



IMPACT ASSESSMENT OF ODINE PROGRAMME

BY IDC



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Executive summary

Based on IDC's independent impact assessment, ODINE's incubation programme achieved its main objective to attract and fund a group of innovative digital companies with original business ideas about Open Data and accelerate their time to market and chances of success. ODINE's 57 funded companies, of which 31 are startups born with the programme, represent a wide variety of value propositions based on either software solutions, or software solutions with some hardware components (IoT solutions), or web-based services. They contribute to the development of an Open Data ecosystem in Europe covering all segments of the data value chain, with a stronger presence in the more innovative components. Overall, we can see a common thread running across many of these companies aiming for what ODINE calls the triple bottom line, that is achieving economic, social and environmental benefits.

The assessment was carried out in March-April 2017 and was based on data collection through an independent survey¹ of the 57 funded companies and 10 non-funded companies, the information published by the companies, ODINE's databases and documents repositories. IDC developed a forecast model estimating potential revenues, jobs created and the number of customers of these companies to 2020, under a main and a counterfactual scenario. The results were compared with the impact assessment of the Fiware accelerator programme, which funded over 1000 startups and SMEs, carried out by IDC in 2014-16.

The key research questions examined by the assessment were the following.

What impact has ODINE had on company growth?

ODINE's programme was well appreciated by the participants, who gave it high scores in terms of value added, with the highest benefits concerning **accelerating time to market, improving the business idea, and improving the team skills**.

Based on IDC's forecast impact model of the 57 funded companies, ODINE's impact on their growth perspectives was relevant, resulting in an estimated 110 €M of cumulative revenues in the period 2016-2020, plus 784 jobs created. Average revenues per company by 2020 should be around 1 €M, corresponding to 55,000 € of revenues per employee, sufficient for sustainability. This means that per our model

¹ The survey was sent to all 57 companies with multiple follow ups and collected 42 respondents (32 via the online questionnaire and 10 via telephone interview). Data gaps were filled using the ODINE questionnaire survey

estimates, each euro invested by the EC in the ODINE project will have generated up to 14 euros in cumulative revenues by 2020, which is a good multiplier.

Participant companies show growth rates of revenues, employment and users aligned with main accelerators and better than the average performance of the 1000 companies funded by the FIWARE accelerator program. They also show a good capability to collect additional funding, even though many are still in the early phase of development.

The counterfactual scenario shows that due to longer time to market, greater difficulty in getting funding, and higher failure rates, without ODINE only 34 companies would have survived to 2020, generating half as much cumulative revenues and 228 less jobs than in the main scenario.

How successful were the business plans of ODINE's participants?

The analysis of the business plans of 40 funded companies and 10 non-funded ones shows a good level of achievement of the main objectives, particularly the startups of the group. The influence of ODINE's mentors in helping several companies in redirecting and improving their business idea or business plan is clear. The companies with a high level of achievement of their business plans are also more appreciative of ODINE's support in accelerating their time to market and more likely to collect external funding from other sources.

What is the benefit of open data to participant businesses?

ODINE succeeded in inspiring and promoting a range of new business ideas highlighting the value added of Open Data in the data market. Each of the 57 startups and SMEs leverages 2 or more types of Open Data, with a strong concentration of interest in geospatial/ mapping and environmental data. We found that startups use a wider variety of Open Data than young or mature companies in the group, playing the role of ***experimenters***, combining different typologies of Open Data for their solutions. More than half of the group have a strong vertical focus aiming for the emerging needs of new and traditional sectors. Another priority of ODINE companies is the emerging sustainable or low carbon economy, with several companies focused on energy saving, environmental monitoring, smart mobility. There is also a positive correlation between the level or maturity at country level of the Open Data market (measured by a Capgemini study) and the number of ODINE successful applicants by country points out that a rich open data environment provides favorable conditions for innovators in this field. This means that proactive policies improving the usability and availability of open data sets are likely to stimulate private initiatives for the exploitation of data in a positive virtuous cycle.

