



accelerating innovation
in Europe

Horizon 2020 SME Instrument impact report
2017 EDITION

EUROPEAN COMMISSION

Executive Agency for Small and Medium-sized Enterprises

EASME

Unit A.2. Horizon 2020 SME Instrument

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EUROPEAN COMMISSION

Accelerating Innovation in Europe

HORIZON 2020 SME INSTRUMENT IMPACT REPORT

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Executive Agency for Small and Medium-sized Enterprises

2016

Horizon 2020 SME Instrument

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INTRODUCTION

The SME Instrument supports market creating innovation in small and medium-sized businesses (SMEs) with significant growth potential and global ambitions. As a part of Horizon 2020 – the EU's €80 billion Research and Innovation funding programme – the SME Instrument will invest €3 billion in 7,500 companies until 2020. Companies receive up to €2.5 million in funding (up to €5 million for health-related projects) coupled with world-class business innovation coaching and other business acceleration services.

The SME Instrument is the first ever attempt of EU research and Innovation funding programmes to invest in high potential and high risk, disruptive innovation in single SMEs. In the first two years of the programme, efforts concentrated on setting up a sound evaluation process, getting grant preparation under way and developing a valuable business innovation coaching system. In 2016, the third year of the SME Instrument, the programme built upon these first achievements to optimise and scale up its operations to accommodate a constantly growing budget.

With more than 31,000 applications received and more than 2,000 small companies funded, the SME Instrument has proven its appeal to the European innovation ecosystem. From 2014 to 2016, 2,457 companies have received a total of **€882 million in direct, equity free funding**.

However the SME Instrument is not only funding – it also offers business innovation services to accelerating the pace of innovation. Business innovation coaching helps innovators build solid businesses that will change markets and the way we live. Coaches dissect the companies' business plans and empower them to make crucial choices that underpin successful market strategies. The nascent SME Instrument Community connects selected SMEs with their peers, with experienced entrepreneurs, experts, investors, corporates and other partners that will help them on their growth path. With less than €1 billion of EU funding invested in business support, the expected turnover for the funded SMEs is more than €20 billion.

2016 was also the year of first results. In 2016, companies funded by the SME Instrument celebrated their first IPOs, major contracts signed, important investments, precious awards and plenty of innovative entries on the market. These results and impacts observed only three years after the start of the programme are just a glimpse of future potential.

This report aims to present the profile of funded companies, first insights about their current and potential growth as well as the key features of the programme that constitute its unique selling point. It presents cumulative data (unless indicated differently) from the start of the programme in 2014 until the end of 2016. A statistical analysis and a thorough monitoring system made it possible to gather ample information about companies, their innovations and their growth in support of this report.

1. A recipe for success

The SME Instrument provides business innovation support to SMEs in the 28 European Union Member States and Horizon 2020 associated countries¹. It selects the best companies with the most innovative ideas, a real chance of disrupting the market and a very high growth potential.

The programme is delivered in Phases. Phase 1 offers a lump-sum grant of €50,000 to carry out a **concept and feasibility assessment**. Phase 2 invests **between €0.5 and €2.5 million**² in innovation activities such as demonstration, testing, prototyping, pilot lines, scale-up studies and market replication. In addition to funding, SMEs receive tailor-made business innovation coaching³ and further business acceleration services. This so-called Phase 3 aims to amplify the economic impact of the funding by building SMEs' strategic capacity, helping them finding new customers and partnerships (other SMEs, large enterprises, investors, public procurers) and participating to international trade fairs.

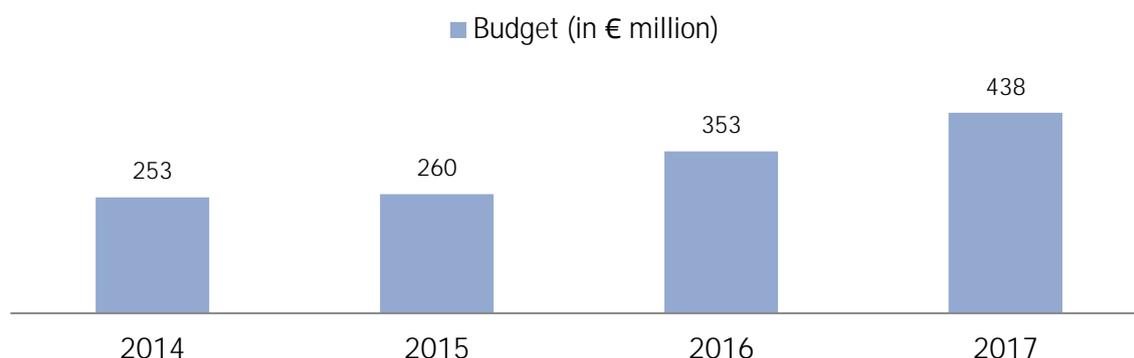
The success of the programme is directly linked to the quality of the selection procedure. This chapter presents the main features and selection procedure of the programme that make it a recipe for success.

1.1. Competitive funding

With around €3 billion in funding over 2014-2020, the SME Instrument aims to accelerate the growth of funded SMEs at a crucial stage of their development – from early stage to market introduction. Since 2014, the budget has been constantly increasing (See Figure 1).

Large budget
From a €3 billion total budget, €882 million were contracted from 2014 to the end of 2016

Figure 1 **SME instrument annual budget (in € million)**



¹ Horizon 2020 Associated countries with at least one SME funded under the SME Instrument: Faroe Island, Iceland, Norway, Serbia, Turkey, Ukraine

² The grant is up to €5 million in health-related topics

³ 3 days for a Phase 1 project and 12 days for a Phase 2 project

During 2014 - 2016 almost 2,500 SMEs were selected to receive funding under the SME instrument and a total of €882 million was invested in their success (see Table 1).

Highly popular
Over 31,000 applications in 3 years

Table 1 SME instrument key figures 2014-2016

- 21 cut-off dates
- 31,377 applications (Phase 1 & 2) received in total
- €882 million allocated to 2,457 individual SMEs participating in 2,344 projects in total
 - €93 million to 1,864 Phase 1 projects
 - €789 million to 480 Phase 2 projects
- An average of €1.6 million per Phase 2 project
- 8.4% of Phase 1 applications were selected for funding
- 5.5% of Phase 2 applications were selected for funding
- 94% of Phase 1 and 82% of Phase 2 applications were submitted by single companies (instead of consortia)
- 15% of selected projects are coordinated by women

The SME Instrument is highly competitive – after three years, the overall success rate is 8.4% for Phase 1 and 5.5% for Phase 2. These rates are similar, albeit

Highly competitive
Success rate 8.4% for Phase 1 and 5.5% for Phase 2

slightly higher, than those of private acceleration programmes. According to the Global Accelerator Network only an average of 2% of applicants are accepted to their members' acceleration programmes⁴.

⁴ <http://gan.co/the-network>

The SME Instrument also invests in high-risk businesses. The selection process is designed to support non-conservative, high risk and high potential ideas, which proves its purpose as 15%

*Highly risky
15% of funded SMEs are pre-revenue companies*

of funded companies are pre-revenue companies, with less than €1,000 turnover when they apply to the SME Instrument.

1.2. Market driven selection

Companies applying for the SME Instrument are assessed exclusively on their business and innovation merit. The award criteria focus on the

In 2016, a pool of 1,528 highly skilled evaluators was set up, with 74% of experts from the private sector and 43% women

commercialisation perspective, excellence in innovation and the capacity of the implementing team. These criteria are similar to the ones used by private investors.

Companies have to demonstrate that there is a market for their innovation and potential customers willing to pay for it. They are thoroughly tested against their knowledge of the market conditions, including the total potential market size and growth-rate, their understanding of competitors and their sales projections. The innovation they are presenting needs to have the potential to scale-up the company, which must be proved by a clear commercialisation plan and a knowledge protection strategy, including an analysis of "freedom to operate". The applicant should show that its idea is a high-risk and high-potential innovation that stands out from competition and outperforms existing solutions. Finally the capacity of the company's team to effectively commercialise and scale up the business is assessed.

Each year, a pool of about 1,500 evaluators including experts from countries all around Europe and beyond, including the US, Canada and Brazil, is set up. The selection is a result of a very careful screening process that aims to create a balanced pool of experts in terms of knowledge, geographical diversity and gender. With a high level of skills and a very good understanding of the market (business development and commercialisation, innovation exploitation and management, venture-capital and risk-finance), the experts draw on their experience and knowledge to select the best applications.

Each application is evaluated by a group of four independent experts of different nationalities and profiles in the topic concerned. They work remotely, fully independently from each other, through a rigorous and well-structured process that ensures the most meritorious applications are selected. The procedure is geared to provide a funding decision within a very short period of time - see section 1.3.

SME Instrument Experts

Business



Ms Stavriana Kofteros (CY)
CoFounder & Chief Evangelist
Startup Cyprus

Innovation



Mr Samir Bendida (FR)
Founder & CEO of Cyclodeo

Finance



Ms Merce Tell (ES)
Venture Capitalist
Co-founder & General Partner Avet Ventures

1.3. Procedures adapted to market
1.3.1. Easy application, quick reply

Given small companies' pressing need for quick investments, the SME Instrument was designed to optimise efforts and shorten the gap between the time of the application and the moment SMEs access the funding.

Ongoing open call
4 deadlines per year for each Phase

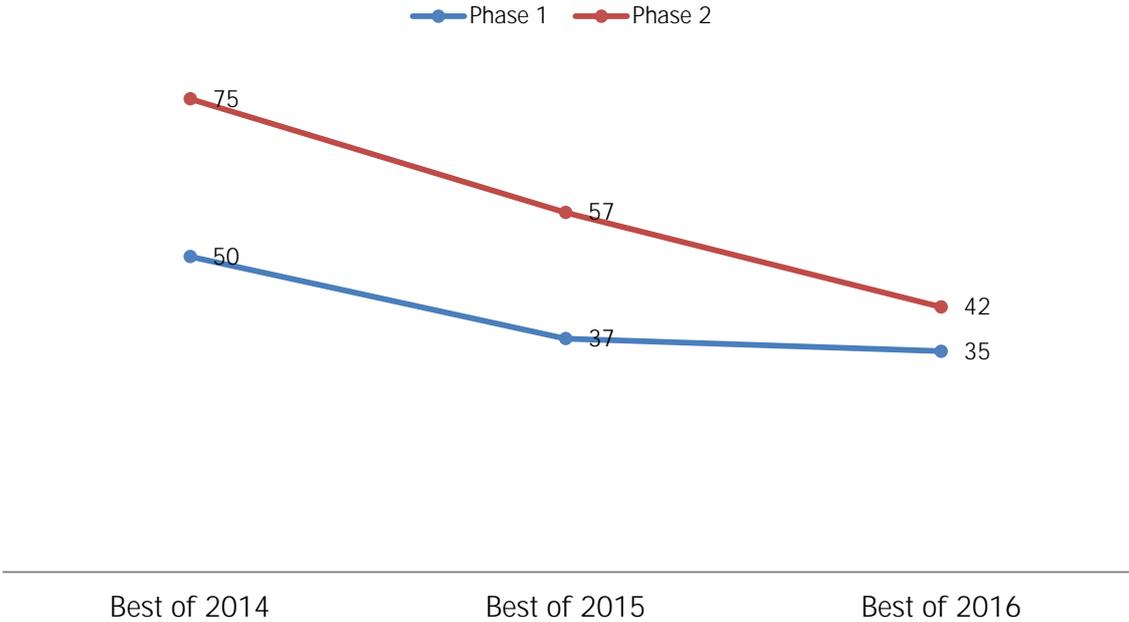
SMEs apply to the programme through an open call for proposals. Applications can be submitted at any time for one of the 13 different thematic areas (topics). The submitted applications are collected and evaluated eight times per year, at so-called cut-off dates.

Applications are short (10 pages for Phase 1, 30 pages for Phase 2) and reflect the requirements for business plans or pitch decks commonly used by investors, banks or other business partners.

Easy & Fast
10-30 page application and results in about 1 month

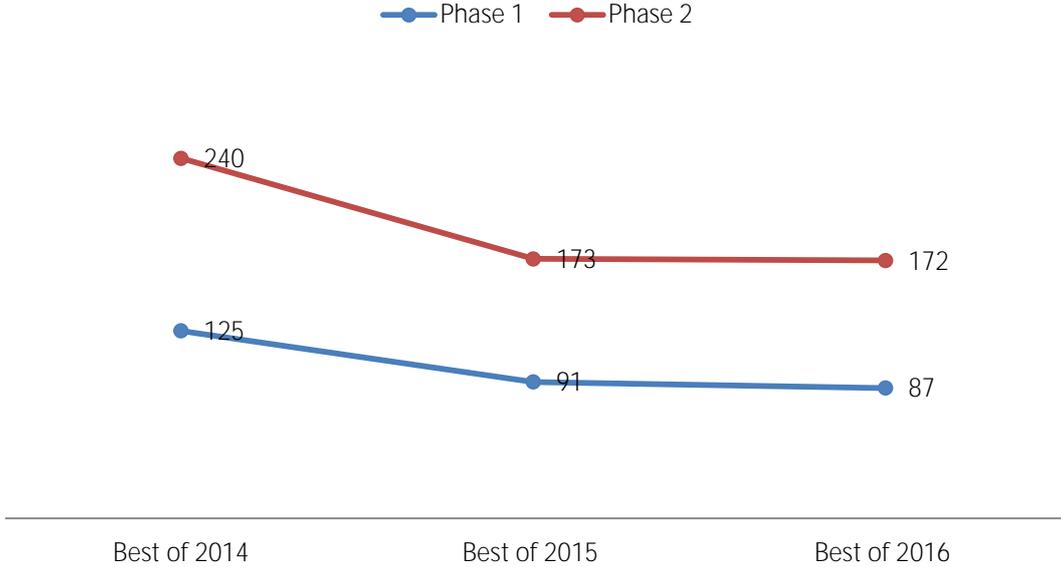
Efficiently evaluating the large number of applications is a challenging task. Since the beginning of the programme, the 'Time-to-Inform' (the time between the cut-off date and the announcement of the results) has significantly improved for both Phases. In 2016 the shortest time to inform applicants was 35 days for Phase 1 and 42 days for Phase 2 (See Figure 2).

Figure 2 SME Instrument Time-to-Inform – number of days between the cut-off date and the announcement of the results



Likewise, the Time-to-Grant (time between the cut-off date and the signature of the last Grant Agreement) has been significantly reduced. The target was set to maximum three months for Phase 1 and six months for Phase 2. The target has been achieved and the time is below the legal timeframe requirements.

Figure 3 SME Instrument Time-to-Grant (90% of proposals)⁵ – number of days between the cut-off date and the signature of the last grant agreement



The SME Instrument timeline performance is similar and in some cases better than other public and private investment programmes. The US Small Business Innovation Research program (SBIR) for example, reports that it uses on average 195 days to process between the cut-off date and the start of a Phase 1 award⁶. Under the SME Instrument the same is achieved in approximately 129 days.

The fast access to funding has been highly appreciated by the SMEs. In addition, the simplified application process, the possibility to apply without partners and the freedom to determine the scope of the proposal has made the programme a popular innovation support tool in Europe.

*Across the board
Single SMEs or consortia, all industries*

⁵ The remaining 10% are either security projects requiring different granting procedure or projects requiring ethical screening.

⁶ SBIR/STTR Annual Report FY2013 https://www.sbir.gov/sites/default/files/annual_reports/FY13_SBIR_STTR_AR_Final.pdf

1.3.2. Phase 1 – Phase 2 cycle

Although the programme is organised in different phases to cover all the stages of the innovation cycle, applicants can apply directly to Phase 2. However

it is highly recommended for the SMEs to start with Phase 1, as figures show that the process will help them mature their business concept and increase their chances of succeeding in applying for Phase 2 (should they choose to do so).

Companies that have completed Phase 1 have twice more chances of being selected in Phase 2

Indeed, in addition to gaining experience from the application process, during the implementation of Phase 1, companies have the opportunity to get business innovation coaching (see chapter 1.4) that helps them develop their business plan. At the end of the Phase 1 project, SMEs must have sharpened the commercial focus of their innovation and improved their market readiness.

This learning process increases their chances of being selected in Phase 2 but also of raising private funds. A typical example is “Algama”, a successful French Phase 1 company in the FoodTech sector that raised €3.5 million in private funding from Horizon Ventures, thanks to their efforts in preparing for a Phase 2 where they failed as co-founder Mr Gaëtan Gohin, explains.

Statistics confirm that applications coming from a completed Phase 1 perform better. From previous Phase 1 awardees applying to Phase 2, 67% scored above the threshold for projects that can potentially get funded, depending on the resources, and their success rate was 8%. On the other hand among applicants that submitted directly to Phase 2, 37% scored above the threshold and 3.5% were selected for funding (See).

Table 2 Phase 2 applications: Direct applications vs Completed Phase 1 applications

| | Evaluated | Above threshold | Selected | Success Rate |
|---|-----------|-----------------|----------|--------------|
| Direct applications to Phase 2 | 5,777 | 2,143 (37%) | 203 | 3.5% |
| Applications with completed Phase 1 project | 1,811 | 1,213 (67%) | 143 | 8% |
| Total | 7,588 | 1,697 | 346 | 6% |

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INNOVATION™
Nova Innovation Ltd

Sector
Phase 1,2
UK(Scotland)/Belgium

Cleantech/Energy
€2,250,266

<http://www.novainnovation.com>



Simon Forrest, CEO

Nova Innovation's journey from Phase 1 to Phase 2

Nova Innovation is one of the first companies in the world to connect tidal energy to the electricity grid. The thorough feasibility study made during Phase 1 helped the company secure a Phase 2 funding that will help make their product – an offshore tidal array – fit for international markets.

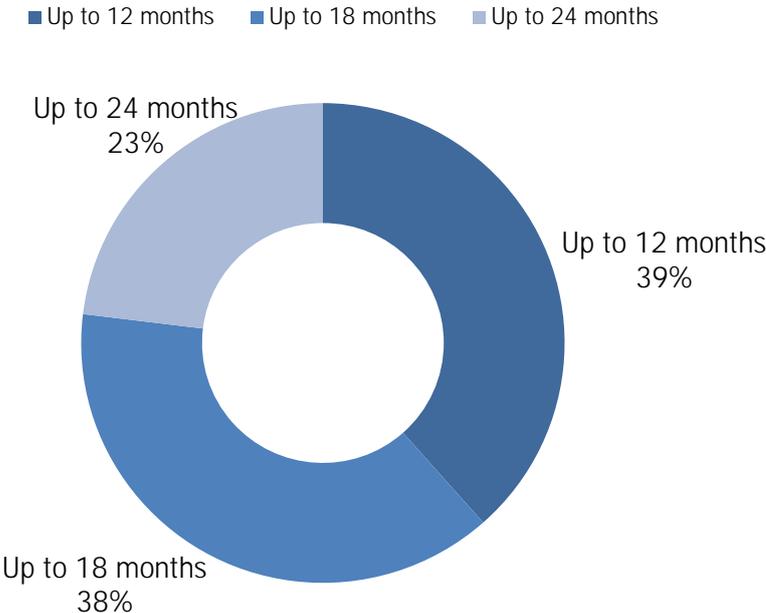
“The SME Instrument has been crucial in accelerating the success and rapid growth of our business. Nova Innovation won Phase 1 support to enhance our commercial strategy and propel us from domestic success to global export capability. We have now progressed to Phase 2 which will deliver a market-ready product for export across the world. The SME Instrument helped secure private investment, facilitated hard-to-find SME coaching which fast-tracked our business and helped us win awards for clean energy and innovation. There is no doubt, the SME Instrument has turbo-charged our business for success.”

