start-ups winning prestigious national and international competitions. In the last four years, Delft University of Technology start-ups won 8 of the 20 major prizes of the largest business plan competition in the Netherlands, “New Venture”.

Internationally, companies such as Senz Umbrellas and Ephicas have gotten a lot of attention. Shortly after winning the most prestigious design awards of Japan and the US, the Senz storm umbrella has managed to win the most important design award of Europe: the Gold iF Product Design Award 2009. Ephicas, the developer of wing-shaped side skirts for trucks that reduce fuel consumption by 5-10%, after winning three prizes in the Netherlands and Belgium, recently won the Fast Start Award from the Academic Enterprise Awards Europe (ACES), a European prize for entrepreneurial researchers.



A SELECTION OF START-UPS FROM THE DELFT UNIVERSITY OF TECHNOLOGY
 WRITING A BUSINESS PLAN PROGRAM

EPHICAS



Side skirts for trailers, saving 5% to 10% on fuel expenses

Regarded as one of the most promising new businesses, winner of the New Venture 2008, LiveWire Young Business Award, MKB Energy Idea 2009 and others

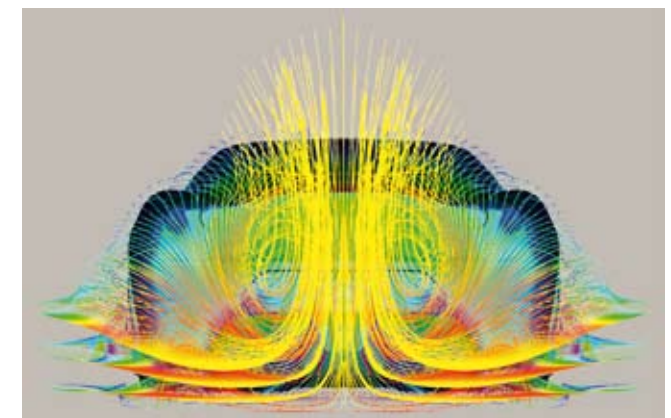
SENZ UMBRELLAS



Storm umbrella sold out first batch of 10,000 in 9 days (2006), currently on sale across Europe, the US and Japan

Won many prestigious international design awards (e.g. Red Dot, Gold iF Product Design Award, the American Gold IDEA Award and Japanese Good Design Award)

ACTIFLOW



Removing boundaries in aerodynamics

The new Ferrari 599XX, presented at Geneva Motor Show 2009, is fitted with Actiflow aerodynamic control

The “Writing a Business Plan” results are world class, with over 60% of participants embarking upon entrepreneurial activities after finishing the program.

To put the results of the Delft University of Technology WaBP program into perspective, we have compared it to a world-class ecosystem that is often used as a benchmark: the Massachusetts Institute of Technology (MIT) in the US. In 2000, MIT set up a program similar to the Delft University of Technology program: **the MIT Venture Mentoring Service**, a joint venture of the MIT Sloan and Engineering schools, with the MIT E-Center as its host.