Not all the companies that have successfully completed Phase 1 apply to Phase 2. Overall around 43% of companies that completed Phase 1 applied to Phase 2. This can be explained by the fact that one third of the Phase 1 SMEs are in a very early seed stage (see also chapter 2.2 SMEs Life Cycle Stage). They are still in the concept phase and need to further explore and assess the commercial potential of their innovation. Consequently they have a very small chance of being successful in Phase 2 directly after Phase 1.

Going through Phase 1 before Phase 2 does not extend the time until applicants reach Phase 2. Only 23% of companies spent up to 2 years to complete Phase 1 and get selected for Phase 2. The rest managed to complete the cycle in less than 18 months and 40% in less than one year (see Figure 4).

Apart from the direct benefit (access to funding), participation and engagement in the SME Instrument has a powerful impact on the companies' learning process

Figure 4 Phase 1 - Phase 2 Life Cycle - time between successful Phase 1 and Phase 2 cut-off dates



To conclude, apart from the direct financial value (access to funding) for companies, participating and engaging in the SME Instrument has a powerful impact on the companies' learning process and speeds up their success.

1.3.3. New comers to the programme

At each cut-off 50% of proposals are submitted by new applicants, the remaining 50% being resubmissions. The SME Instrument allows companies to resubmit their applications for

A large number of new companies apply to SME Instrument at every cut-off

funding and get the same treatment as first submissions. Each time the resubmitted applications are evaluated by a different combination of four expert evaluators, ensuring impartial assessment.

The majority of resubmissions (83% for Phase 1 and 82% for Phase 2) are 1st or 2nd resubmissions (First submission + 1 or 2 resubmissions) which mean that after the 2nd unsuccessful resubmission many companies stop applying.

The success rate of the resubmissions is higher than first submissions as applicant SMEs learn from the process and can resubmit improved proposals based on the feedback received at the end of the selection procedure. In Phase 1, resubmitted applications have almost 50% more chances to get selected, while in Phase 2 chances are slightly lower.

1.4. Business Innovation Coaching

Business coaching is an important feature of the SME Instrument that distinguishes it from other SME funding schemes. The intervention logic behind the SME Instruments is to offer SMEs "smart money" – not only a funding but also accompaniment on their growth path. Companies in Phase 1 are entitled to 3 days of coaching and those in Phase 2 – 12 days.

1.4.1. What is Business Innovation Coaching and how does it work?

Business Innovation Coaching aims to empower SMEs to move towards the successful commercialisation of their innovation. Coaching increases the chances for small businesses to survive and grow. It helps entrepreneurs not only to reach markets but also guides them on issues like strategy, organisation, management, financing and resource development. Coaching is not a consultancy; it does not aim solely at providing answers to SMEs' questions but to empower them to find the solutions themselves.

The main actors of coaching under the SME Instrument are the Key Account Managers (KAMs) of the Enterprise Europe Network⁷ and the business coaches themselves. The coaching experience starts with a KAM from the SME's region visiting the company to analyse its needs. KAM registers these needs in a database managed by the European Commission's Executive Agency for SMEs (EASME). These needs can for example include: 'marketing in Germany', 'improve leadership', 'develop distribution strategy', etc. The database is equipped with a matching algorithm that finds the best match of candidate coaches, that companies can then select.

1.4.2. Coaching Community Development

By the end of 2016, there were more than 400 active coaches participating in the programme. They come from various backgrounds; many have successfully retired from their own businesses and have comprehensive coaching experience, often in large companies. Their average age is around 50, and 18% are women. In general coaches are positive about the SME Instrument scheme for its exceptional clientele and the inspiring diversity of coaching issues.

The SME Instrument aims to build a real coaching community, a common coaching culture and a set of shared practices to provide funded SMEs with the best possible service.

Some quotes from SMEs about received coaching:

Manuel Nina, Smart Separations:

"Wolfgang's approach to our company made us change immensely the strategy for the better. We have also engaged in fruitful discussions with potential partners as part of his network."

Tomáš Šalamon, Netcampaigner:

"I didn't expect much, but the coaching experience with Didier appeared to be incredibly useful."

Carmelo Simón, Urbana de Exteriores:

"The experience with the business coach was excellent. Unai provided help for our project from the internationalization point of view. Coaching was one of the best outcomes that we got from the SME Instrument."

⁷ <http://een.ec.europa.eu/content/support-packages-innovative-smes>

SME Instrument coaches



Kaija Pöysti, Finland:

"I have over 30 years of experience as a successful entrepreneur, business angel investor, board member, and investment fund member.

I grew my 1st company from 1 to 260 people in IT services, and have since helped several other companies achieve significant growth and globalisation".



Franco Malerba, Italy:

"My expertise is in the field of Space: years in industry, years with the space agencies (ESA, ASI), one term as Member of the European Parliament, years in diplomacy as Science Attaché and one mission in space as Shuttle astronaut are the benchmarks of my competences and network of contacts. As founder of Genova Startup I have helped numerous SMEs improve their business plans, networking in consortia, increase their access to market and obtain attention from prospect investors".

1.4.3. Coaching helps SMEs reach the market

A startup will not face the same challenges and needs as an established company. This is why the first step in the Business Innovation Coaching is to understand the SME's context and needs, as part of the needs analysis performed by KAMs.

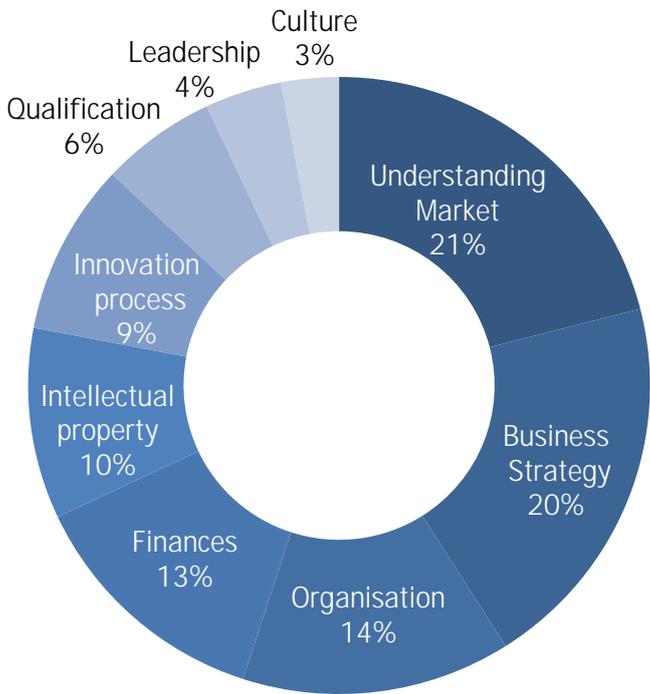
According to the needs analyses, the main strategic priorities for the SMEs are to find new customers (30%) and distribution channels (27%)⁸. This can be done by activating the internal resources of the company like strategy, organisation, market understanding, human resources development, innovation process, intellectual property, finances, leadership and culture. Among these internal resources "understanding the market" is the most cited (21%) challenge for SMEs (See

Understanding the market and defining a business strategy are the most common challenges coaching help to tackle

⁸ Based on 900 coaching cases

Figure 5).

Figure 5 SMEs' challenges tackled by coaching

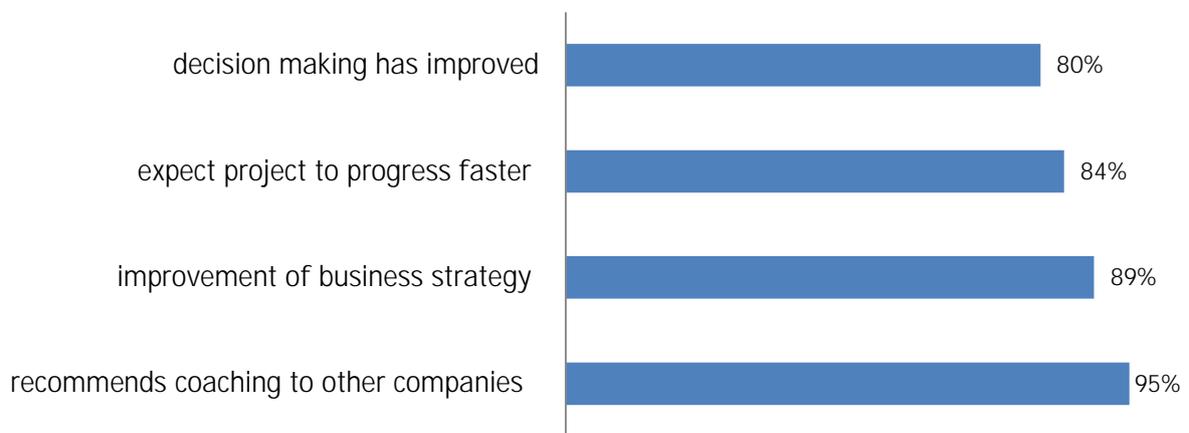


These challenges vary considerably depending on the country of origin of the company. As "understanding a market" is perceived as a challenge by 34% of Dutch SMEs, it's only 17% among Italian SMEs.

1.4.4. Impact of Business Innovation Coaching

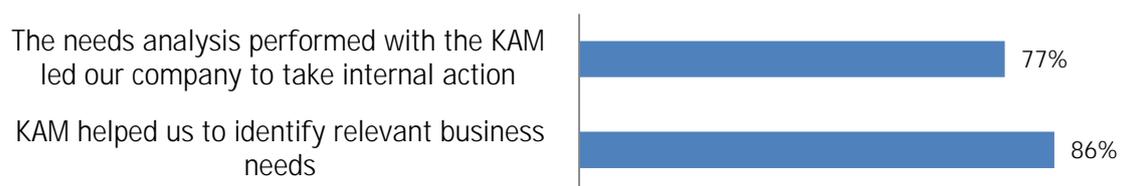
Feedback provided by SMEs on the coaching activities is very positive. 89% agree that coaching had positive impacts on their business strategy. It improved their approach to deal with the company's challenges and speeded up the progress of their business innovation project. Only around 4% of SMEs consider that coaching activities had little or no impact on their activity. Moreover, 95% of SMEs would recommend business innovation coaching to other companies (see Figure 6).

Figure 6 Impact of coaching on SMEs (% of responses agree and strongly agree)



Regarding the opinion of the SMEs about KAMs' performance, the majority of the SMEs (86%) consider that KAMs made a positive contribution. It allowed the SMEs to identify the relevant business needs. The needs analysis performed together with the KAM led to internal actions. Only 5% of companies disagree with this statement (see Figure 7)

Figure 7 Impact of the KAM's activities on SMEs (% of responses agree and strongly agree)





Sector Energy
Phase 1,2 €1,307,305
Spain

www.enair.es



ENAIR's coaching experience

David Bornay, founder of ENAIR Energy SL based in Castalla, Alicante, is a pioneer of modern wind power. His company has been manufacturing small wind turbines (SWT) since 1970 for farms, greenhouses, warehouses and anyone living in a remote place and not connected to the electricity grid. The company got an SME Instrument Phase 1 and Phase 2 funding to develop a new, more efficient wind turbine that needs less maintenance and is cheaper to install.

David Bornay, Enair Channel Manager

"Our coach helped us focus on our new strategy as we are in the process of becoming a different company." commented Salvatore D'Amato. "Fernando kept bringing us back to reality, putting us on the right path and reminding us about what the costs of doing things are."

"

1.5. Business Acceleration Services (Phase 3)

1.5.1. Overview – What are Business Acceleration Services?

In addition to the funding and coaching, another added value offered to the companies by the SME Instrument is Business Acceleration Services (so called Phase 3). The ultimate goal is to accelerate the growth of funded companies by facilitating their access to private investment, finding new business partners, distributors, suppliers and clients and engaging in peer-led learning opportunities.

The SME Instrument's particularity lies in fostering exchanges within the international peer community and providing access to international expertise, finance and partnerships. The experience so far has shown that opportunities to exchange between peers have been very much appreciated by funded companies. The ambition of the programme is to build an SME Instrument Community that will be a platform for trustful peer learning and partnership building, as a way of understanding and gaining markets.

The Business Acceleration Services are available to SME Instrument companies, both Phase 1 and Phase 2, from the start of the project and continue after the project ends. SMEs that receive a SME Instrument support become members of the community for life.

In 2015 and 2016 different options were tested and feedback from the SMEs was collected. Companies had the opportunity to meet at different trade fairs and brokerage events in Europe, “Welcome Days” for newly selected companies and the major “Innovators Summit”, organised in October 2016 in Brussels that brought together more than 600 SMEs, investors and public procurers (see chapters below). In parallel a dedicated Linked-In group allows for on-line exchanges between SME Instrument companies.

In 2017 further services are being deployed, including the “Overseas Trade Fairs Participation Programme” that will bring up to 225 funded SMEs to 15 international trade fairs outside Europe and provide them with commercialisation services such as the organisation of pre-set business meetings, mentoring, company promotion and customised services.

1.5.2. Participation of SME Instrument companies to European and International Trade Fairs

Participation of SMEs to well-known trade fairs and events give them a unique opportunity to find new business partners, potential investors and clients and thereby scale up and conquer new markets. In 2016 selected SMEs participated to 14 well known, international trade fairs and events:



These events were organised in cooperation with Enterprise Europe Network and other initiatives and programmes of the European Commission in order to maximise synergies. The advantages for participating SMEs included: free booths where possible, pitching opportunities, access to brokerage events, privileged contacts with investors and communication coverage.



SME Instrument booth

161 SMEs participated to the 14 events. For roughly 30% of these companies it was a first occasion to go to an international Trade Fair. In most cases this stems from the high participation costs or concerns of having low visibility as "small player" Their main interest was to meet potential business partners, clients and investors.

The top 3 trade fairs in terms of business meetings for the SMEs were Mobile World Congress in Barcelona, Hannover Messe and CeBIT, also in Hannover.

Surveys conducted after the event and 6 months later revealed that in total the companies had 1,747 meetings, 656 of which were declared by participants as potential leads for sales. About a third of the companies revealed the value of resulting transactions⁹, the total of which amounts to around €1.2 million. Seven SMEs declared that they had some business deals with large corporates for a total value of €540,000. These business partnerships were mainly in Joint R&D, Sales and Licensing.

34% of participating SMEs met in total 136 investors and 31% of SMEs declared that they were investment ready and have a pitch deck available on-line. After the events, three SMEs got an investment for a total value of €1 million and one SME received an "in-kind contribution" in the form of using facilities of large corporates. After the event, six SMEs declared that they were winners of service contracts (public procurement) for a total value of €435,000.

Surveyed SMEs also declared that they have employed 90 employees in the following 6 months after the event. Among success stories the company World Gaming Federation opened an office in the Middle East after participating in the SME World Summit Dubai and Greenspider reported new deals for a total value of €1 million following their participation to Mobile World Congress and CeBIT.

⁹ Many companies consider such information as trade secret.



Sector IoT/Transport
Phase 1,2 €1,114,750
Italy/Germany

<http://www.greenspider.eu>

Greenspider found new partners and clients with SME Instrument Business Acceleration Services



Greenspider is developing a device for vehicle sharing that offers geo-location of fleets for all types of vehicles, mobile authentication, integrated maps and plug-in features and reliable pay-per-use, so that renters can find vehicles nearby, book them and pay, all with their smartphone. It also allows users to lock/unlock vehicles, open gates and switch engines on in a secure fashion.

Alessandro Cantore, CEO

"The support of SME instrument was a real injection of oxygen for us to successfully negotiate with investors and customers, it's a real help for small businesses. Of course companies must already have an ambitious and realistic plan that can be transformed into a concrete roadmap thanks to the SME instrument. Participating in trade fairs, like MWC and CeBIT makes B2B meetings possible with specific target operators and helps to communicate your position and create expectations in the community of end-users. MWC and CEBIT also helped us validate our business model in the field – for example engaging Scooter Sharing operators in the pilot projects – which is a key element for attracting investors."

1.5.3. SME Instrument Innovators Summit 2016

The first "SME Instrument Innovators Summit" took place on 10-11 October 2016 in Brussels. More than 600 participants met to network with business partners and investors while learning, exchanging business experiences and catching up with the latest SME instrument programme services. Two key note speakers shared with the audience their valuable experiences about how to scale up team culture in a fast growing business (Damien Morin, CEO SAVE, France) and the do's and don'ts of dealing with investors (Katja Bergmann, Partner at MOOR Capital, Sweden).

The event featured investor pitching sessions, preceded by a pitching training organised in cooperation with the European Business Angel Network (EBAN), an award ceremony for the four

best pitches, participatory workshops and B2B matchmaking to exchange experiences and build new partnerships. The workshops were at the centre of the event and focussed on thematic suggestions collected from companies beforehand (e.g. How could design influence my product? My customer - my ambassador? How do I cash in on my IPR? Big company - friend or foe?).

In addition, two interactive “Open Space” sessions took place to mobilise the experience and energy of the “SME Instrument community” composed of SME instrument companies, investors, corporates and SME instrument staff members around two guiding topics: "How to finance my company?" and "How to scale up?" A dedicated online B2B matchmaking application and a networking area helped people to organise their agendas for the two days. The tool was used by 321 participants and generated 7,554 profile views in total (before and after the event).

The Summit was certainly the highlight of 2016 and considered extremely useful by the participants, many of them reporting that great connections established during the event could prove to become very valuable in the future. The results of the on-the-spot survey show an overall satisfaction rate of 97%.



Networking at the SME Instrument Innovators Summit, Oct. 2016.

2. Who are the SME Instrument Innovators?

SME Instrument attracts small companies of all sizes, ages, profiles and sectors. The 28 European Union Member States and many Horizon 2020 associated countries have at least one company among the funded SMEs. It has attracted both young, market challenging startups aiming for fast scale-up as well as family businesses existing since many years, where the new generation of owners bet on innovation to remain competitive. Service-oriented companies come to SME Instrument to launch their first product on the market. Finally university spin-offs use SME Instrument, especially Phase 1, to test the market feasibility of their technologies.

This kind of stories and many more can be found among SME Instrument companies. This chapter aims at presenting data-backed characteristics of the founded SMEs, such as country of origin, size, age, share of startups, life cycle stage, industry sectors, revenue models and main clients.

2.1. Location of companies and regional hubs

The 2,457¹⁰ companies funded under the SME Instrument come from all EU-28 countries and several H2020 Associated Countries¹¹.

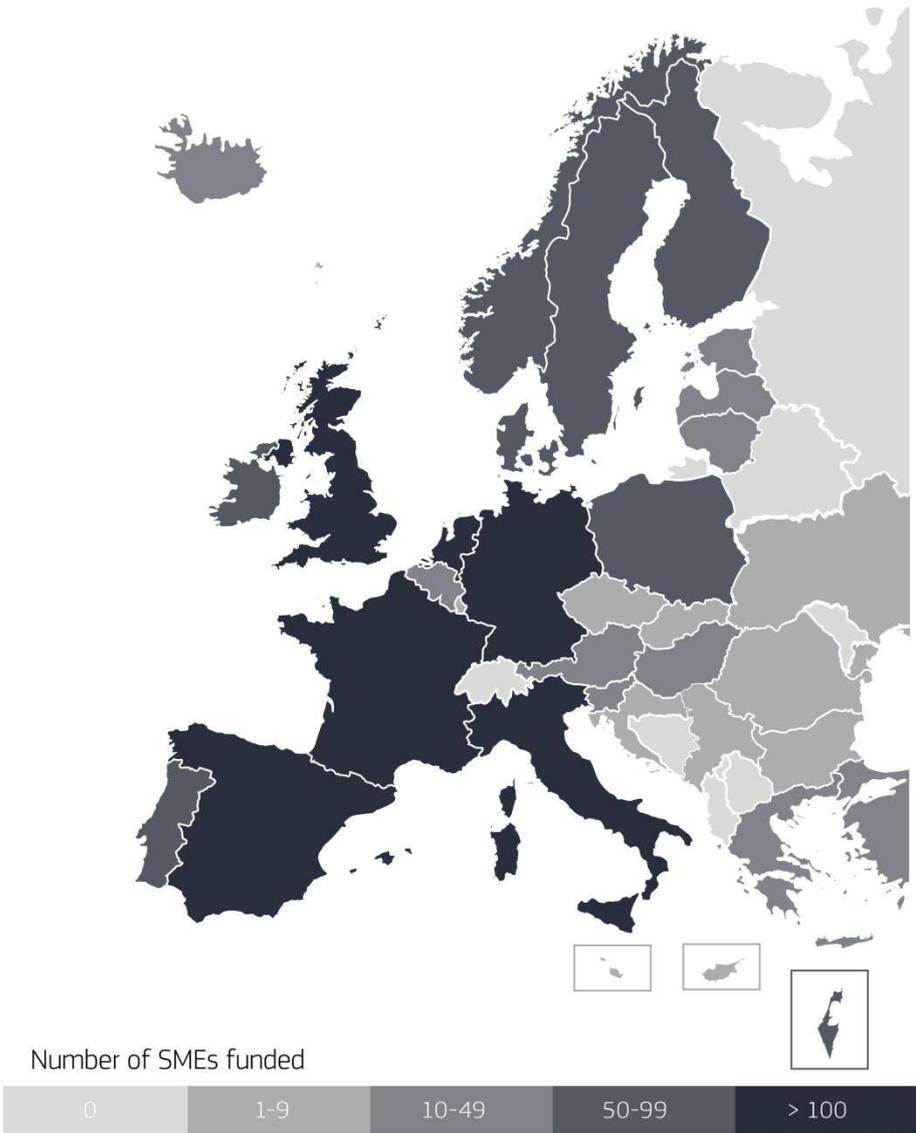
SMEs from Spain and Italy account for one third of both applicants and funded companies. Together with the UK, these three countries represent almost half (47%) of all funded SMEs (See Error! Reference source not found.).

47% of all SMEs participating in the SME Instrument come from Spain, Italy and UK while SMEs from Iceland, Austria, Denmark, Ireland and Sweden are the most effective in applying for the programme

¹⁰ Unique counting of companies, e.g. those that passed through both Phase 1 and Phase 2 are counted just once.

¹¹ Horizon 2020 Associated countries with at least one SME funded under the SME Instrument: Faroe Islands, Iceland, Israel, Norway, Serbia, Turkey, Ukraine

Figure 8 Number of funded SMEs per country



Want to know more about SME Instrument companies?

Visit the [SME Instrument Data Hub](#)!

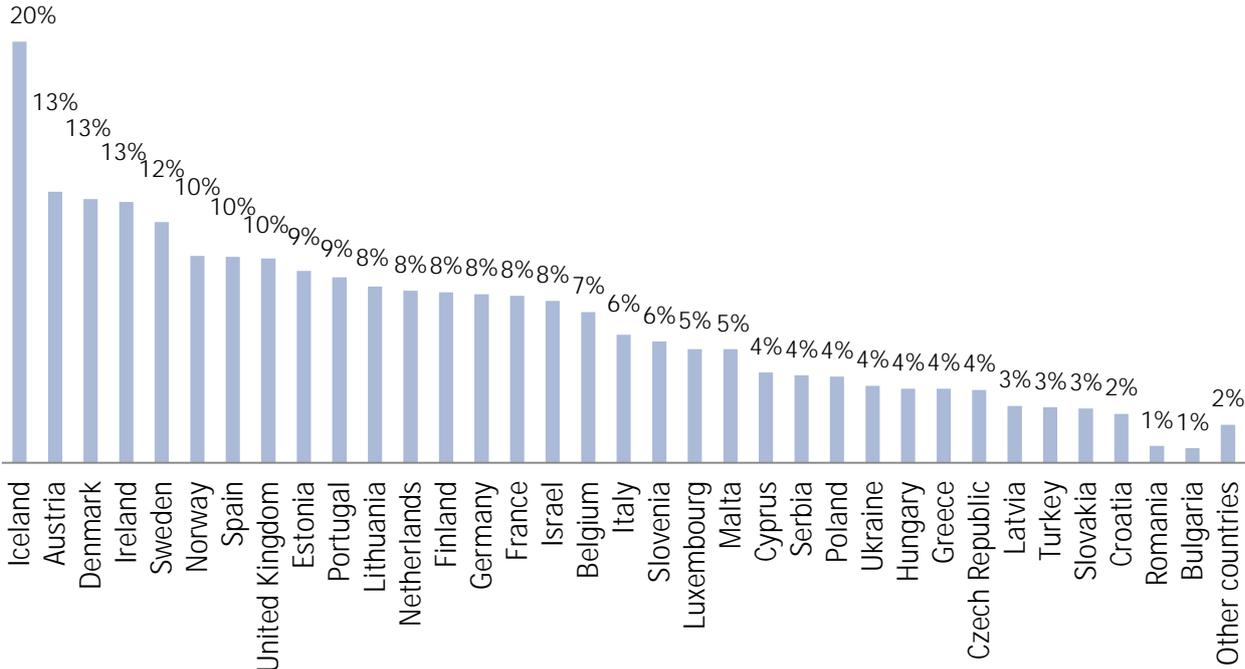
An interactive map and visualization tool show all the SMEs selected for funding under the SME Instrument. You can search for companies on the map using keywords, country, phase, topics, budget and start date. You can also create dynamic graphics based on your own criteria.

However, countries which are the most effective in applying to the SME Instrument, with the highest success rates, are Iceland (20%), Austria (13%), Denmark (13%), Ireland (13%) and Sweden (12%) (see Figure 9). For example Ireland uses the SME Instrument strategically in order to leverage European funds to support the success and growth of local companies:

Irish SME support organisations encourage only the most innovative SMEs to apply for the SME Instrument, advise them on the selection process, and propose other solutions to the companies with less mature innovations. Similarly in Sweden, the whole ecosystem advises companies about SME Instrument, and as a result many innovative companies know about the SME Instrument and apply with success.

Similarly in Sweden, out of 10 Stockholm based companies listed by Wired as "hot startups" of 2016¹² five applied to SME Instrument and one received funding. Two out of the top 10 tech companies that received the highest 2016 VC investments in Sweden are supported by the SME Instrument¹³.

Figure 9 SME Instrument success rates per country



¹² <http://www.wired.co.uk/article/european-startups-2016-stockholm>

¹³ Tech.EU, European Tech funding Report 2016, <http://tech.eu/on/european-tech-funding-report-2016/>

The SME Instrument's geographical distribution matches the main innovation hubs in Europe, as listed by Startup Hubs Europe¹⁴, including London, Berlin, Dublin, Paris, Vienna, Amsterdam, Stockholm,

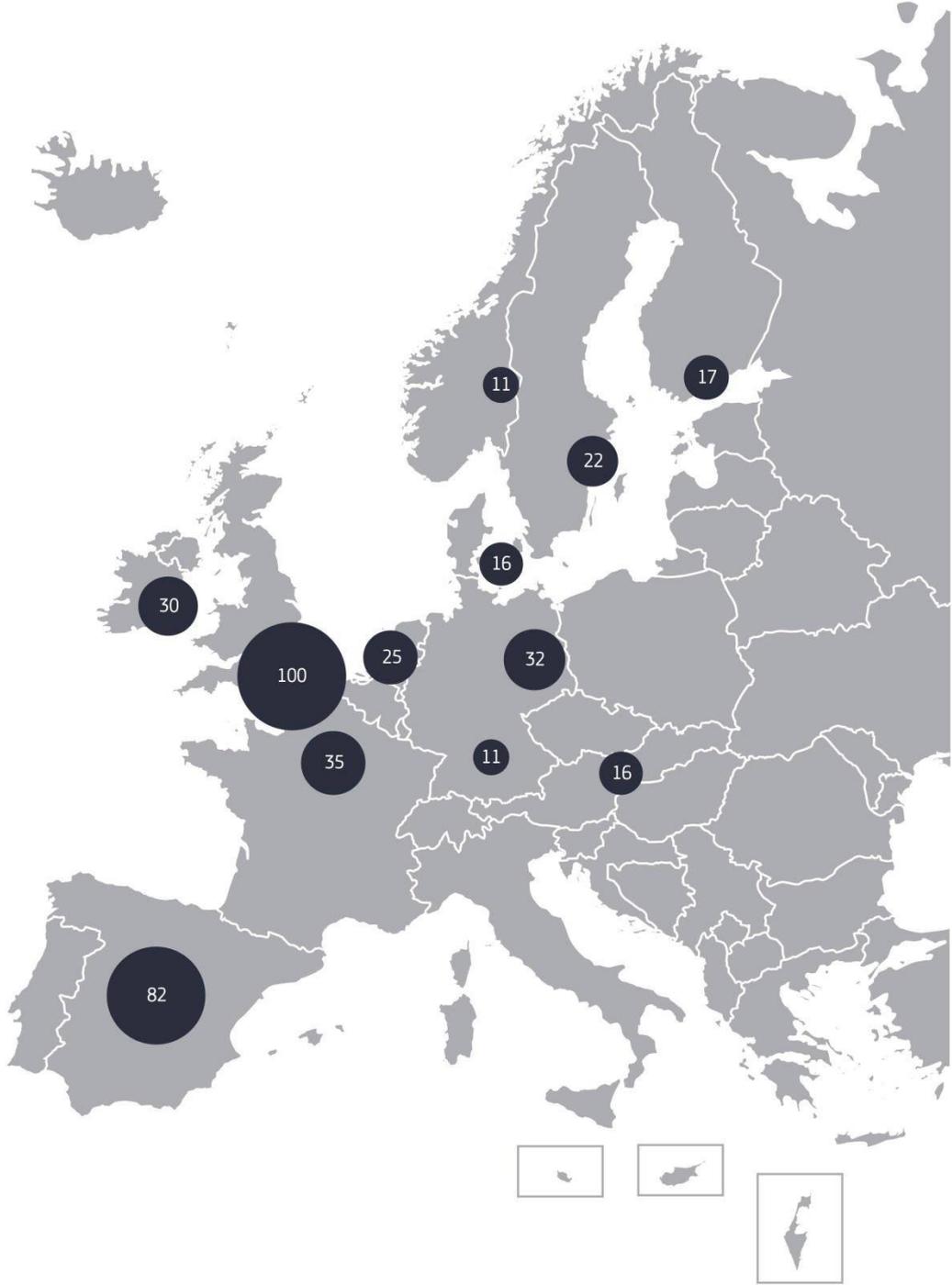
SME Instrument geographical distribution matches main innovation hubs in Europe

Helsinki, Oslo, Munich, Madrid and Copenhagen. These ecosystems offer a generous pull of enablers to innovative companies, like accelerators, incubators and co-working spaces, investors and highly skilled individuals, but also friendly tax regimes and requirements for setting up a business. These characteristics attract innovators. Starting a company in one of the hubs is a strategic decision, and this is why entrepreneurs from all over Europe set up their companies in London or Berlin – the largest hubs by far¹⁵.

¹⁴ <http://www.startuphubs.eu/>

¹⁵ According to Strtuphubs.eu London and Berlin have the highest investment offer in Europe, respectively €12.7 Bn and €4 Bn.

Figure 10 Number of SME Instrument-funded companies in 12 European innovation hubs according to startuphubs.eu



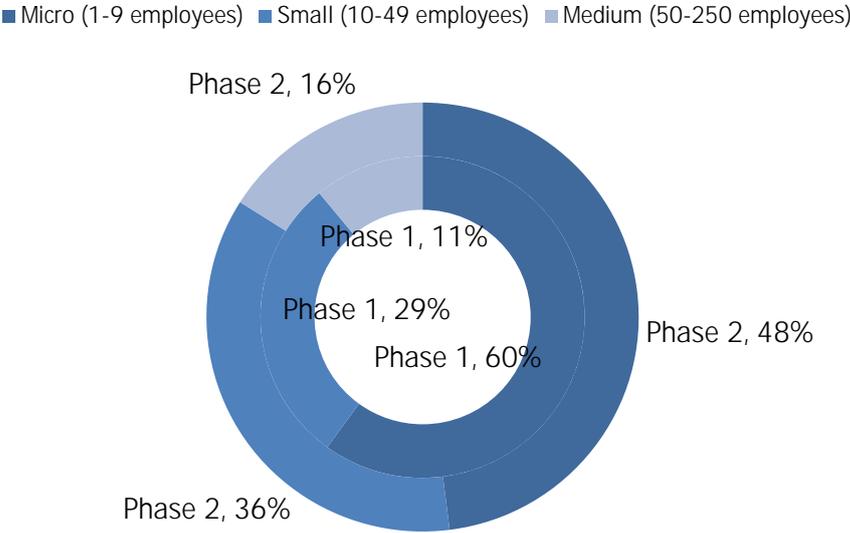
2.2. Stage of development

Most SMEs participating in the SME Instrument are both small and young. Half of them are micro companies with less than 10 employees. This trend is more accentuated in Phase 1, where 60% are micro companies (see

Each year SME Instrument attracts more and more micro companies (less than 10 employees) that represent 50% of funded companies

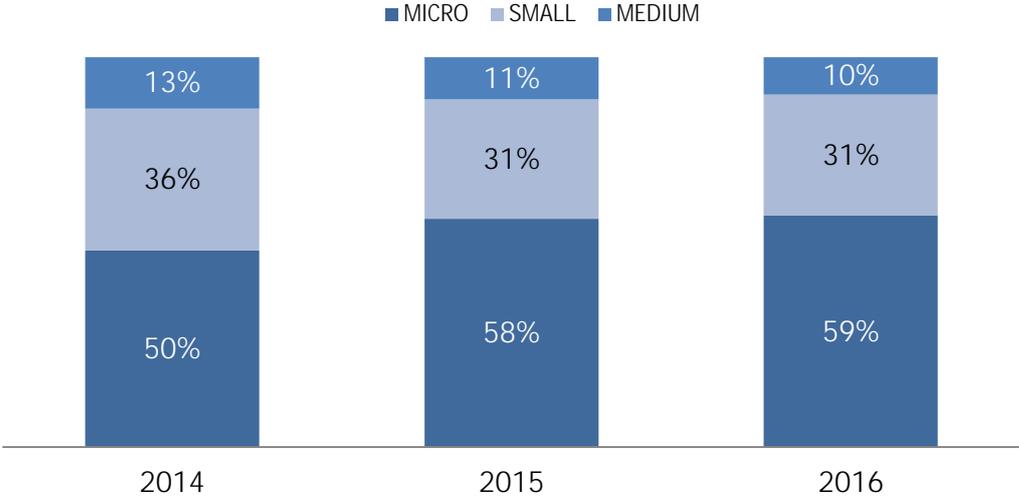
Figure 11).

Figure 11 Size of SMEs by Phase



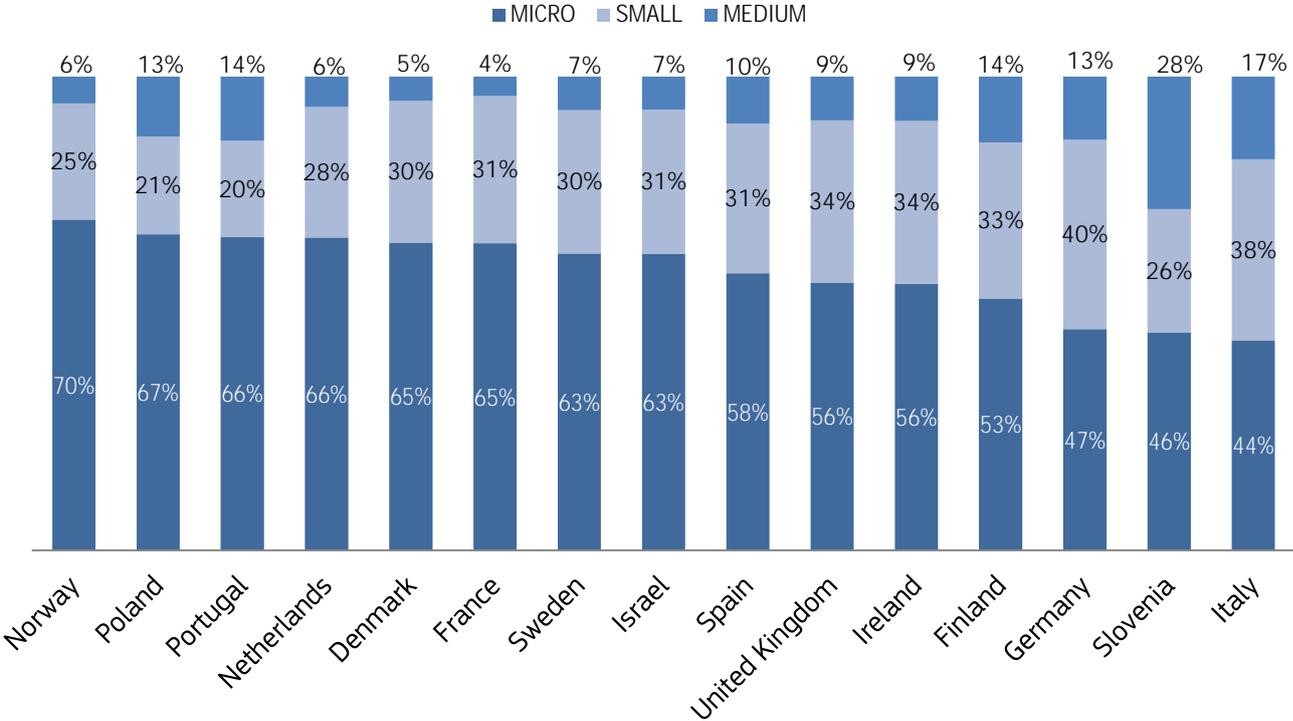
The number of micro companies selected both in Phase 1 and Phase 2 has increased over time – from 415 in 2014 to 574 in 2016. Medium sized companies (above 50 employees) account for around 10% of all funded SMEs (see Figure 12).