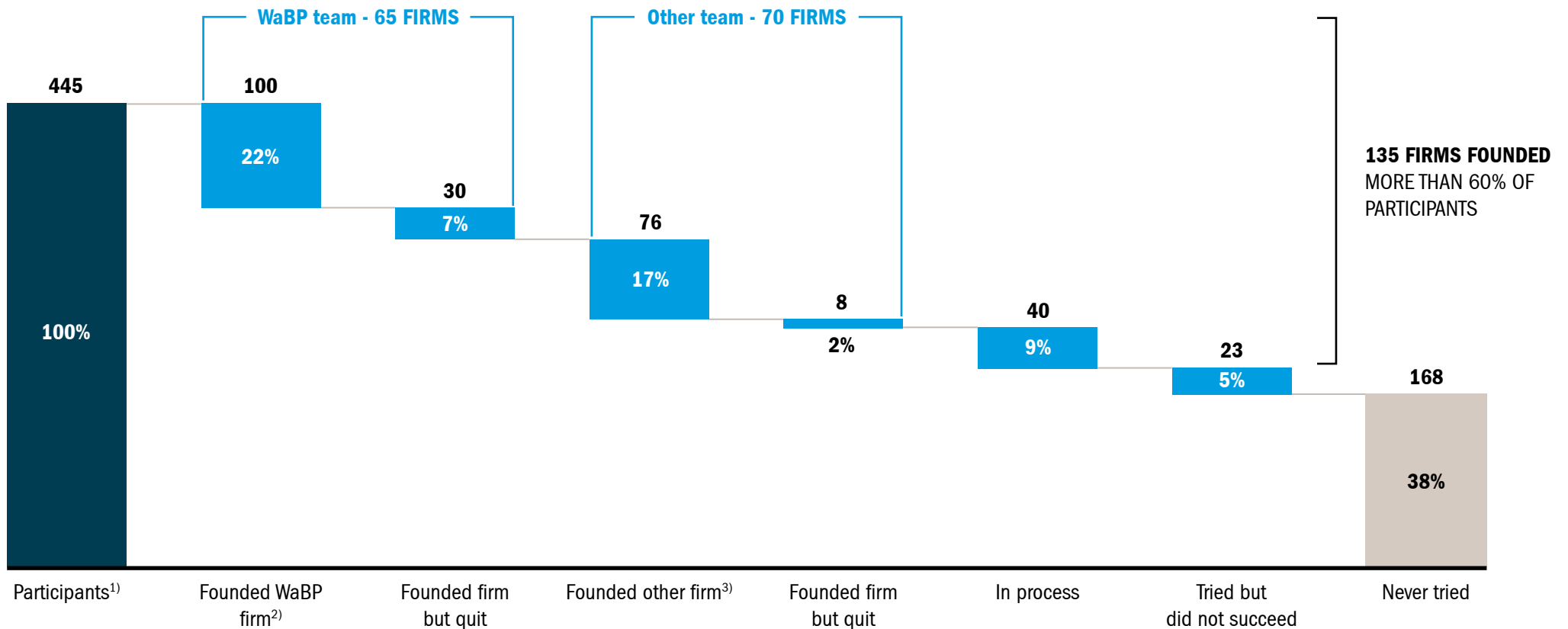
It provides free and objective advice and assistance to anyone affiliated with MIT – student, staff, faculty, alumni – who is considering starting a new company. Prospective entrepreneurs often come to VMS at very early stages in their process, usually before there is a business plan, a strategy and revenue model, a team or any funding. Eighty-eight new companies, or more than **17%** of the ventures that signed up as VMS “clients”, already arose by mid-2007 [MIT report].

When we compare these results to the results of the Delft University of Technology program, it is clear that WaBP is on par. Out of the more than **213 start-ups** that participated in recent years, more than 65 firms (31%) were founded, 43 of which (25%) are still active today. And about **16 teams** (11%) are setting up a company right now.

Ultimately, many of these prospective entrepreneurs discover that the ideas are not viable, or choose to pursue other opportunities/priorities such as finishing university or joining already-established companies. But the experience they developed at the Delft University of Technology often manifests in other ways, including founding companies based on other ideas. In total, alumni of the Delft University of Technology program have founded more than **135 firms**, and 70 of those were with ideas that did not originate in the program. All in all, more than **60%** of participants are engaged in entrepreneurial activity today.

MORE THAN 60% OF PARTICIPANTS HAVE ESTABLISHED OR TRIED TO ESTABLISH A FIRM, RESULTING IN 135 COMPANIES

TU DELFT WRITING A BUSINESS PLAN RESULTS BY STUDENT



¹⁾ Excluding 54 participants (11%) of whom we have no information

²⁾ Eight of these participants sold their firms

³⁾ Three of these participants sold their firms

IESE Business School is a good case study for understanding start-ups that arise from MBA students and experienced professionals.

Another successful example of active stimulation of entrepreneurship is the IESE Business School, founded in 1958 in Barcelona as the graduate business school of the University of Navarra. Initially, the school offered an array of executive education programs for managers at a time when the concept of executive education was scarcely known outside of the United States. Since then, IESE is consistently ranked among the leading business schools of the world, **and in 2009, IESE ranked 1st in the world in The Economist MBA ranking.**



The school launched its MBA program in 1964, under the guidance of an advisory committee set up by Harvard Business School and IESE. It became the first two-year MBA program in Europe, drawing students from all over the world. IESE offers Executive Education programs and an Executive MBA program in addition to the Global Executive MBA program, which integrates the latest distance learning technology with residential modules on three continents. Participants include experienced executives who are working all over the world. The total number of MBA, Executive MBA and Global Executive MBA alumni is more than 6,600. IESE has campuses in Barcelona, Madrid, Munich and New York City.



IESE Business School is committed to the development of leaders who aspire to have a positive, deep and lasting impact on people, firms and society through their professionalism, integrity and spirit of service. Jordi Canals, Dean of IESE, says, “At IESE, we seek to transmit a spirit of service, placing a special emphasis on human, ethical and social aspects of business management.”

IESE is a school created by and for entrepreneurs. Since its foundation, entrepreneurship and development of family business have been a symbol of its identity. To support and promote this vocation, IESE has created the Center for Family-Owned Business and Entrepreneurship (CEFIE). The Center has the mission of promoting and supporting entrepreneurship and family business through research, dissemination and the exchange of information and experiences among the academic and business communities.

A SELECTION OF START-UPS FROM THE IESE BUSINESS SCHOOL

HTC



Founded in 1997, HTC made its name with production of most popular operator-branded handsets

Established partnerships with the top 5 operators in Europe, the top 4 in the US and many fast-growing Asian operators

Since June 2006, HTC has marketed handsets under its own HTC brand

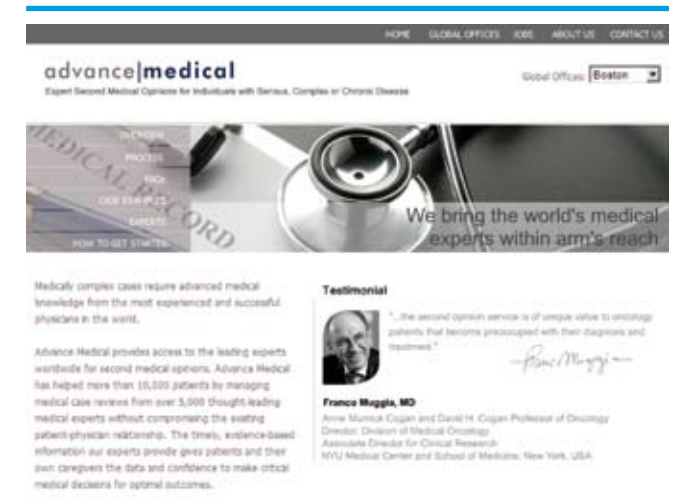
FRACTUS



Fractus develops antennas for wireless devices – from mobile phones and mobile TV to Bluetooth headsets

Its products are based on its patented fractal antenna technologies and are found in devices of leading OEMs and ODMs around the world

ADVANCE MEDICAL



Advance Medical provides access to the leading experts worldwide for second medical opinions

Advance Medical has helped more than 10,000 patients by managing medical case reviews from over 5,000 leading medical experts

IESE business school yields world-class results in entrepreneurial success

To put the results of the IESE MBA, EMBA and GEMBA programs into perspective, we have compared them to those of the Massachusetts Institute of Technology (MIT) in the US. In February 2009, MIT published a study on the entrepreneurial impact of its alumni. The study showed some impressive results:

“From our extensive data collection and analyses, we conclude that, if the active companies founded by MIT graduates formed an independent nation, conservative estimates indicate that their revenues would make that nation at least the seventeenth-largest economy in the world. A less-conservative direct extrapolation of the underlying survey data boosts the numbers to 25,800 currently active companies founded by MIT alumni that employ about 3.3 million people and generate annual world revenues of \$2 trillion, producing the equivalent of the eleventh-largest economy in the world.

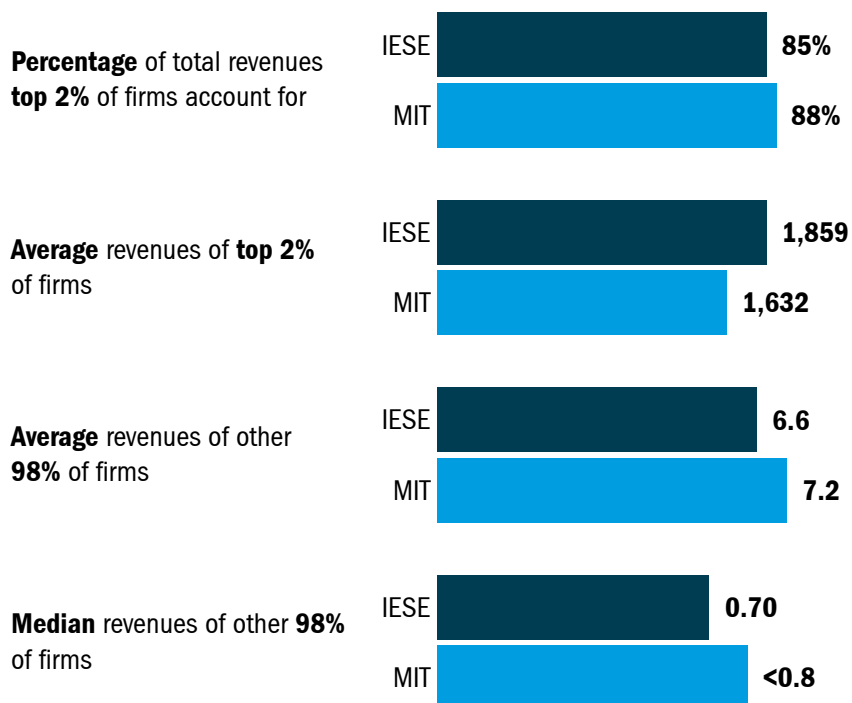
While MIT's leadership in developing successful entrepreneurs has been evident anecdotally, this study quantifies the significant impact of MIT's entrepreneurial ecosystem that supports firm start-ups. And, while MIT is more unique and unusual in the programs it offers and in its historical culture of entrepreneurship, MIT provides a benchmark by which other institutions can gauge the economic impact of their alumni entrepreneurs.”