Figure 12 Size of SMEs by year of application



The proportion of micro-companies varies significantly by country. Among top 15 countries in terms of participation to the SME Instrument, Norway and Poland have the highest share of micro companies (70%) and Italy the lowest (44%) (see Figure 13).

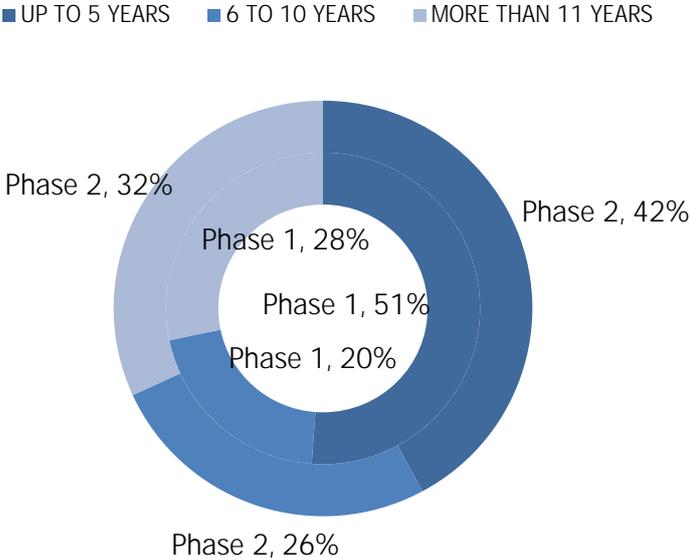
Figure 13 Size of SMEs by country (Top 15 countries in terms of number of SMEs selected to SME Instrument)



The SME Instrument attracts a significant number of startups. According to the EU State-aid Regulation for R&D¹⁶, startups are unlisted small enterprises up to five years following their registration, which have not yet distributed profits and have not been formed through a merger. Following this definition, half of SME Instrument companies are startups. This proportion is slightly lower among Phase 2 companies (42%) (see Figure 14).

Each year SME Instrument attracts more and more startups (less than 6 years old companies) which overall represents 50% of SMEs

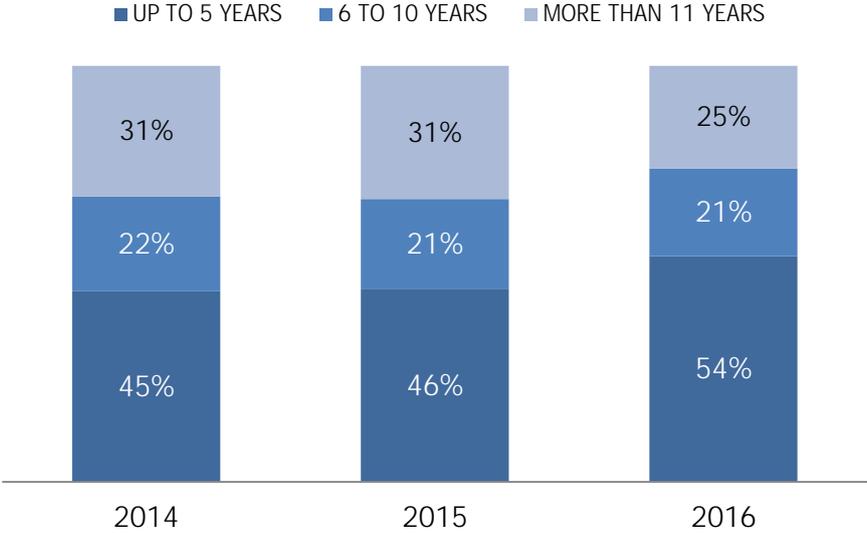
Figure 14 Age of SMEs by Phase



The number of successfully selected startups has increased, especially in 2016, reaching 525 companies (compared to 375 in 2014) (see Figure 15).

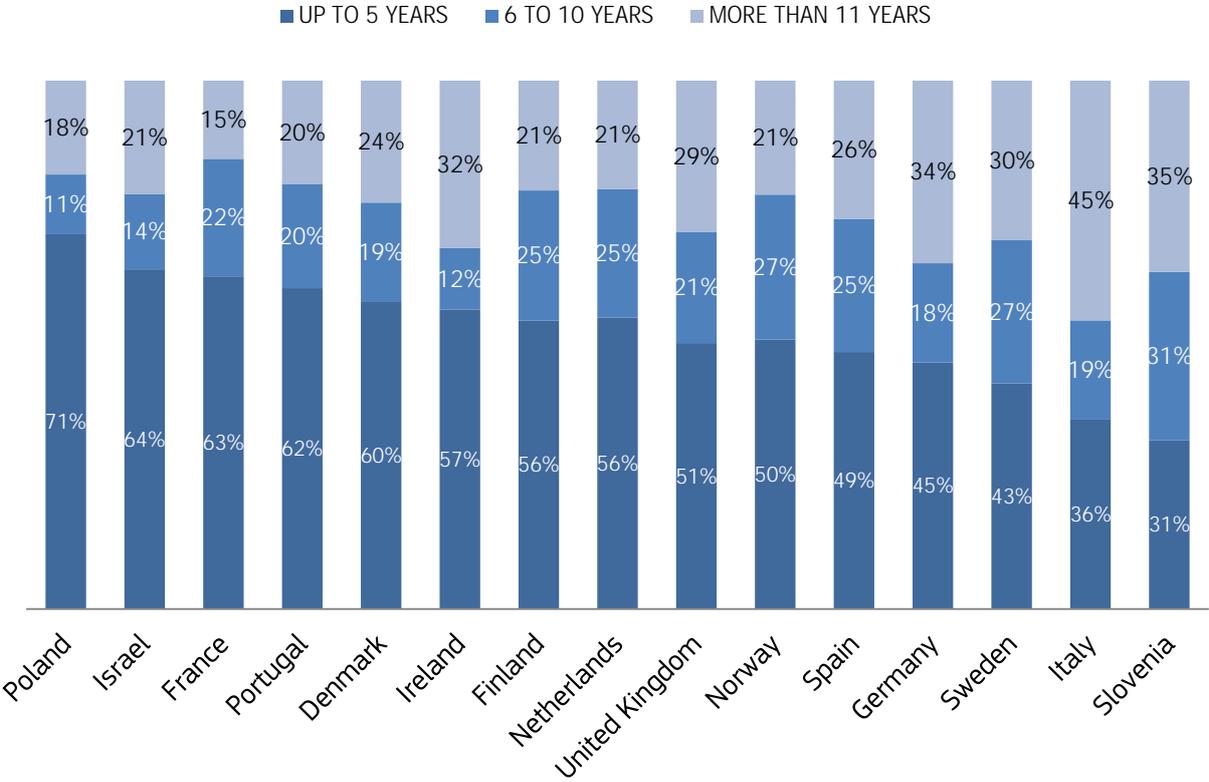
¹⁶ Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty Text with EEA relevance

Figure 15 Age of SMEs by year of application



The proportion of startups participating in the SME Instrument varies significantly by country, Poland has by far the highest share (71%) followed by Israel (64%) and France (63%). Conversely Slovenia and Italy have the smallest proportion, respectively 31% and 36% (see Figure 16).

Figure 16 Age of SMEs by country (Top 15 countries in terms of number of SMEs selected to SME Instrument)



The coaching methodology used in the SME Instrument identifies 6 life cycle stages of companies (more about the SME Instrument coaching in chapter 1.4):

22% of SMEs are in upscaling stage, already conquering new markets

Pre-industrialised stages:

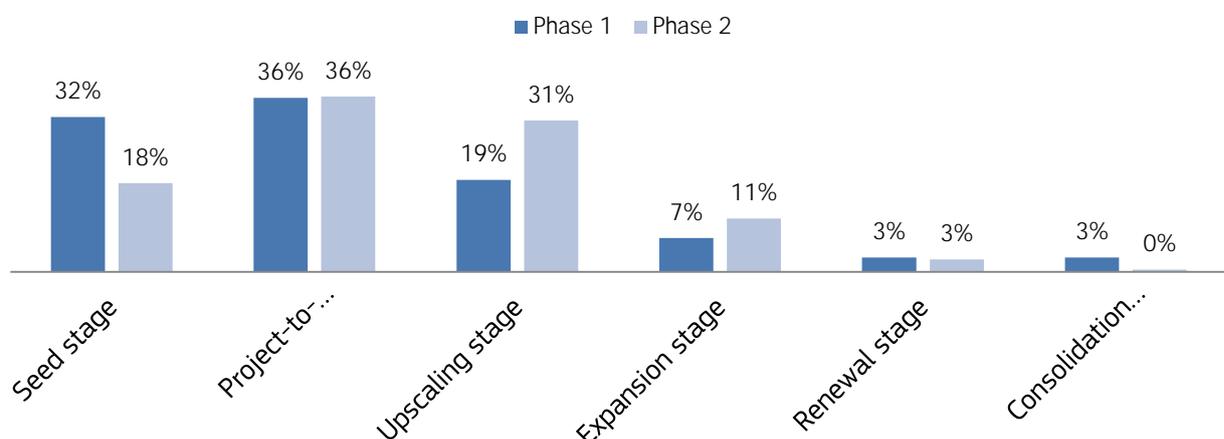
- Seed stage companies have a concept and are looking for their first clients and a first round of financing.
- Project-to-project companies have already won several customers and are developing their project directly with each individual customer.
- Upscaling companies are thinking of how to segment potential client groups, how to adapt their product to these groups, and at the same time organise supply chain, production and distribution and reach economies of scales.

Industrialised stages:

- Expansion companies are conquering new markets and growing internationally. They start delegating management and control; they engage in HR development and new partnerships.
- Renewal companies look for new business models, into diversifying their products, services, or their organisation, finding new sources of ideas, new distribution channels, new partnerships and 'change management'.
- Consolidation companies increase productivity and efficiency toward cost leadership. They need to optimise and outsource or merge, or consider renewal anyway.

The majority of companies are in the project-to-project stage (36%). The highest share of very early stage companies is in Phase 1, which also explains that some Phase 1 SMEs are not ready to go to Phase 2. Finally 22%, mainly Phase 2 companies, are in the upscaling stage, where they are organising their company to reach a larger number of clients, conquer new markets and gain an important part of the market share (see Figure 17).

Figure 17 SMEs Life Cycle Stage





Sector Fintech
Phase 1,2 €1,270,387
Portugal

<http://www.xhockware.com>

Supporting startups



João Rodrigues, CEO

Do long supermarket queues make you fidget? Portuguese startup Xhockware has developed YouBee that allows shoppers to checkout a full shopping cart, pay and leave the store in under a minute, using only a smartphone and a Qrcode. No need for buying new terminals for shops nor any software integration, shoppers can scan the items in the shop with their smartphone, create and synchronize shopping lists, organise information according to coupons, promotions and special offers and manage their purchase history.

"The SME Instrument funding, both Phase 1 and now Phase 2 played a crucial role in driving the strategic growth and establishing the credibility of our startup. It became possible to allocate resources for innovation and research, allowing the development of new features that increase the competitiveness of the company and the differentiation to other established competitors, but what's more it corroborates the merit of the product, helping with the recognition from our potential customers".

2.3. Industries, Revenue Models, Customers and Users

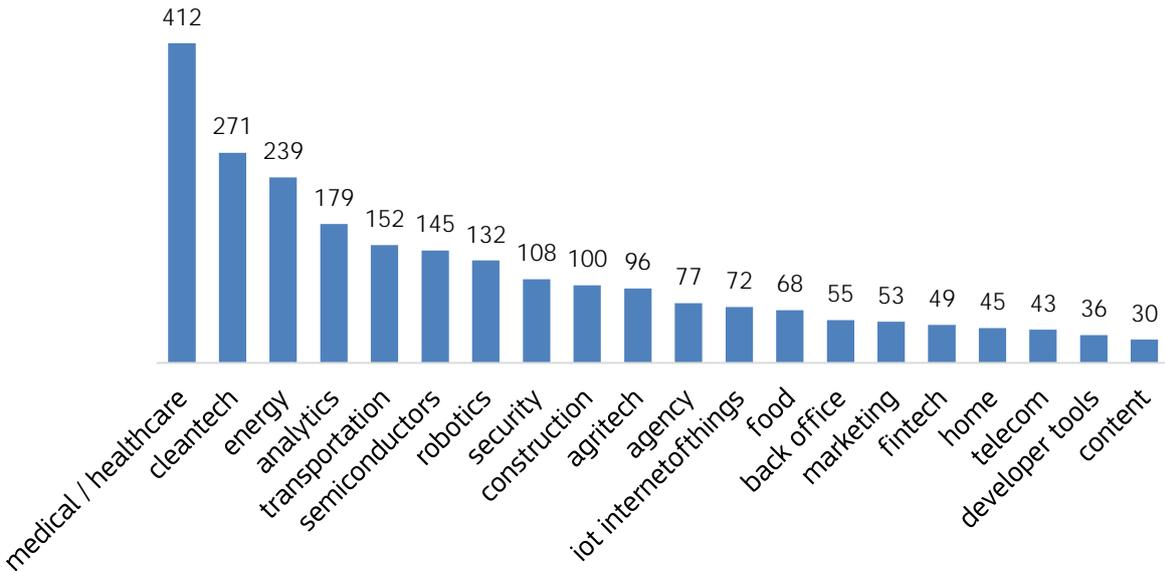
Under the SME Instrument, application process is organised according to 13 predefined topics, however, the programme funds businesses that operate in more than 30 different industries.

Most funded companies are active in medical/healthcare and cleantech industries

This analysis applies a categorisation of industries and revenue models used by Tech.eu, European technology journal, which are widely used in the tech industry and venture capital world. The categorisation indicates the market a given company is active on, bearing in mind that an SME can be active on more than one market.

The top 3 industry sectors, where SME Instrument companies are active, are medical and healthcare (412 SMEs), cleantech (271 SMEs) and energy (239 SMEs) (see Figure 18)¹⁷. This result is correlated to the fact that a large budget is available for companies in the 3 topics corresponding to these industries, and consequently more companies are funded in these topics. The ICT topic (Open and disruptive innovation), which holds the second highest budget in the SME Instrument, is also the most open and transversal one, meaning that it is spread among many of these industries, notably analytics, semiconductors, robotics, security etc.

Figure 18 Distribution by industry of SME Instrument companies (Top 20 Industries)



Definitions for some of the industries:

| | |
|---------------|---|
| Analytics | Companies that provide data analysis, statistical insights, predictive trends |
| Back office | Middle or back office company functions: HR, payrolls, accounting |
| Home | Includes everything home related, from flower deliveries to furniture and home security, home electronics, and connected home |
| Content | Media, news, photos, videos, social networks |
| Collaboration | Anything businesses can use to work together more efficiently, for example documents signing or messaging |
| Agency | Companies that provide a service but do not build any tech product, for example consultancy companies |

¹⁷ One SME can be tagged under 2 or 3 industries, in the analysis it is counted for each of the industries it is tagged for.



Sector Novel Food
Phase 2 €1,265,193
Italy

<http://www.newglutenworld.it>

New Gluten World: from lab to market



New Gluten World aims to make wheat accessible to celiac, intolerant or gluten-sensitive patients. Their ground-breaking technology removes toxic allergens in gluten contained in wheat with a more natural and efficient process than ever before. The idea is to replace the traditional “gluten free” ingredients with a natural and safe physic-chemical process modifying the toxic component of gluten, while leaving its mechanical, nutritional, and sensorial properties.

Carmen Lamacchia, CEO

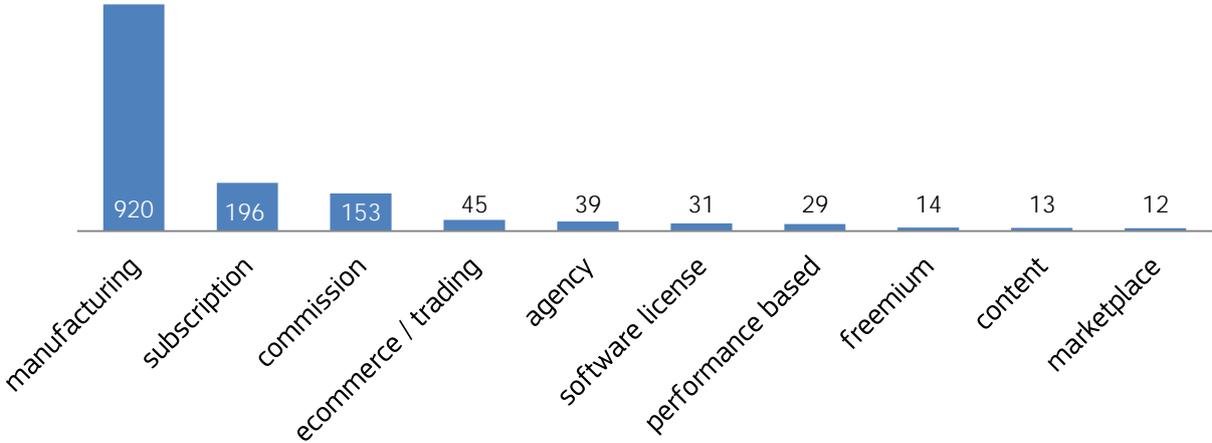
"We were flying a small airplane, and the SME instrument turned it into a space rocket! Thanks to the EU funding, New Gluten World experienced a steep acceleration. Our dream of a fully operational lab to detoxify gluten in wheat kernels became a reality. We could begin clinical validation of our scientific discovery. We hired talented staff, developed a prototype oven, and brought in experts in the legal, financial, and communication field. In short, we jumped three years ahead in our goal of placing Gluten Friendly™ products in the global market".

The next part of the analysis outlines the distribution of companies according to their revenue model (see Figure 19). As for the industries, a company can have more than one revenue model. Manufacturing is the top

Manufacturing is the most common revenue model for SME Instrument companies

revenue model chosen by the majority of SME Instrument companies (920). It is followed by Subscription (196), Commission (153), Ecommerce/Trading (45), Agency (39) and Software Licence (31).