Although the results of MIT in terms of revenues generated and jobs created are hard to match in absolute terms, firms founded by IESE alumni perform at least as good in relative terms. Both ecosystems are characterized by the same pyramid structure, where the top 2% of firms generated 85%-88% of total revenues and 73%-84% of jobs. Looking at the base of the pyramid, the other 98% of firms, we see that both the average and median revenues are similar. Only in terms of employment does MIT score higher, which might be explained by an increased focus on manufacturing (30% of the jobs in the MIT alumni firms are in manufacturing).

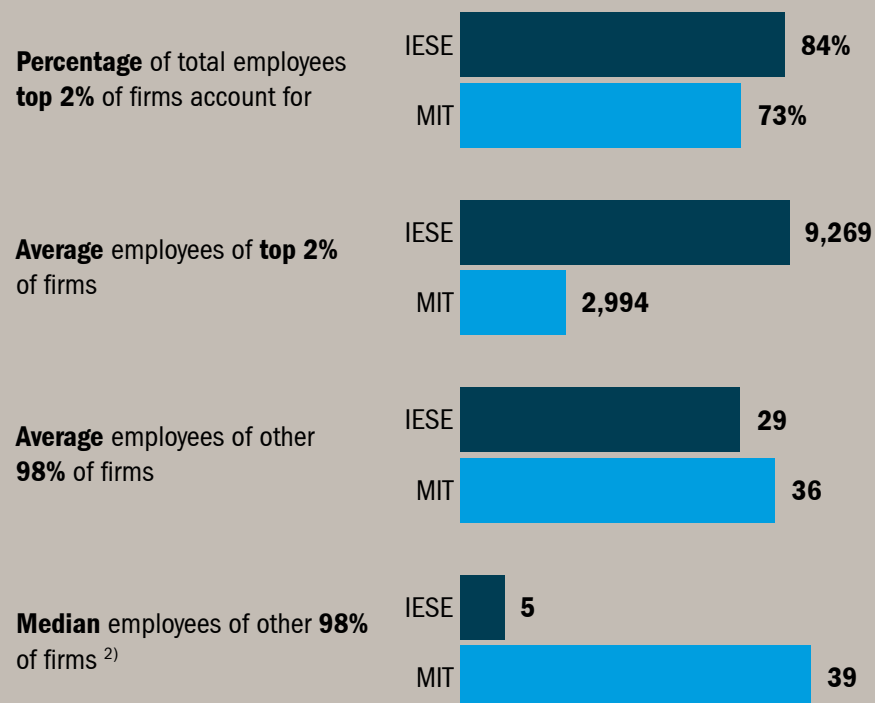
IESE BUSINESS SCHOOL YIELDS RELATIVELY SIMILAR RESULTS COMPARED TO MIT

REVENUES AND EMPLOYEES OF FIRMS FOUNDED BY IESE AND MIT ALUMNI

REVENUES^{1) 2)} [EUR m]



EMPLOYEES



¹⁾ MIT data is in 2006 USD – exchange rate used is average USD – EUR exchange rate 2006

²⁾ Around 30% of MIT firms are active in manufacturing, which might explain the difference

Source: Edward B. Roberts and Charles Eesley, MIT Sloan School of Management, "Entrepreneurial Impact: The role of MIT", February 2009; ECB official exchange rates

The Delft University of Technology
“Writing a Business Plan” and IESE Business School
ecosystems generate innovative, high-tech,
high-growth firms –
the kind of companies Europe needs