Figure 19 Distribution by revenue model of SME Instrument companies (Top 10 Revenue Models)

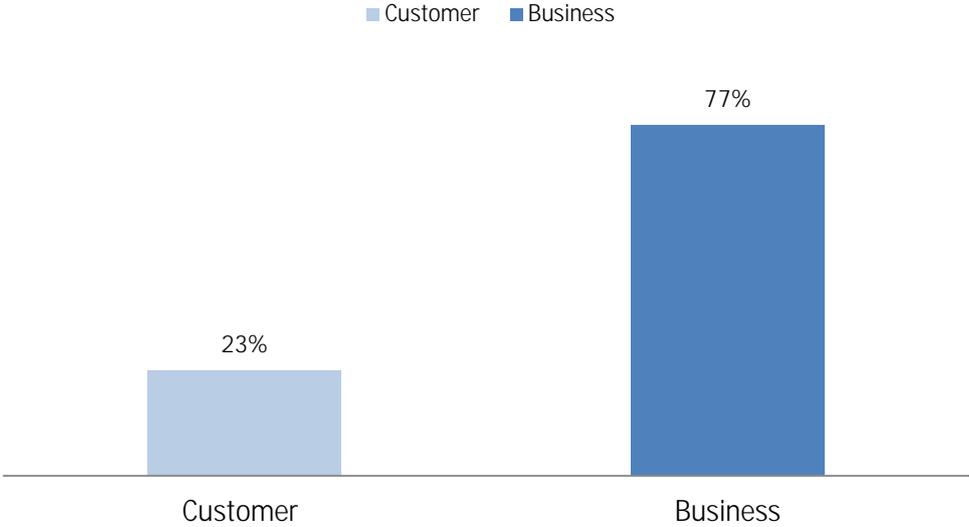


| Revenue Model definition: | |
|---------------------------|--|
| Manufacturing | Selling of produced goods |
| Subscription | Recurring payment: monthly, yearly |
| Commission | Business charges a fee for a transaction that it mediates between two parties |
| Marketplace | Where offer and demand meet, but plays a big role in securing the exchange (for example takes care of the payment) |
| Freemium | Offering a product or service free of charge while charging a premium for advanced features |
| Agency | Companies that provide a service but do not build any tech product, for example consultancy companies |
| Ecommerce/trading | This revenue model is the implementation of any of the other revenue models online |

Regarding customers, a large majority (77%) of SME Instrument companies addresses B2B users with their product or service. One fourth concentrates on B2C (see Figure 20).

77% of SME Instrument companies address B2B users

Figure 20 SME Instrument companies' preferred clients





Sector
Phase 2
France

Cleantech/Sports
€733,231

<http://www.naturalgrass.fr>



Bertrand Picard, CEO

Natural Grass: scaling-up and selling abroad

Natural Grass makes innovative hybrid grass – 100% natural grass rooted in synthetic substrate – that gives outstanding properties to grass-covered sports fields. In fact, four out of ten Euro 2016 fields were covered with grass developed by Natural Grass (Bordeaux, Lyon, Saint-Etienne and Toulouse). Thanks to exposure from the Euro 2016 and the Horizon 2020 funding, the AirFibr technology crossed the French borders to get new major international clients in Spain and the UK. With this extra flexible and resistant grass the company's long term aim is to bring nature back to cities and spreading urban green areas like green roofs and green parking slots.

"One of the biggest challenges of a small company such as Natural Grass is the industrialisation of the process. The EU funding is helping us to overpass this vital milestone in order to scale up our company. Hence, the SME Instrument came at the right moment to support our exponential development of the last months. It is helping us to become an international company selling our technology to some of the best football clubs in the world such as Real Madrid and Arsenal FC."

2.4. Geographic target markets

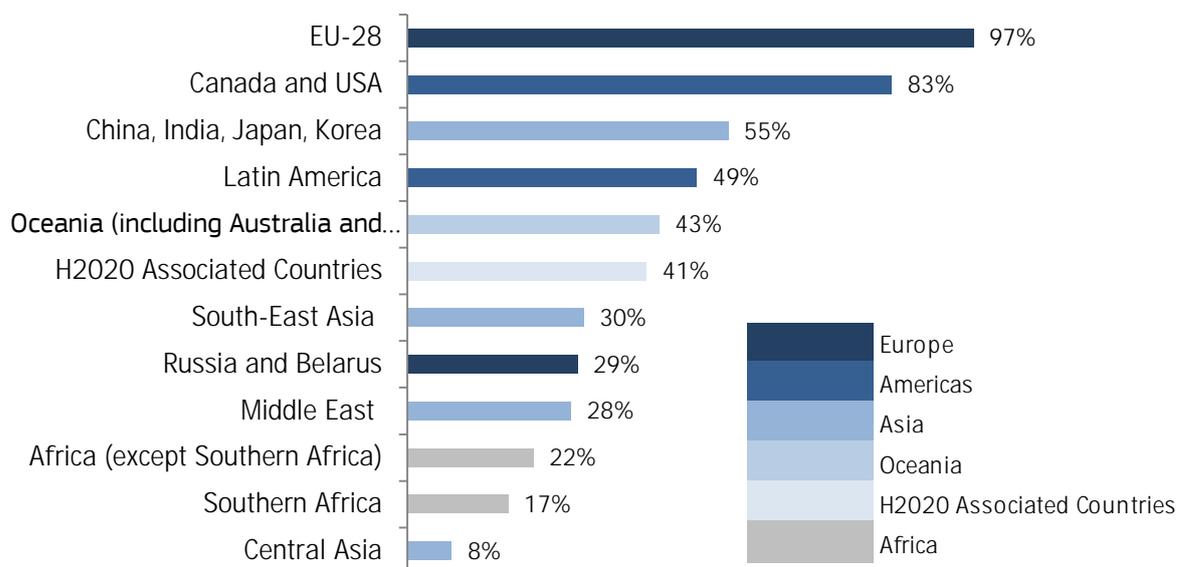
In order to be selected for funding, companies applying for the SME Instrument must have the ambition to grow beyond national borders on a European, if not global, scale. Funded SMEs were surveyed for this report to collect information about their preferred geographical target markets.

Most popular target markets are USA and Canada outside Europe and Germany and UK in the EU-28

According to the 93 responding companies surveyed in January 2017, the most popular destinations are EU-28 countries (97%) and Northern America (83%) – USA and Canada. About

half of them consider doing business in China, India, Japan and Korea (55%), Latin America (49%), Oceania, including Australia and New Zealand (43%) and the countries associated to the Horizon 2020 programme (41%). Around a quarter of respondents envisage entering the African market (see Figure 21).

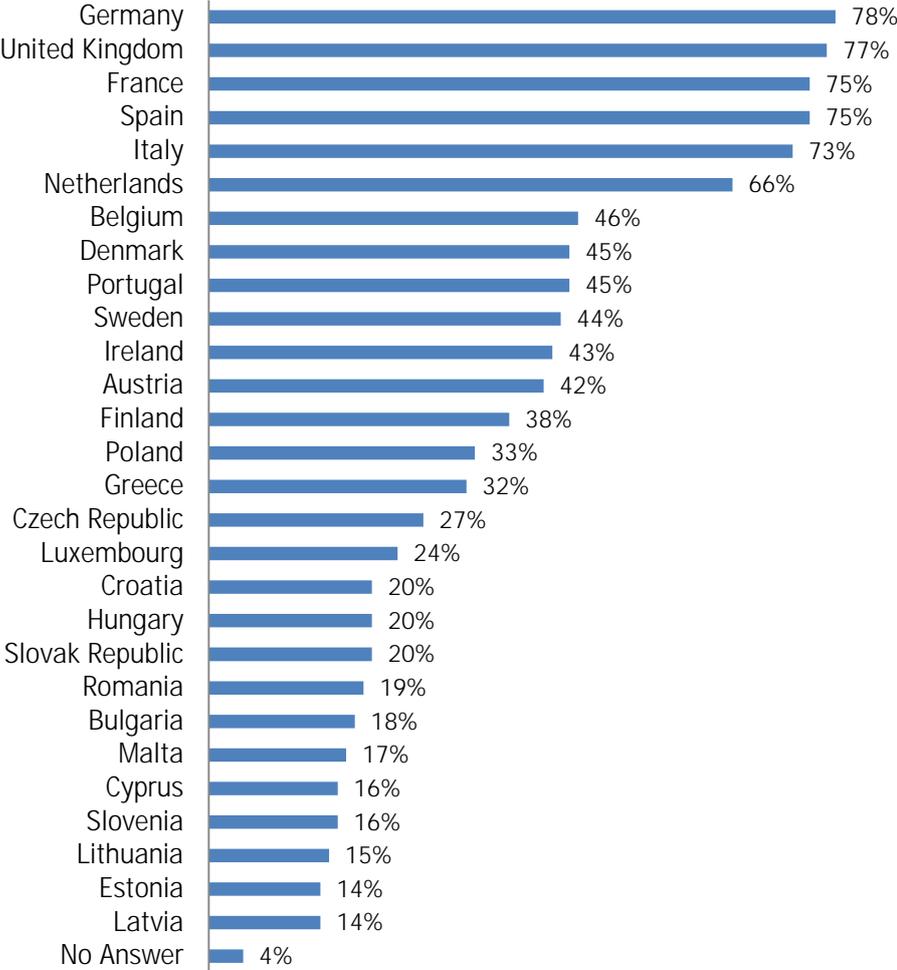
Figure 21 Geographic target markets of SME Instrument companies



| | |
|----------------------------------|---|
| Latin America | Mexico and Central America (Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama, Mexico); South America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela), Caribbean Islands |
| Oceania | Australia, New Zealand, Pacific countries |
| H2020 Associated Countries | Iceland, Norway, Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey, Israel, Moldova, Switzerland, Faroe Islands, Ukraine, Tunisia, Georgia, Armenia; |
| South-East Asia | Singapore, Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Viet Nam, Philippines, Thailand; |
| Central Asia | Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan |
| Middle East | Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates, Iran, Iraq and Yemen |
| Southern Africa | Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe; |
| Africa (except Southern Africa): | Northern Africa (Algeria, Egypt, Libya, Morocco, Sudan, Tunisia, Lebanon and Western Sahara), Western Africa (Benin, Burkina Faso, the island nation of Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, the island of Saint Helena, Senegal, Sierra Leone, São Tomé and Príncipe and Togo), Indian Ocean (Comoros, Mauritius and Seychelles, Réunion and Mayotte), Central Africa (Burundi, the Central African Republic, Chad, the Democratic Republic of the Congo, Rwanda, Angola, Cameroon, the Central African Republic, Equatorial Guinea, Gabon, São Tomé and Príncipe), Horn of Africa (Djibouti, Eritrea, Ethiopia and Somalia). |

Among the EU-28 countries, Germany (78%) and United Kingdom (77%) were chosen as the most attractive destinations, closely followed by France, Spain and Italy. Almost half of the interviewees orientate towards Northern Europe and Portugal. Around one fifth indicated Eastern European and the Baltic countries as business destinations (see Figure 22).

Figure 22 SME Instrument most targeted markets in EU28



3. Outputs, Results & Impacts

The SME Instrument is the ever first innovation tool under the EU's research and innovation funding that is designed exclusively for single, highly innovative SMEs. Three years after the start of the programme, first results and first indications of potential impacts are starting to surface.

The main goal of the programme is to support growth. In a medium term, private investments raised by the companies are a good proxy for expected growth as well as the market validation of the companies' innovation's potential. Initial Public Offerings (IPOs), the amounts gathered through first sale of stocks by companies on the public stock exchange, are yet another way to measure growth. In order to measure the success of the programme in a long run, companies' turnover and valuation will be observed.

Although the business world moves fast, the full potential of these indicators will be revealed only after several years. For example, in its recent report, "SME equity financing atlas"¹⁸, PWC Accelerator analyses the impacts of seed investments 10 years after the funding. In this report, results and impacts of the SME instrument are observed only three years after the start of the programme and are therefore only a glimpse of future potential.

This chapter looks at first outputs, results and impacts generated by funded SMEs. It presents outcomes directly resulting from the SME Instrument support, like feasibility studies in Phase 1 and prototypes, testing activities and clinical trials in Phase 2, as well as innovations put on the market. Patents in Phase 2 and structural effects on the innovation management capacities within the firms in Phase 1 are also analysed. Finally, investments obtained after the selection to the SME Instrument, including IPOs, and first indications of change in turnover and employment of companies in Phase 2 are reported.

3.1. What does SME Instrument finance? The innovation power of the SME Instrument

The objective of Phase 1 is to explore the scientific or technical feasibility and the commercial potential of the company's innovative idea and to develop it into a credible and scalable business plan. The typical activities undertaken by the companies in Phase 1 are: risk assessment, market research, user involvement, analysis of regulatory constraints or standards regimes, intellectual property management, partner search and feasibility assessment. By the end of 2016 more than 1,300 feasibility studies were carried out by companies in Phase 1.

In Phase 2, companies develop their business concept further into a market-ready product, service or process aligned with the company's growth strategy. Activities here include test series, prototyping, validation, demonstration and testing in real-world conditions and market replication.

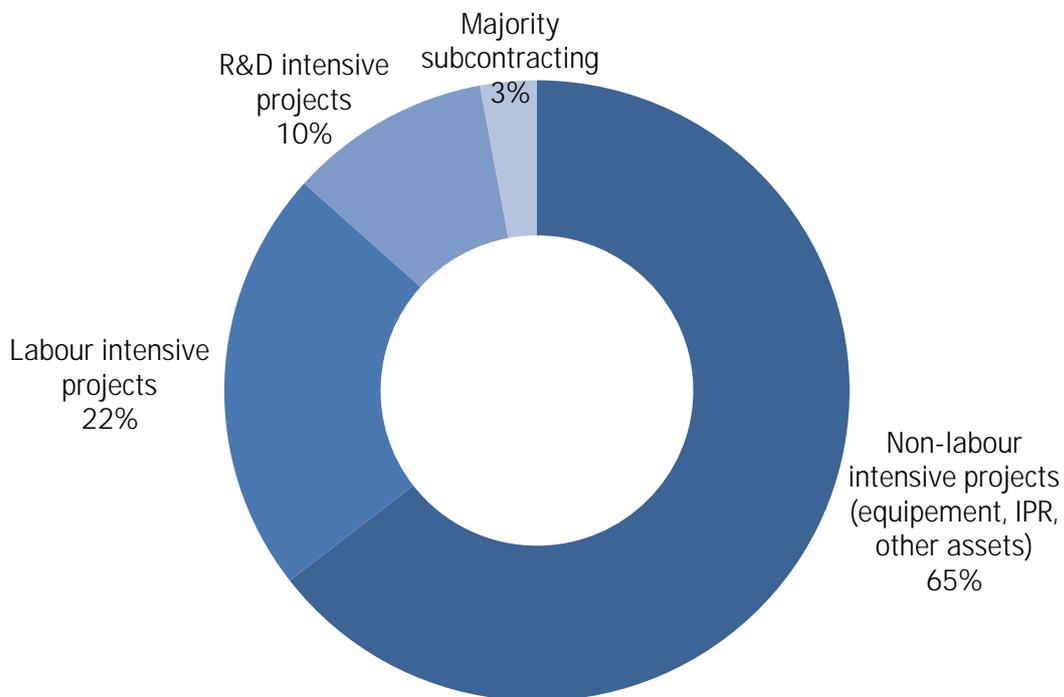
This chapter concentrates on analysing the types of activities undertaken by companies in Phase 2 throughout the project as well as their potential innovation power – new to the market/firm products, processes or methods.

¹⁸ <https://www.pwcaccelerator.com/pwccaccelerator/docs/sme-equity-financing-atlas-publi.pdf>

3.1.1. Labour, R&D and Asset intensive projects

The budget estimations of Phase 2 projects make it possible to differentiate between the kinds of activities are financed by the grant. The amount of the project's budget dedicated to personnel costs, subcontracting and other direct costs including i.e. equipment, IPR or other assets costs can be identified. Based on the majority share of the projects' budget dedicated to each category it was possible to single out: labour-intensive projects (more than 60% of costs claimed for personnel); majority subcontracting projects (with more than 50% of costs for subcontracting); non-labour intensive projects – all other projects for which the majority of costs are in the category "other direct costs" which englobe both equipment costs, IPR and other assets for the project. Furthermore thanks to economic activity classification, projects led by companies with scientific research & development as their main economic activity were identified (see Figure 23).

Figure 23 Cost categories within Phase 2 projects



The resulting picture shows that 22% of projects are labour intensive with the majority of costs spent on personnel. Only 3% of projects subcontract the majority of their activities and these are mainly life science projects, subcontracting clinical trials. 10% are R&D performing companies. The majority of projects are in a very large category of non-labour intensive projects, where costs are divided between personnel costs and other direct costs that can include equipment, IPR and other assets costs.

3.1.2. Testing activities and prototyping

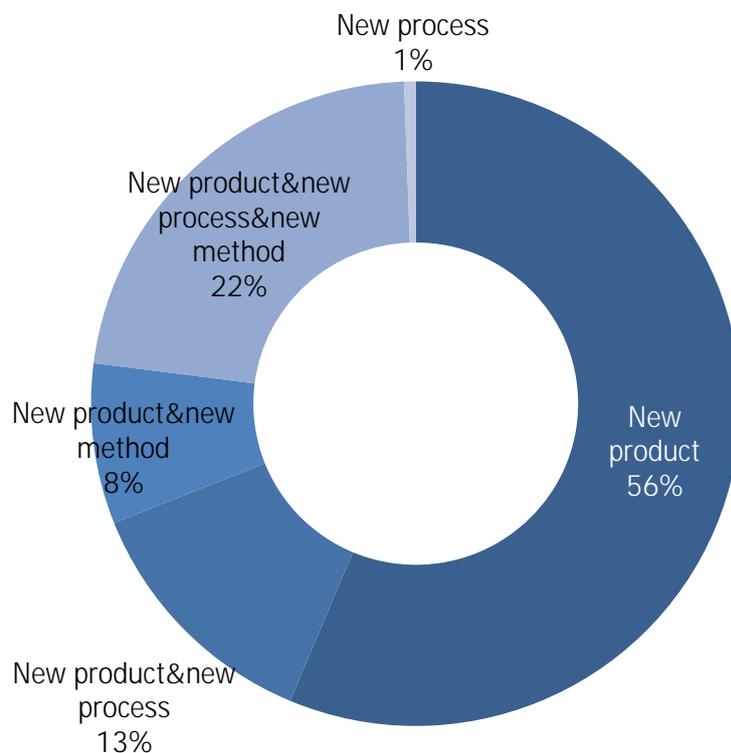
Main activities in Phase 2 projects are testing activities and, often prototyping. Companies report about these activities in the so-called continuous reporting tool. Until the end of 2016, around 164 companies in Phase 2 could encode their data in the tool. Out of these, 87% are producing at least one prototype, 75% are performing testing activities and 15% clinical trials.

3.1.3. Innovations: new products, processes and organisational or marketing methods

Testing and prototyping activities speed up the introduction of innovations on the market. Innovation theory makes a distinction between new (or significantly modified) products (goods or services), new production processes and innovation as a new organisational or marketing method. Phase 2 reporting provides information on these innovations. Until the end of 2016, 174 companies have encoded their data in the reporting tool. 56% of SMEs are working solely on a new product, 13 % on a new product and new process; and 22% on a new product, new process and new method on the same time. Only one company is working solely on a new process (see Figure 24).

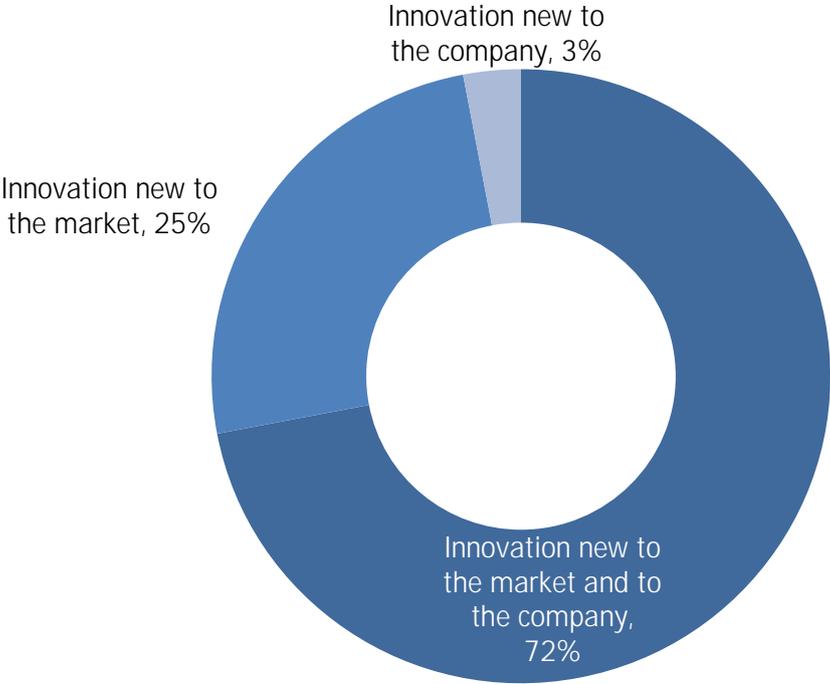
97% of innovations supported by the SME Instrument are new to the market

Figure 24 Types of innovations being developed by Phase 2 companies



Companies also report whether their innovation is new to the market or new to the company. 25% report that their innovation is new to the market, 72% that it's new to the market and to the company and 3% only to the company (see Figure 25).

Figure 25 Phase 2 companies developing innovations new to the market/company



3.2. Does the SME Instrument have structural effect on companies' innovation capacity?

The aim of the feasibility study carried out under Phase 1 of the SME Instrument is not limited to supporting the SMEs in bringing their innovation project forward but creates a permanent learning effect that helps build their innovation capacity. This is reinforced by the business coaching attached to the grant. At the end of Phase 1, companies fill in a final report including questionnaire on the structural effects that the feasibility study and coaching had on their company¹⁹.

Phase 1 and coaching have structural impacts on the functioning of the SMEs, especially to "Better understand clients' needs"

The SMEs are asked to rate on a scale from 1 to 10 (1=no progress; 10 = most progresses) a number of these potential structural effects: better understanding of clients' needs; better knowledge about competitors; better understanding of IPR issues; better understanding of technical issues; better internal work organisation; better knowledge about marketing methods; more strategic approach in change management; more strategic approach for identifying risks and risk

¹⁹ By the end of 2016, 1,399 Phase 1 companies have filled in the questionnaire

management; increased reputation/visibility of the company; better relation with local business support organisations.

The overall results are very encouraging: all the areas were rated between 7 and 9 points (median), which means that SMEs have made important progress in all of the listed areas. This allows us to assume that overall the funding and coaching have a positive effect on SMEs in the pursuit of their project and their development as innovative companies. The top rated reply is "Better understanding of clients' needs" with median 9, followed by "Better knowledge about marketing methods", "Increased reputation/visibility of the company", "More strategic approach for identifying risks and risk management", "Better understanding of technical issues" and "Better knowledge about competitors", all with median score 8 (see Figure 26).

Figure 26 Improvements after Phase 1 funding and coaching (median scores)



3.3. Does SME Instrument help in developing IPR?

An innovative, new or improved product that meets customer expectations, offers a business a new market territory that remains without competition for as long as it retains its innovative advantage. Intellectual Property Rights (IPR) play a significant role in helping a business to gain and retain its innovation-based advantage. The objective is less about giving a business the right to use an invention rather than to prevent others from using it for a predefined period of time. Therefore patents are used as a proxy input for innovation. More specifically, the number of patents owned by an enterprise has often been used as one of the main indicators for determining the innovation intensity of that enterprise.

A quarter of Phase 2 companies have filed in total 240 patent applications

However patenting has a high cost, therefore many SMEs are more inclined to use trade secrets rather than patents as a form of protecting their inventions to stay competitive²⁰. On the other hand, because of high costs, when an SME decides to patent its innovation, it has usually made a thorough market study and is convinced about the success of its invention. Therefore patenting can be a proxy about the quality of innovation. Besides, IPR-related costs could be eligible for reimbursement under the Phase 2 project.

By the end of 2016, out of 250 companies in Phase 2 that could report about IPR applications, 64 (25%) reported 240 patent applications (on average 4 per company). This represents 70% of all patent applications developed within H2020 projects. One third (80) of these IPR applications were already awarded (75% of all awarded IPR applications reported by Horizon 2020 projects) (see Figure 27).

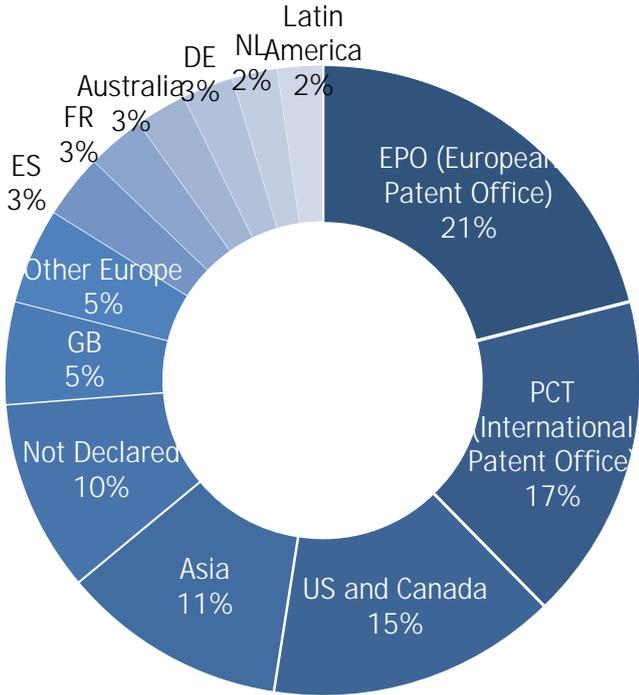
Figure 27 IPR applications by Phase 2 companies



Patents are the most popular intellectual property types, followed by trademarks. SME Instrument - funded companies filed only very few applications for registered design. The preferred patent office by SME Instrument-funded companies is the European Patent Office (EPO) that accounted for 21% of applications, followed by the International Patent Office (PCT) with 17%, US and Canada (15%) and Asia (11%) (see Figure 28).

²⁰ Mark Rogers, 1998, The Definition and Measurement of Innovation

Figure 28 IPR applications of Phase 2 SMEs by application office



3.4. Does the SME Instrument help leverage private investments?

3.4.1. Speeding up time to investment and leverage effect

The amount of private investments raised by the companies after receiving an SME Instrument funding is an important indicator that can be used as a proxy for expected growth and market validation of the innovation's potential.

The information about private investment was collected in collaboration with Dealroom²¹, a Dutch company using big data technologies to scan internet and other sources in search for publicly available data about innovative companies. It monitors the progress of private companies by tracking indicators of innovation and growth, like investments, both venture funding and to a lesser extent government grants, exits (IPO, merger & acquisition), accelerator support etc. The reliability of the information is around 85%, given that some investment rounds are not disclosed. The reliability of the data has been confirmed through verifications. The following analysis provides an estimation of the situation which is likely to be higher overall.

In March 2017, Dealroom collected data about all investments ever gathered by the SME Instrument-funded companies, both before and after the SME Instrument funding and until the end of 2016. In the process 2,136 companies in total were scanned and mapped. The aim of this chapter is to analyse whether the SME Instrument funding had a so called de-risking factor and helped the SMEs attract more and faster private investments, therefore it focuses on analysing investments received after the SME Instrument funding decision.

²¹ <https://dealroom.co/>

Until the end of 2016, among the funded companies, 88 had already earned further private investments that amount to **€480.7** million. This is a considerable increase in comparison to **€162** million of private investments earned after the SME Instrument grant by 31 companies in 2014-2015. Out of the 88 companies, 25 were selected for funding under Phase 1 and 63 under Phase 2. The latter represent 13% of all 480 Phase 2 companies selected before the end of 2016. The average funding per company is **€5.4** million.

After the SME Instrument funding companies raise higher investment rounds (€4.3M) than before (€2.8M)

The comparison of the investment pattern before and after the grant shows that companies raised higher rounds after the SME Instrument funding, on average **€4.3** million compared with **€2.8** million before the grant (see Figure 29).

The SME Instrument speeds-up time-to-investment:

In addition, companies got new investments much faster than before obtaining support from the SME Instrument. On average companies needed 32 months to obtain the next round of investments before the grant and only 9 months after. Hence the SME Instrument speeds-up the time to investment 3.5 times.

Before obtaining SME Instrument funding, companies needed on average 32 months to get next investment compared to only 9 months after

Figure 29 Average amount of investment and time-to-invest pre and post SME Instrument

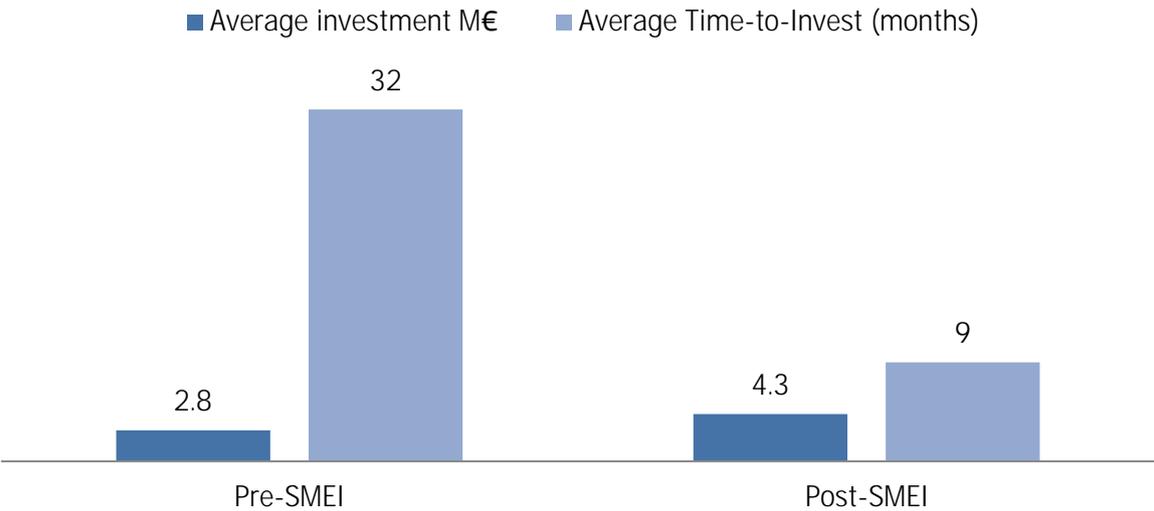


Table 3 Top 10 SMEs attracting the most private investment after the SME Instrument funding

| Company Name | Country | Industry | Investment after SMEI funding (M€) |
|-----------------------|----------------|----------------------|------------------------------------|
| Kiosked | Finland | Marketing | 42 |
| Skeleton Technologies | Estonia | Energy | 42 |
| AlphaSense | Finland | Fintech, Analytics | 30 |
| Swap.com | Finland | Directory, Fashion | 23 |
| PragmatIC | United Kingdom | IoT Semiconductors | 22 |
| Qnergy | Israel | Cleantech | 18 |
| TactoTek | Finland | Home | 18 |
| Nyxoah | Belgium | Medical / Healthcare | 18 |
| Lingvist | Estonia | Education | 15 |
| Sol Voltaics | Sweden | Energy | 13 |

One of the significant indicators to measure the programme's performance is the leverage effect – namely the amount of private investment leveraged per each €1 of funding invested in the companies. Until the end of 2016, a total of €454 million was paid to the companies from the SME Instrument budget²² while a total of €480.7 million was invested from private sources. Therefore only 3 years after the start of the SME Instrument programme, each €1 invested by the EU generated €1.05 of private investment. This amount is prompt to be higher in the years to come as the leverage effect will reveal its full potential only after several years.

SME Instrument has a potential for high leverage effect: Only 3 years after the start of SME Instrument, each 1€ invested generated already €1 of private investment

The high and potentially increasing leverage effect and a faster time to investment confirm that the SME Instrument plays a positive role in helping the companies attract further investors. This is confirmed by the companies themselves who testify the importance of SME Instrument in accelerating their growth and attracting new clients and investments (see below the story of Skeleton technologies and Alpha Sense)

²² The actual payments to the SME Instrument companies amount to €454 million, whereas the total EC contribution indicated in the grant agreements amounts to €882 million committed up until the end of 2016.

<http://www.skeletontech.com>



Taavi Madiberk, CEO

Skeleton technologies scales-up and builds a new factory

Skeleton technologies has created a battery that holds 100 times more energy than ordinary and survives 1 million charge cycles. The battery is made of graphene and can be used in hybrid trucks and cars, wind turbines, power grids, airships and even satellites. The SME Instrument funding helped the company scale up and build the biggest ultracapacitor factory in Europe. The company also attracted significant private investment including an investment loan of €15 million with the European Investment Bank. Skeleton Technologies was included in the 2017 Global Cleantech 100 list.

"The Horizon 2020 project has been instrumental in developing large volume production technologies of Skeleton's proprietary Curved Graphene material, which lies at the heart of ultracapacitor performance. The technological and competitive impact of these technologies is amplified by the opening of the new high-volume production facility in Großbröhrsdorf, Germany, giving us the capability to produce up to 4 million ultracapacitors per year."

3.4.2. IPOs and acquisitions

In equity based investment, acquisition and IPOs are possible exits for investors. The SME Instrument is equity free investment, but nonetheless, IPOs and acquisitions are closely monitored as a proxy for growth in funded companies.

Stock exchanges are exclusive clubs - their reputation rests on the companies they trade. As such, the stock exchange won't allow just any company to be traded on its exchange. Only companies with a solid history and top-notch management are considered. Therefore, being listed on a stock exchange is more than an injection of cash in the company – it's a quality stamp. As main markets on major stock exchanges are reserved for more established companies, there are other markets targeted towards small and growing companies, for example Nasdaq's First North Europe²³. Using a less extensive rulebook than the main market, First North provides companies more room to focus on their business and development while still taking advantage of being a listed company. Unlike on the regulated main market, every company on First North has a Certified Adviser to ensure that companies comply with all requirements and rules. Many large and established companies begin

²³ http://www.nasdaqomxnordic.com/about_us/firstnorth

their journey on First North, creating growth and gaining experience and move on to a regulated main market.

Two SME Instrument-funded companies had their Initial Public Offerings (IPOs) on Nasdaq's First North after receiving the SME Instrument funding. Both IPOs are Swedish companies: Immunovia and Svenska Aerogel (see Table 4). This result is recorded only 3 years after the start of the SME Instrument programme and IPOs are expected to multiply in the years to come. As a matter of comparison, according to Crunchbase²⁴, Germany's most active and leading seed stage investor - High Tech Gründerfond - has invested in 363 companies and exited so far with 2 IPOs.



| | |
|---------|------------|
| Sector | Cleantech |
| Phase 2 | €1,004,576 |
| Sweden | |

<http://www.aerogel.se>



Successful IPO of Svenska Aerogel

Aerogels are nano-materials that are considered the best insulation materials in the world but they are very costly to produce. Svenska Aerogel has developed a new nano-material close to aerogels called Quartzene® that is 70-90% cheaper to produce and can greatly benefit our climate with global energy savings and reduction of CO2 emissions.

Anders Lundström, CEO

"Being the recipient of this prestigious grant gives us a valuable recognition that has played a major role in our IPO. Above all, the SME Instrument Phase 2 project contributes to strengthening our credibility with investors and customers. To run a number of customer-related projects in order to establish the proper full scale production has been truly valuable and we are ready to meet the increased demand. We ended 2015 with a successful listing on the Nasdaq First North after a strong effort by the team, and with gratitude and respect to the support from the European Commission."

Six companies funded by the SME Instrument have been acquired. The acquisitions took place in Denmark, Germany, France and the UK. Acquisition does not necessarily mean that the SME ceases to exist. For the French company Payplug it was in fact an important step in their development. The acquirer, Natixis a French banking group, invested €7 million in equity in Payplug and became a majority shareholder. Payplug remains an independent and autonomous company with no human resources or accounting integration. There were no changes regarding the innovation plan and IP and licences stays under Payplug. The acquirer Natixis is fully committed to accelerating the development of Payplug and introduction of their on-line payment solution on the international market.

²⁴ <https://www.crunchbase.com/organization/high-tech-gruenderfonds#/entity>

Table 4 IPOs and acquisitions in the SME Instrument portfolio

| Company name | Country | Industry | Exit type | Stock Exchange/Acquirer |
|---------------------|---------|---------------------|-------------|-------------------------------|
| Svenska aerogel | Sweden | Cleantech | IPO | Nasdaq First North, Stockholm |
| Immunovia | Sweden | Medical/Healthcare | IPO | Nasdaq First North, Stockholm |
| Sividon Diagnostics | Germany | Medical/ Healthcare | acquisition | Myriad, CH |
| Ubeeqo / Carbox | France | Transportation | acquisition | Europcar, FR |
| Amminex | Denmark | Transportation | acquisition | Faurecia, FR |
| PayPlug | France | Fintech | acquisition | Natixis, FR |
| Multiposting | France | Back office | acquisition | SAP |
| Fianium | UK | Medical/Healthcare | acquisition | NKT Photonics |

3.4.3. Origins and destinations of investments

Investors prefer to invest locally. The majority of investments into the funded companies came from Western and Northern Europe (78%) and they were injected essentially in the same two regions. The highest total amount of investments comes from Western Europe. But Northern Europe received the highest investments, as Northern investors (2nd best) invest almost exclusively in their home region (see Table 5).