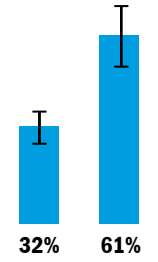
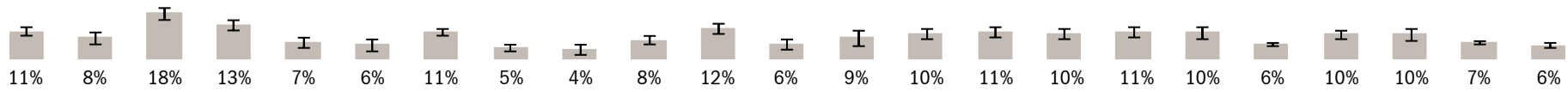
More than 51% of Delft University of Technology and 26% of IESE firms offer a product or service that is (perceived as) “high tech” – The Global Entrepreneurship Monitor defines starters in technology sectors as “early-stage entrepreneurs who are active in the ‘high’ technology or ‘medium-high’ technology sectors, as classified by OECD (2003).” Industries of high and medium-high technology intensity accounted for over two-thirds of total OECD manufacturing exports in 2003. In Japan and Germany, medium-high technology industries even accounted for the bulk of total exports. Entrepreneurial activity in this area is therefore crucial for our economies [OECD Fact book 2006]. Our study applies a much narrower definition that only looks at “high-tech” industries, but both the IESE and Delft University of Technology programs produce impressive figures.

More than 20% of Delft University of Technology and 36% of IESE firms have high growth expectations – The Global Entrepreneurship Monitor defines high-growth expectation as “the percentage of early-stage entrepreneurs who expect to employ at least 20 employees five years from now.” Although in knowledge-intensive economies this definition might not always apply, as small and efficient companies can generate huge revenue streams, the definition does focus on the objective of stimulating the formation of firms that can provide (a large number of) new jobs. In OECD countries, companies with more than 20 employees account for less than 20% of firms, but more than 80% of employees. High-growth firms contribute disproportionately to job creation [2006 data, OECD Factbook 2009].

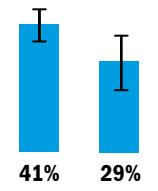
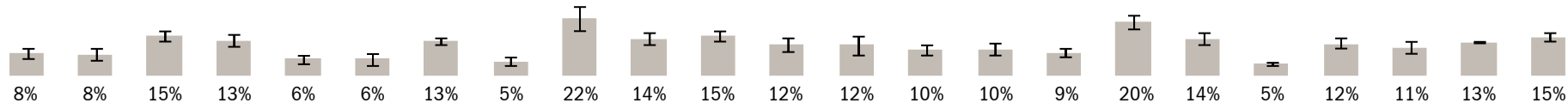
More than 80% of Delft University of Technology and IESE firms have innovative product/market combinations – The Global Entrepreneurship Monitor defines innovativeness as “the percentage of early-stage entrepreneurs who indicate that their product or service is new to at least some customers and indicate that not many businesses offer the same product or service.” Applying this definition to start-ups arising from the IESE and Delft University of Technology programs means that more than 80% of those firms have a new product-market combination.

THE DELFT UNIVERSITY OF TECHNOLOGY AND IESE ECOSYSTEMS GENERATE INNOVATIVE, HIGH-TECH AND HIGH-GROWTH FIRMS

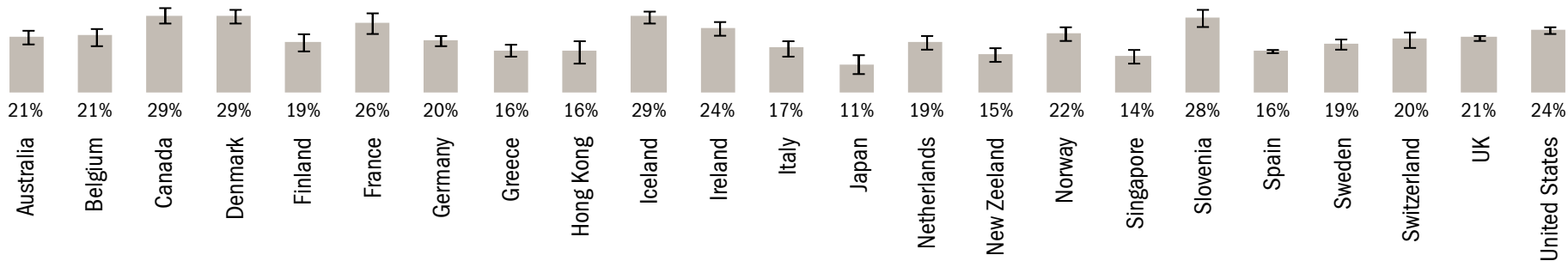
HIGH-TECH FIRMS



HIGH-GROWTH FIRMS (EXPECTATIONS)



INNOVATIVE FIRMS (NEW PRODUCT-MARKET COMBINATIONS)



Source: GEM Study 2008

METHODOLOGY

We have developed our recommendations based on in-depth research into two European ecosystems with which we have been (personally) involved for many years: the “Writing a Business Plan” program at Delft University of Technology in the Netherlands and the MBA, Executive MBA and Global Executive MBA programs at IESE Business School in IESE campuses in Barcelona, Madrid, Munich, Sao Paulo and New York. Central to gathering information for our research was the network of close relationships with entrepreneurs in and from the programs that has developed over many years.

The study was organized around four activities: a survey of the complete populations of both programs, five workshops with participants from both programs, interviews with entrepreneurs, corporations and government representatives, and a study of relevant literature.

Organization of the survey

The quantitative analysis of our study is primarily based on an online survey. Invitations were sent by e-mail to all participants of whom the e-mail address was available and accurate (about 85% in both programs); those who did not respond received two reminders. To ensure that responses came from a broad range of participants, we phrased the invitation the following way: “We would very much like to hear your perspective on entrepreneurship and gain some insight into your motivations behind whether or not to become an entrepreneur.”

Participants in the survey answered up to 59 “open” and “closed” questions, depending on whether or not they had started a business. These questions touched on all main aspects of the entrepreneurial process: awareness of and motivation for entrepreneurship, (perceived) opportunity, (perceived) capabilities, team formation, growth ambition, innovation, firm development, firm performance, key success factors, main hurdles and the impact of the current crisis. Entrepreneurs who bought a firm or who took over the management of their family’s business were filtered out of the results.

To identify possible bias in the sample, we evaluated the response rate of participants in the study versus the full population across three main factors: year of participation in program, study background and gender. The only pattern found was that recent graduates (2009) were more likely to respond to the survey, and that IESE alumni who graduated more than 30 years ago were less likely to respond. However, as the graduation year proved to be insignificant across all analyses, we can conclude that, for the purpose of the study, the survey participants are a good representation of the full population.

To have a better understanding of the impact of the entrepreneurship programs and to determine the actual number of participants who started a business, we studied the career path of all participants of the Delft University of Technology Writing a Business Plan program by checking their CVs on online social networks such as LinkedIn (www.linkedin.com) and Xing (www.xing.com). We could thus trace 89% of all Delft University of Technology participants and could determine whether or not they had founded a firm at some point in their career. As a rule of thumb, we only took “entrepreneurial experience” into account when it was actually mentioned in a CV. Due to the large number of IESE alumni, it was not possible to verify the career paths of all participants.

Organization of the workshops

The qualitative analysis of our study is primarily based on the five workshops we organized. In July, we organized three workshops with Delft University of Technology entrepreneurs, each focused on a specific stage of the entrepreneurial process: “How to motivate more students for an entrepreneurial career”, “How to accelerate the development of start-ups” and “How to stimulate the development of high-growth firms”. In September, we organized two workshops with IESE entrepreneurs in Barcelona and Madrid, each focused on the same topic: “How to build sustainable high-growth firms”.

All workshops were structured in the same way: in the first part of the workshop we tried to identify key success factors for the development of start-ups (focused on the topic of the session) after which we used the second part of the workshop to develop recommendations on how to stimulate this development.

To avoid potential bias, we invited a diverse group of entrepreneurs for each workshop and we did not share any results from the surveys. Furthermore, we tried to avoid “group thinking” by asking each participant to present their story on the key success factors in the development of their firm before the start of the discussion and brainstorm.

Organization of the interviews

To complete our qualitative analysis and test our recommendations, we interviewed selected entrepreneurs, corporations and government representatives.

By selecting entrepreneurs who were under represented in the workshops we could complement our analysis and “fill in the gaps”. For example, we interviewed a number of firms that were still in start-up phase.

In our daily work to advise corporations and government representatives, the topic of how to stimulate entrepreneurship is on many people’s agendas.

We used this opportunity to discuss our insights and test our recommendations.

Furthermore, we discussed our research with many stakeholders involved in the ecosystems: representatives from universities, governmental institutions, investors, etc.