The investors prefer to invest locally. The majority of investments came from Western Europe

Table 5 SME Instrument private investments: matrix of investment sources and destinations

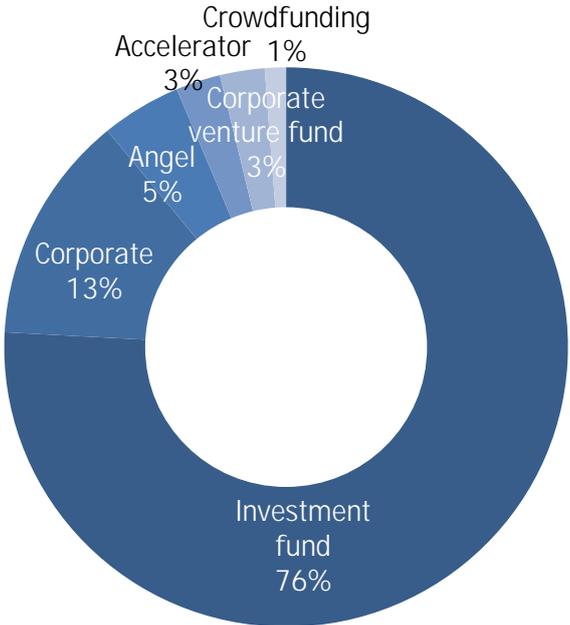
| To↓ | From→ | | | | Total |
|-----------------|----------|---------|----------|----------------|-------|
| | Northern | Western | Southern | Eastern Europe | |
| Northern Europe | 157 | 42 | 0 | 0 | 199 |
| Western Europe | 0 | 137 | 0 | 12 | 149 |
| Southern Europe | 0 | 8 | 37 | 0 | 45 |
| Eastern Europe | 6 | 25 | 29 | 28 | 88 |
| Total | 163 | 212 | 66 | 40 | 481 |

The investments into SME Instrument-funded companies came mainly from professional Investment funds (76%) and corporations investing either directly through their balance sheet (Corporate – 13%) or through a separate activity created specifically for venture capital investment (Corporate Venture fund – 3%). Angel funding represents 5% of all private investments into SME Instrument companies (see Figure 30).

Crowdfunding accounts for only 1 % of all investments into the SME Instrument-funded companies. This is not surprising given that only around 5% of companies (Phase 1) search further funding through crowdfunding²⁵. Only 13 SME Instrument companies have successfully finalised their crowdfunding campaigns.

The most popular crowdfunding platforms are: CrowdCube, Seedrs, Companisto, Green Rocket. To the best of our knowledge, the most successful crowdfunding campaign was carried out by Hybrid Air Vehicles Limited and facilitated by CrowdCube. The company collected €2.6 million in total.

Figure 30 Type of Investors supporting SME Instrument companies (% of total investments)



The following Table 6 presents top investors in companies selected under the SME Instrument. The top 3 investors are the Swedish Industrifonden that has invested €50 million in the SME Instrument-funded companies, Finnish Lifeline Ventures Oy – €15 million and Swedish Energy Agency €12 million.

²⁵ According to Phase 1 final reports

Table 6 Top Investors into SME Instrument companies

| Investor | Description | Amount invested (M€) |
|-----------------------------------|--|----------------------|
| Industrifonden (SE) | <p>Founded in 1979. It is a Nordic evergreen venture capital firm with \$500 million in assets, focusing on technology and life science. Up to 2014 it has provided 1,000 companies with more than SEK 15 billion (€1.6 billion).</p> <p>Verticals: IT, Telecom, Internet/Media, Electronics, Life Sciences, Industry, Energy and Environmental Technology (Cleantech).</p> <p>Type of investment: Seed, Early Stage Venture and Later Stage Venture Investments.</p> | 50 |
| Lifeline Ventures Oy (FI) | <p>Founded in 2009. It is a venture capital firm. The firm targets investments between €0.5 million and €1 million.</p> <p>Verticals: Games, Social Games, Mobile</p> <p>Type of investment: Seed, Early Stage Venture.</p> | 15 |
| Swedish Energy Agency (SE) | <p>Founded in 1998. It is a government agency for national energy policy issues. In 2017 decided to provide SEK 54 million to contribute to carbon-dioxide-free steel industry in Sweden.</p> <p>Verticals: Renewable Energy.</p> <p>Type of investment: Cleantech companies in Sweden through bilateral programmes in several countries.</p> | 12 |
| Imperial Innovations Limited (UK) | <p>Founded in 1986. Since 2006, Imperial Innovations has raised over £300 million to invest in early-stage technology businesses.</p> <p>Verticals: Therapeutics, Medtech & Diagnostics, Engineering & Materials and ICT & Digital</p> <p>Type of investment: Seed, Series A.</p> | 9 |
| Caixa Capital Risc (ES) | <p>Founded in 2004. It is an institutional investor that provides equity (37 companies in the portfolio) and convertible loans (78 companies) to innovative companies in their early stages. It manages a capital of €154 million and invests mainly in Spanish companies.</p> <p>Verticals: Healthcare, Industrial Technology, Biotechnology, Software, E-Commerce, Cleantech.</p> <p>Type of investment: Invest in the Seed Phase and support SMEs during the Series A and B rounds.</p> | 6.5 |
| SmartCap (EE) | <p>It is a state-owned investment company supporting the Estonian economy development. Total assets under management are €33 million. The firm invests along with independent co-investors on a 50-50% basis and often takes the role of the lead investor.</p> <p>Verticals: Software, Video, Analytics</p> <p>Type of investment: Seed and Early Stage Venture Investments.</p> | 6.4 |
| Vertis SGR (IT) | <p>Founded in 2001. It is a private equity and venture capital firm. It seeks to invest between €2 million and €7 million in "Innovative Made in Italy" companies.</p> <p>Verticals: Digital Media, Robotics, Venture Capital, Industrial Automation</p> <p>Type of investment: Seed, Early stage and Growth Capital Investments.</p> | 6 |
| SEED Capital (DK) | <p>Founded in 2005. It invests in approximately 15 new promising growth companies every year. Besides investment SEED Capital assists portfolio companies with value-generating activities.</p> <p>Verticals: Health Care, Health and Wellness, Software</p> <p>Type of investment: Seed, Early Stage Venture, and Later Stage Venture Investments.</p> | 6 |
| Kernel Capital Partners (IE) | <p>Founded in 1999. It is one of Ireland's largest and most active sources of equity finance for technology companies. To date, it has raised €173 million in venture capital funds and it assisted their portfolio companies to raise over €500 million in equity and debt funding.</p> <p>Verticals: Software and Web; Communications, Telecoms & Networks; Chips, Sensors & Systems; Engineering, Clean Technology, Semiconductors</p> <p>Type of investment: Series A, B and later. Institutional Investment Rounds €1.25M to €5M; Early Stage Investment Rounds €250k to €1.25M, Kick-Start Investment Rounds €250k.</p> | 5 |

| | | |
|----------------------------|---|---|
| High Tech Gründerfond (DE) | Founded in 2005. It invests €600k in the seed stage, with the potential for up to a total of €2 million per portfolio company in follow-on financing. It has about €576 million under management in two funds (€272 million HTGF I, €304 million HTGF II). Verticals: Hardware, Automation, Optical Technologies, Energy, Life Sciences, Materials Sciences, Diagnostics, Healthcare, Chemistry, Telecommunication, Media, Software, e-Commerce, Internet, Engineering, Nanotechnology. Type of Investment: Seed, Early Stage Venture, and Later Stage Venture Investments. | 4 |
| Wayra (ES) | Founded in 2011. It is Telefónica Open Future's start-up accelerator that promotes entrepreneurship and accelerates disruptive startups in Europe and Latin America. It gives its users funding up to \$50k with a place to work, mentors, business partners, access to a global network of talent, and the opportunity to reach millions of Telefónica customers. Verticals: Financial Services, Incubators, Finance, ICT Type of Investment: Seed. | 4 |

3.5. Does the SME Instrument help companies grow?

The real growth of funded companies can be measured in change in turnover and number of staff. This information was collected for the first time in 2016 and only for companies in Phase 2 as the potential link between the funding and growth

15 months after receiving the SME Instrument funding, companies recording increase in turnover grow on average by 250%

of the company is easier to establish given the larger funding. The 131 first companies to enter their intermediate or final report, between one and maximum two years after the start of the project, provided information about the effective evolution of their turnover and number of employees. This information is still very preliminary, but it gives an idea of the programme's full impact, which will be fully revealed in the coming years.

Out of these 131 Phase 2 companies, 83 have recorded increase in turnover, 45 have reported decrease and 2 registered no changes since the start of the project. Among those reporting gains, the average increase was 250%, over a period of 15 months. This is comparable with the results obtained by the companies listed in the Deloitte Technology Fast 500²⁶ Europe, the Middle East, and Africa (EMEA). The average growth rate for the 2016 edition of the ranking was 967% over 3 years. Growth for individual companies on the list ranged from 212% to 28,126%.

In terms of employment, 88 companies recorded increase, 26 decrease and 17 didn't change. Among those reporting increase, the average change was of 122%.

15 months after receiving the SME Instrument funding companies recording increase in employment grow on average by 122%

²⁶ <https://www2.deloitte.com/global/en/pages/technology-media-and-telecommunications/topics/technology-fast-500.html>

One of the potential gazelles (high-growth companies that increases its revenues by at least 20% annually for four years or more, starting from a revenue base of at least \$1 million²⁷) among SME

Next Gazelle: Alphasense – 690 % increase in turnover over a period of 18 months

Instrument-funded companies is Alphasense. 18 months after starting the project, this Finnish company's turnover increased by 690% and it obtained one of the largest investments recorded after the receipt of SME Instrument funding - amounting to €30 million.



| | |
|---------|-------------------|
| Sector | Fintech/Analytics |
| Phase 2 | €1,816,853 |
| Finland | |

<http://www.alpha-sense.com>

AlphaSense secures major investment



Jack Kokko, CEO&Founder

AlphaSense is a revolutionary, award-winning search engine that helps financial analysts find information across millions of documents in a few clicks with unparalleled speed and accuracy. AlphaSense is mostly designed for financial analysts and research professionals to navigate documents, search news and other sources for critical data, set alerts and analyse filings. **Alphasense raised €30 million private investment** after receiving the Phase 2 grant. It also already recorded a very high growth in turnover.

"The financial support from the SME instrument program allowed us to speed up our growth, attracting new clients and investing in our technology. This has helped us accelerate our adoption and grow into new market segments. We are very thankful for this support."

²⁷ <http://www.investopedia.com/terms/g/gazellecompany.asp>

Another source of information about next gazelles in the SME Instrument portfolio are rankings of fast growing enterprises like the already mentioned Deloitte Fast Technology 500 EMEA ranking²⁸ and the Financial Times 1000 Europe's Fastest Growing Companies²⁹. These rankings spot the fastest growing technology companies in different geographical areas.

In Deloitte's 2016 ranking, companies were selected based on the percentage of fiscal-year revenue growth from 2012 to 2015. 9 SME Instrument companies appear in this 2016 edition, 4 more than in 2015 edition. Only one company listed in 2015 persisted in ranking in 2016 – ARCAM. The highest rated company is Rimac Automobili from Croatia, a supercar manufacturer that was placed on 151st position in the Deloitte ranking (see Table 7).

Table 7 SME Instrument-funded companies in the Deloitte Technology Fast 500 EMEA 2016

| Deloitte rank | SME Name | Country | Sector | Proposal Call Id |
|---------------|--------------------------------|-------------|----------------------|------------------|
| 151 | Rimac Automobili | Croatia | Cleantech, transport | Phase 1 |
| 160 | Climatewell | Sweden | Cleantech | Phase 1 |
| 162 | Hövding Sverige | Sweden | Sports | Phase 2 |
| 187 | HappyOrNot | Finland | Software | Phase 2 |
| 253 | eVision Industry Software | Netherlands | Security | Phase 2 |
| 281 | Adservio | France | e-Health | Phase 1 |
| 327 | Done İletişim Bilgi Sistemleri | Turkey | Communication | Phase 1 |
| 375 | Arcam | Sweden | Hardware | Phase 2 |
| 461 | Eblana Photonics | Ireland | Communication | Phase 1 |

The Financial Times' 2016 ranking lists the 1,000 companies in Europe that have achieved the highest percentage growth in revenues between 2012 and 2015. The methodological details are slightly different than Deloitte's ranking therefore the final list is also different. 5 SME Instrument companies were listed in the Financial Times ranking. The highest rated, HappyOrNot from Finland registered a 580% increase in turnover over 2012-2015 and was ranked on 212nd position (see Table 8). Moreover HappyOrNot and Adservio are listed in both, Deloitte and Financial Times rankings.

²⁸ <https://www2.deloitte.com/global/en/pages/technology-media-and-telecommunications/articles/technology-fast-500-emea.html>

²⁹ <https://ig.ft.com/ft-1000/>

Table 8 SME Instrument companies in the Financial Times 1000 Europe's Fastest Growing Companies 2016

| FT Ranking | SME Name | Country | Sector | Revenue growth 2012-15 | Proposal Call Id |
|------------|--------------|---------|------------------|------------------------|--------------------|
| 212 | HappyOrNot | Finland | Software | 580% | Phase 2 |
| 288 | Worldsensing | Spain | Internetofthings | 428% | Phase 1 Phase 2 |
| 307 | Adservio | France | e-Health | 402% | Phase 1 |
| 468 | Nox Medical | Iceland | Health | 232% | Phase 1 Phase 2 |
| 517 | Mosaicoon | Italy | Media | 208% | Phase 2 |



Sector Medical / healthcare
Phase 1,2 €2,000,000
Iceland

<http://www.noxmedical.com>

Nox medical listed on the Financial Times fast 1000



In Europe sleep-disorder-breathing affects 35% of people over 40 years old. Nox Medical spots sleeping disorders in patients including children, with a new digitalised sleep diagnostics technology that uses an updated set of biological indicators and protocols. The technology will offer a cheap, accurate, and simple screening- and follow up tool for doctors using wireless smart sensors connected to smart phones, based on a pay-per-use business model. In addition to being one of the fastest growing companies in Europe, according to Financial Times, it was awarded the "Entrepreneur of the Year" by Iceland's premium business press, Viðskiptablaðið. In addition Nox Medical had the honour of receiving the Icelandic Presidential Export Award in 2016.

Petur Halldorsson, CEO

"Receiving the H2020 SME Phase 1 and subsequently Phase 2 grants was an important piece in shaping the future of Nox Medical. The grants allowed the company to run a team of highly specialized engineers and scientists to bring the latest discoveries in sleep science to the market. This has allowed Nox Medical to both take the lead in the sleep diagnostics space and participate in pushing sleep research and revolutionizing how sleep disorders are diagnosed. The ground laid by the two grants has already made an impact on our sales and market presence. Not only will it be the foundation of how we build the future of the company, more importantly it will lay the foundation for the future of sleep diagnostics in the medical field."

4. Where are the best performing SME Instrument-funded companies?

4.1. Sectorial approach

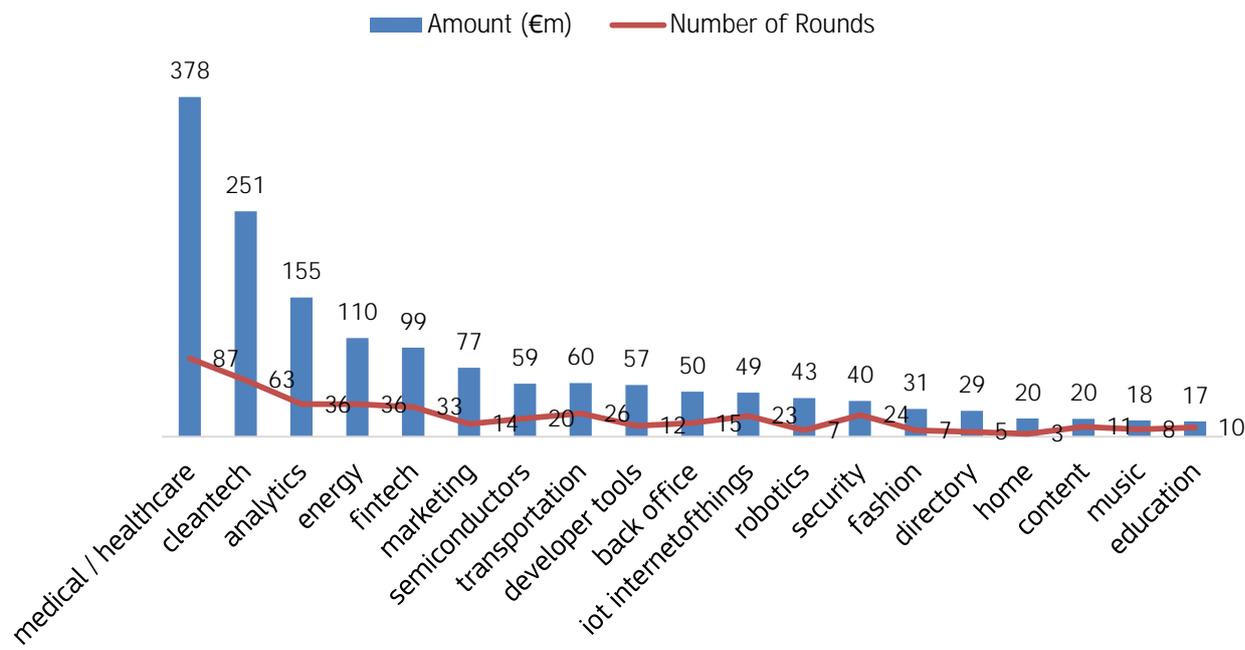
The SME Instrument is supporting market creating SMEs, often working in niche areas. The aim of this chapter is to analyse which industries and revenue models within the SME Instrument portfolio are the most prominent and where the biggest assets of the programme are. In this chapter, the analysis concentrates on total private investments acquired by the companies (before and after the grant) and growth projections up to three years after the end of SME Instrument project.

4.1.1. Industries and revenue models in terms of investments received

The industries within the SME Instrument portfolio that raised the highest amount of private investment, both before and after the SME Instrument grant, are Medical/healthcare and Cleantech. This is not surprising given that these are the most represented industries within the SME Instrument portfolio. Figure 31 shows the amount of private investment gathered and the number of rounds. Large differences between these two parameters indicate that average investment round is rather small in a given industry. The industries with the highest average investment are Robotics and Home³⁰.