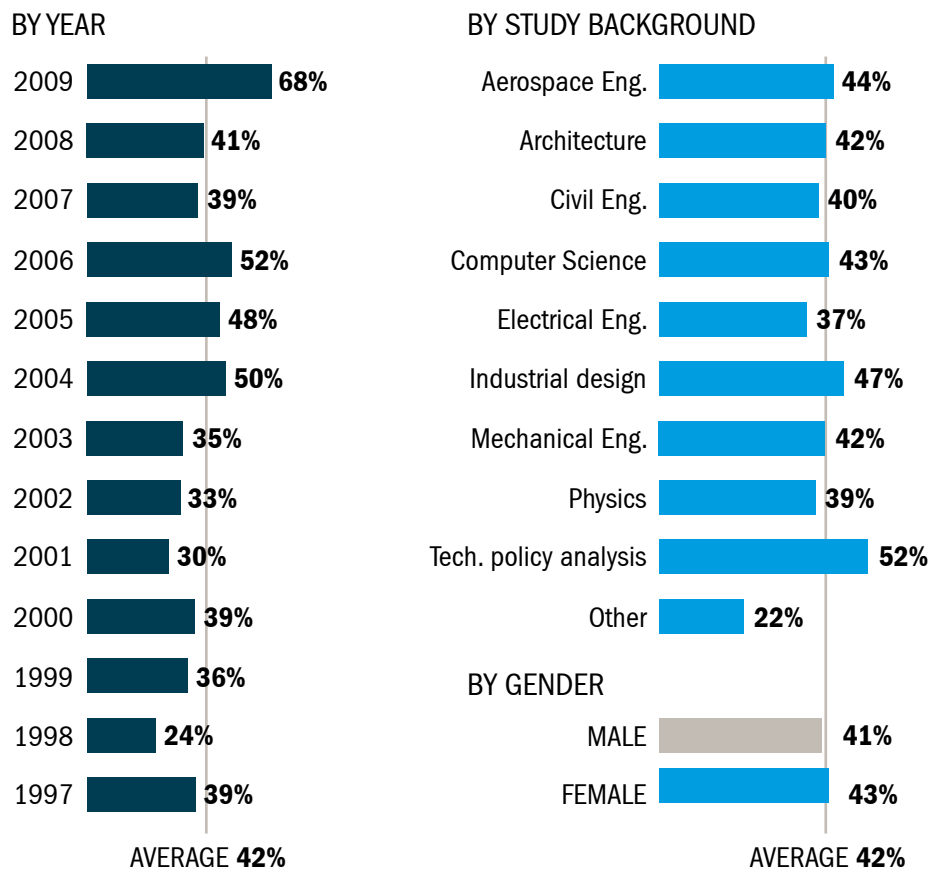
Organization of the literature study

Over the years, both the IESE entrepreneurship department and Roland Berger Strategy Consultants have accumulated extensive experience with and knowledge of academic research on the topics discussed in the study. This is more of an ongoing process than a dedicated study. For example, one of the specific areas of interest in Julia Prats’ work is to understand how sustainable high-growth firms are built, and at Roland Berger developing recommendations on strategic growth decisions is at the core of the firm’s advisory work.

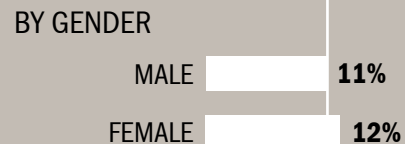
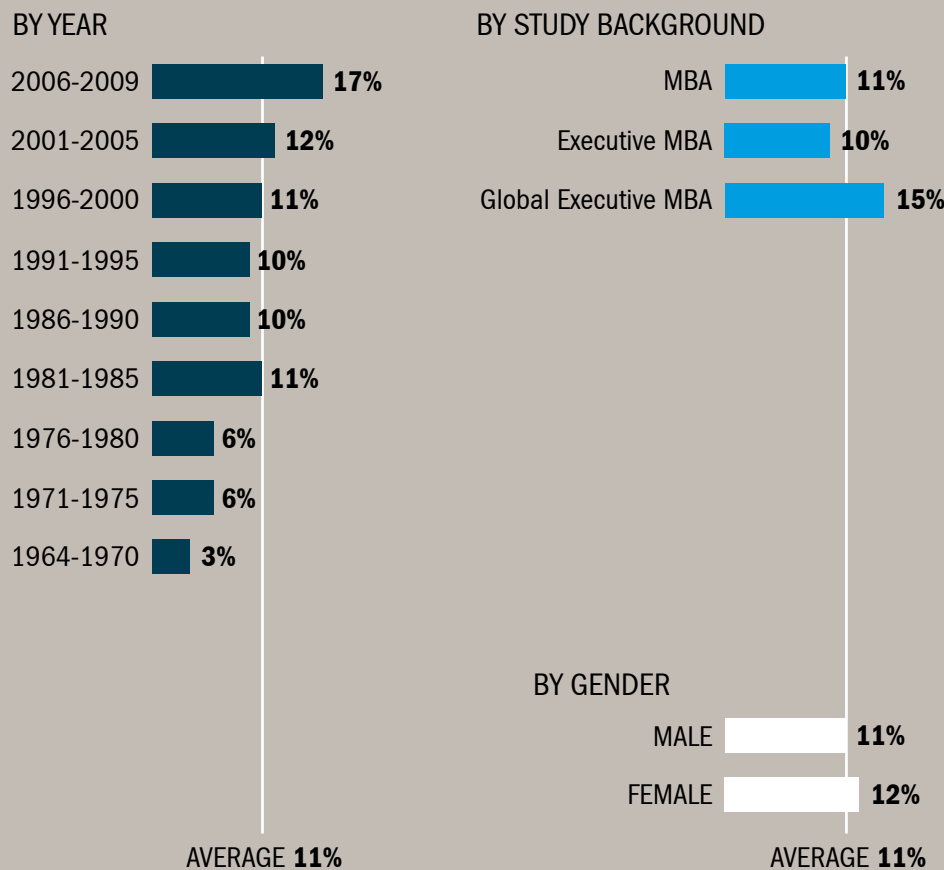
THE PARTICIPANTS IN THE SURVEY REPRESENT THE FULL POPULATIONS OF BOTH ECOSYSTEMS