Healthcare and cleantech are the industries that received the majority of private funding. Home and robotics had the biggest financing rounds

Figure 31 Total private investments (before and after the grant) into SME Instrument-funded companies by industry

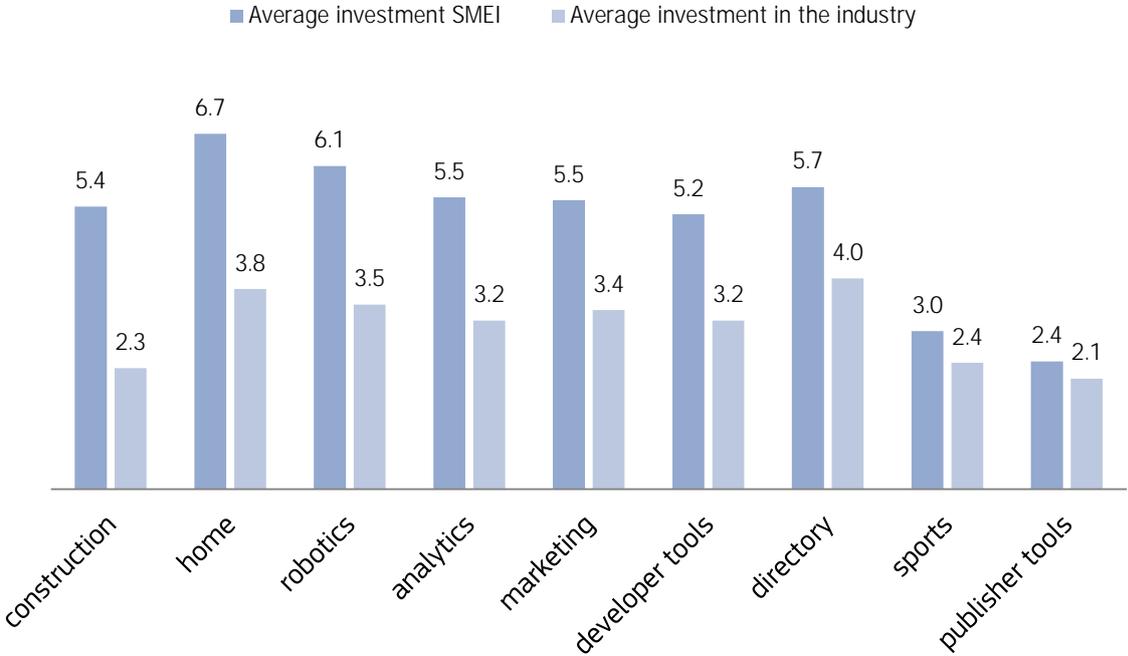


³⁰ For the definitions of industries please check chapter 2.3

To benchmark the performance of SME Instrument-funded companies in terms of investment gathered a comparison between the average investment received by SME Instrument-funded companies and the average of the industry as recorded by Dealroom was carried out. Figure 32 shows the top performing industries – industry sectors where funded companies raised higher investments rounds than the average. SME Instrument-funded companies in Construction, Home, Robotics, Analytics, Marketing, Developer tools, Directory, Sports and Publisher tools outperform their industry average.

SMEs in Construction, Home, Robotics, Analytics, Marketing, Developer tools, Directory, Sports and Publisher tools outperform their industry average in terms of investment

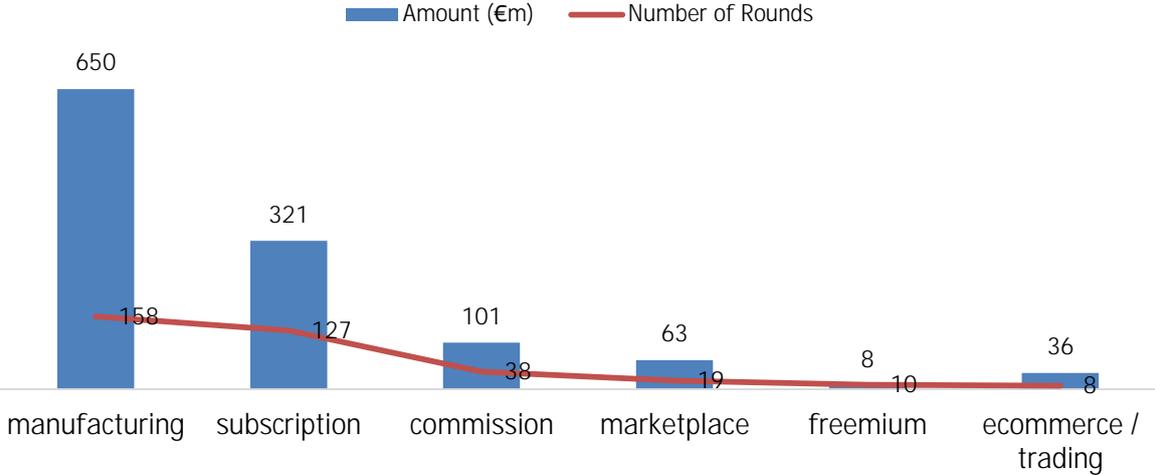
Figure 32 Top industries where SME Instrument-funded companies perform better in terms of investments than the industry average (€M)



Revenue models that gathered the highest amounts of private investments are Manufacturing and Subscription, which are also the most represented revenue models in the SME Instrument portfolio. Figure 33 shows the amount of private investment gathered and the number of rounds per revenue model. The revenue models with the highest average investment are Ecommerce/trading and Manufacturing.

Manufacturing and subscription are business models receiving the majority of private investments, while Ecommerce/trading has the highest average investment

Figure 33 Total private investments into SME Instrument companies by revenue model

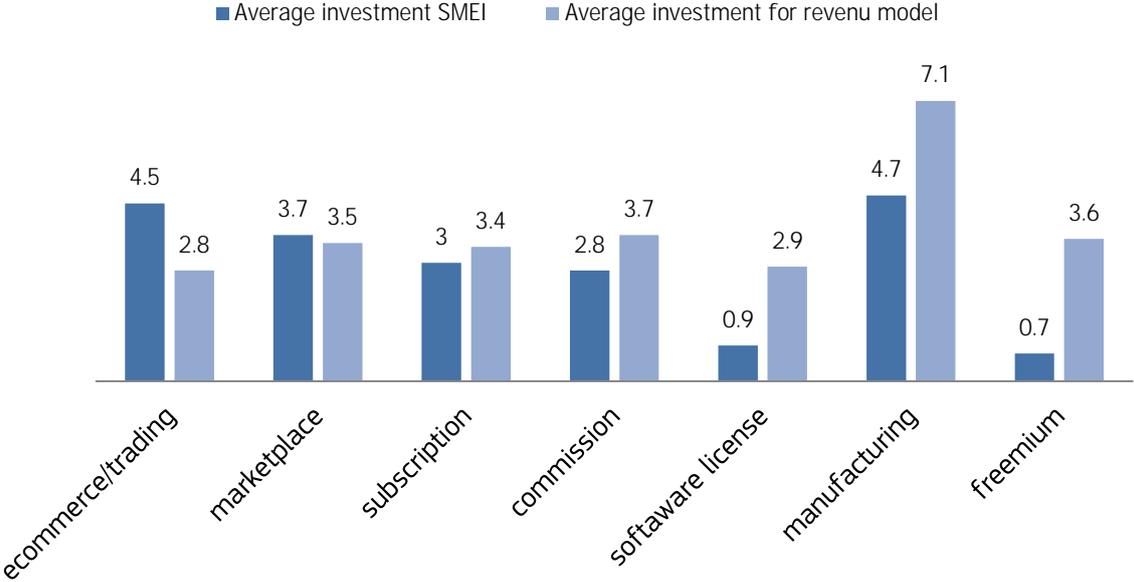


The comparison with the average investment of the revenue model as recorded by Dealroom shows that the SME instrument-funded companies using Ecommerce/trading and

Marketplace and ecommerce SMEs get more funding than average with these revenue models

Marketplace attract higher investment than the average in their revenue model (see Figure 34). Investments in SME Instrument-funded companies using a Subscription model are similar as the average for this revenue model. For all the remaining revenue models, SME Instrument-funded companies received lower average investment then the rest of the population.

Figure 34 Average investment per revenue model - SME Instrument-funded companies compared with average company (€M)

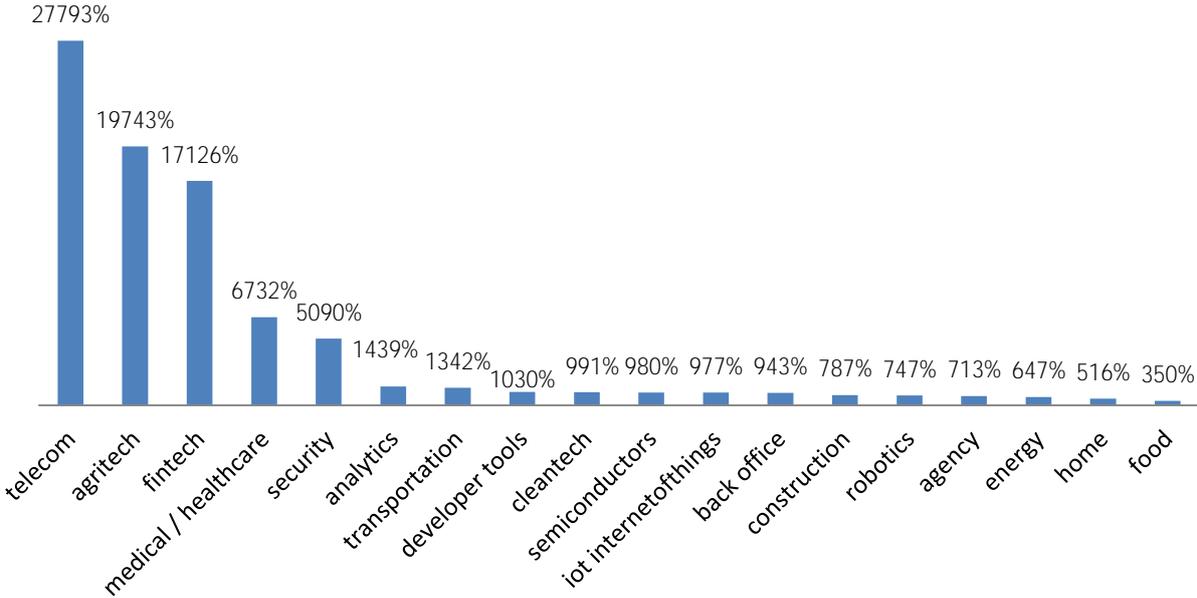


4.1.2. Industries in terms of growth projections

At the end of Phase 1 and at the moment of periodic and final reporting in Phase 2, companies are asked to provide their growth projections in terms of turnover 1, 2, 3 years after the market launch of the business idea. By the end of 2016, 1,399 companies in Phase 1 and 140 in Phase 2 could provide their growth projections. As expected for highly innovative companies, projections suggest high growth rates. Indeed the median is 379% growth over the three years for companies in Phase 1 and 815% for companies in Phase 2. For a matter of comparison, in the ranking of Deloitte 2016 Technology Fast 500 Europe the number one company registered 45,080% of growth and the last in the ranking 211%. In total, SMEs that provided replies are expected to generate an aggregated turnover of €21.4 billion. This represents an average turnover of €13.8 million per company.

The following graph shows the average growth projection by industry for Phase 1 companies³¹. Telecom has by far the highest average turnover growth projection of 27,793%, followed by agritech (19,743%), fintech (17,126%) and medical/healthcare. These four sectors are the most promising in terms of growth projections (see Figure 35).

Figure 35 Phase 1 - Average turnover growth projections over the next 3 years (only statistically significant industries)



³¹ The number of companies in Phase 2 providing projections was insufficient to allow statistically significant analysis by industry.

4.2. Geographical approach

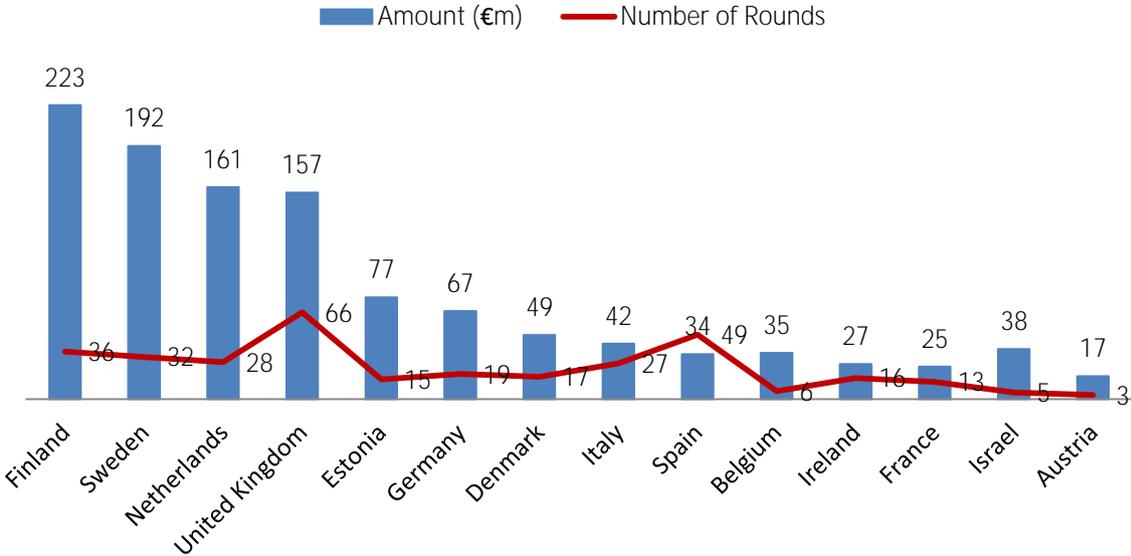
This chapter aims to benchmark the performance of the SME Instrument by country in terms of private investments attracted so far and growth projections up to three years after the end of the SME Instrument project.

4.2.1. Country distribution of investments received by SME Instrument companies

The analysis shows that SME Instrument companies from Finland, Sweden, Netherlands and United Kingdom were the most successful in attracting private investment. This is strongly correlated with the amount of venture capital available in each country. As shown by [Start-up hubs](#) London, Stockholm, Helsinki and Amsterdam are among top 10 cities in terms of private investment available for innovative companies. Figure 36 shows the total amount of private investment gathered by SME Instrument-funded companies from each country, before and after the grant, and the number of rounds. Countries with the highest average investment are Israel and the Netherlands.

Finland and Sweden are the most funded, while Israel and the Netherlands have the highest average investment rounds

Figure 36 Total private investments (before and after the grant) into SME Instrument-funded companies by country (only statistically significant country)

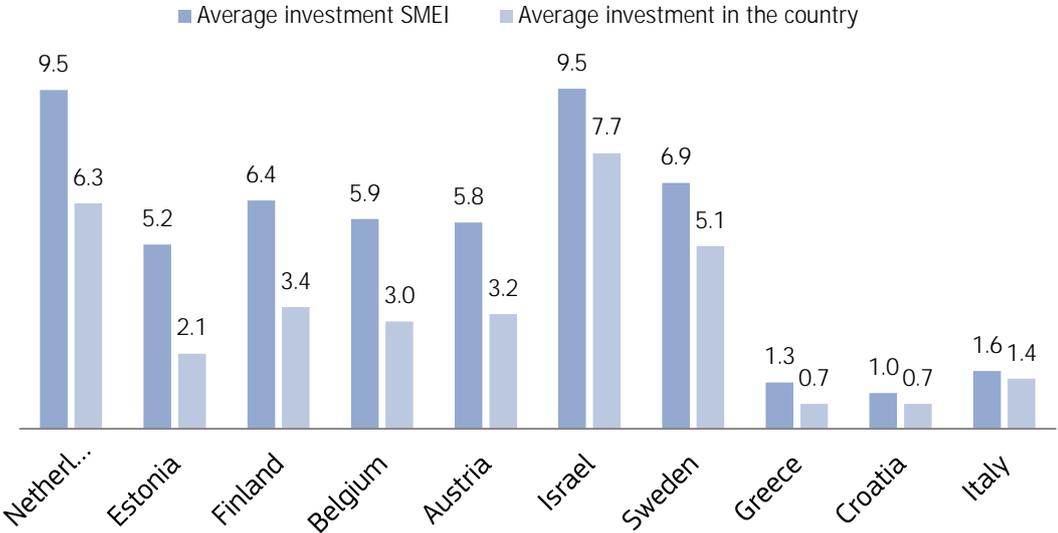


The comparison between the average investments gathered by companies funded under the SME Instrument and their country average (Dealroom data) show that in certain

SME Instrument attracts particularly well performing SMEs in the Netherlands, Estonia and Finland where they receive on average higher funding than their compatriots

countries SME Instrument-funded companies exceed what is usually raised in terms of private investment by their compatriots. This is the case especially in the Netherlands, Estonia, Finland, Belgium, Austria, Israel, Sweden, Greece, Croatia and Italy (see Figure 37). It means that in these countries the SME Instrument attracts particularly well performing SMEs.

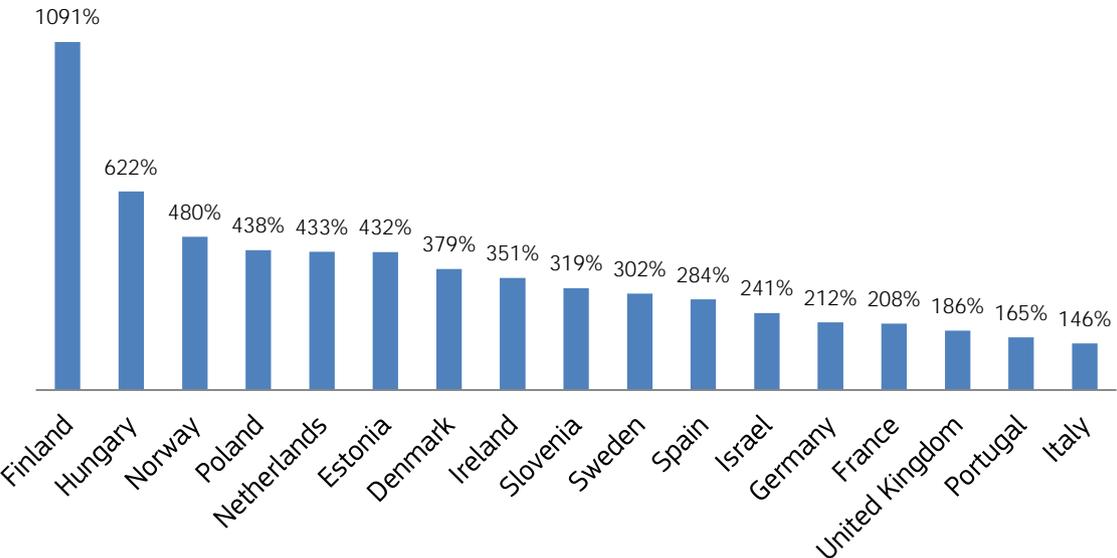
Figure 37 Top 10 countries where SME Instrument-funded companies perform better in terms of investment than the country average (€M)



4.2.2. Growth projections by country

The growth projections of the 1,399 companies in Phase 1 that provided their final reports allow for an analysis by country (for more on growth projections see chapter 4.1.2). Figure 38 shows that Finnish SMEs have indicated by far the highest growth potential of more than 1,091%. Finland is followed by Hungary, Norway, Poland, Netherlands and Estonia. SMEs from these countries have reported a higher estimated growth than the SME Instrument median of 379%.

Figure 38 Phase 1 - Median turnover growth projections over the next 3 years (only statistically significant country)



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