ANALYSIS OF THE RESPONSE RATE TO THE SURVEY ACROSS DIFFERENT FACTORS

Delft University of Technology



IESE Business School



ABOUT THE AUTHORS

THIS STUDY HAS BEEN JOINTLY CONDUCTED BY IESE BUSINESS SCHOOL AND ROLAND BERGER STRATEGY CONSULTANTS



Julia Prats is head of the Department of Entrepreneurship at IESE Business School. Her primary area of interest is the entrepreneurial process in any context. Central in this work is developing strategies and systems that help established firms achieve profitable growth. She also focuses on understanding the key factors for building and managing professional service firms. Julia was nominated Kauffman Emerging Scholar for her dissertation work. She holds a Doctor of Business Administration from Harvard University, an MBA from IESE and a degree in Industrial Engineering from the Polytechnic University of Catalonia.



Benno van Dongen is a member of the Management Team of Roland Berger Strategy Consultants in Amsterdam. He has over eighteen years of experience with public and private technology and research organizations and the management of innovation in knowledge infrastructures. He has set up innovation consortia and supported the foundation of several academic institutes. He is co-founder of the Institute for Young Entrepreneurs, that organizes the Delft University of Technology Writing a Business Plan program.

Since 1995 this institute supported hundreds of students at Delft University by teaching, guiding and coaching in the start-up of their technology intensive businesses.

Benno holds a degree in Chemical Engineering and Materials Science from Delft University of Technology and an MBA from INSEAD in France.



Alexander van Hasselt is a Consultant at Roland Berger Strategy Consultants Amsterdam and is currently pursuing an MBA at IESE Business School. Alexander advised companies in the energy, utilities and high-tech industries on diverse issues such as operational excellence, strategic purchasing and customer service management.

Furthermore he advised governmental institutions on stimulating innovation in the high-tech and chemical industries. Since 2005, he has coached start-ups at the Delft University of Technology Writing a Business Plan program.

Alexander studied Mechanical Engineering at Delft University of Technology.



Mireille van Reenen is a Senior Consultant at Roland Berger Strategy Consultants Amsterdam. Mireille advises companies in diverse industries, ranging from utilities to healthcare, and issues, including reorganizations, operational excellence and change management. Since 2005, she has coached start-ups at the Delft University of Technology Writing a Business Plan program, and since 2007 she has been responsible for the organization of the courses in the Writing a Business Plan program.

Mireille studied Civil Engineering at Delft University of Technology and Art History at the University of Leiden.



Toon Stilma works as a Senior Consultant in the Roland Berger Amsterdam office, where he primarily focuses on corporate strategy, transport and operational excellence.

Toon works for companies in a variety of industries, such as air transport, railways, automotive and green technology. He has started his career at the Dutch industrial conglomerate Stork, where he has held several functions, prior to switching to Roland Berger in 2006.

Since 2007 he is responsible for the organization of the courses in the Writing a Business Plan program. Toon holds a Master's degree in Aerospace Engineering from Delft University of Technology.



Evaluation of the sales pitch and business plans by the jury during the Writing a Business Plan final presentation of June 2009.

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