1. Introduction

1.1. Main goals and approach

This is the final report of IDC's independent impact assessment of the work delivered by ODINE, the incubation programme for start-ups, Small and Medium Enterprises (SMEs) working with or in the field of Open Data. This assessment is aimed at analysing and extrapolating the impacts of ODINE's activity by collecting evidence about the progress and perspectives of the 57 SMEs funded and fast-tracked by ODINE.

The focus of the impact assessment – the key research question – is whether the €7.8 Million invested by the EC in ODINE were well spent, meaning whether they led to a substantial acceleration of growth by the SMEs selected by the incubator. This evaluation would not be complete without a counterfactual scenario outlining the alternative impacts if the investment had not been made. This alternative scenario was developed based on desk research and the evidence collected from 10 unsuccessful applicants to the project's calls.

The report provides the answers to 3 main research sub-questions in which the overall evaluation was articulated, as follows:

What impact has ODINE had on company growth?

This impact was measured through the following KPIs (Key performance indicators) estimated by an economic model projecting actual 2017 data for all the 57 funded companies:

- Current and forecast revenues to 2020;
- Current and forecast jobs created to 2020;
- Number and growth of online users/customers to 2020;
- Amount of additional funding collected by private/public sources;

The same indicators were measured for the non-funded SMEs to develop the counterfactual scenario. This allowed to measure the aggregated economic impact of ODINE's investment to 2020 and contrast it with the potential impacts achieved by a counterfactual scenario.

How successful were the business plans of ODINE's participants?

IDC analysed in depth the achievement of the business plans of 40 funded companies² and 10 non-funded ones, through a composite achievement indicator measuring

² 17 companies did not provide sufficient data on their business models.

success in 4 key performance areas: effectiveness of the value proposition, ability to generate revenue flows, to acquire customers, to finance business development by capturing additional funding from other sources beyond ODINE. As the incubator's services were aimed at improving each company's performance under all these aspects, measuring these achievements provides an articulated evaluation of ODINE's value added. This helped to understand the difficulties faced by the 10 non-funded companies and to develop the assumptions for the counterfactual scenario.

What is the benefit of open data to participant businesses?

ODINE's main objective is to stimulate new business ideas as well as the Open Data market, which is not (contrary to widely held beliefs) the same as the Public Sector Information (PSI) market. The use of Open Data in combination with private data can lead to a wide range of potential business opportunities, not necessarily limited to non-profit business models, as shown by the 57 enterprises successfully applying for ODINE's funding. To evaluate ODINE's achievement in this area IDC explored the market positioning of the 57 funded companies, with a focus on:

- The classification of the type of open data they used;
- The analysis of the way in which open datasets were leveraged/ transformed/ processed;
- The classification of the markets targeted and their type of offering;
- The social and environmental benefits expected.

One of ODINE's key objectives was to select and accelerate enterprises able to achieve a "triple bottom line" including economic, social and environmental benefits. This analysis therefore helped to establish whether this objective was achieved. The assessment builds on the most recent research and analyses on Open Data markets, first of all the maturity benchmarks developed by Capgemini Consulting in the study *"Creating Value through Open Data: Study on the Impact of Re-use of Public Data Resources"* for the European Data Portal in 2016.³

1.2. Data sources

This study is based on extensive desk and field research. The evidence collected comes from:

- An ad-hoc online survey based on a structured questionnaire, with closed answers, articulated in 6 sections (Profile, Business performance, Financials, ODINE services, Momentum, Open Data plus a final section only for non-

³https://www.europeandataportal.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf

funded companies)⁴. The survey collected 42 answers (32 online plus 10 completed by phone) in the period April-early May 2017, of which only 40 provided sufficient data for the business model analysis.

- 10 interviews with 10 non-funded companies with the same questionnaire.⁵ The respondents came from the list of 87 unsuccessful applicants provided by the ODINE consortium. IDC reached out via email and telephone to all 87 potential respondents until it completed a small sample of 10 cases differentiated by time of application (cohort) and company age (mixed between start-ups and already existing SMEs).
- ODINE's database of deliverables, data on funded and non-funded companies, partners' interviews and documentation on screening criteria, acceleration activities and so on. The results of the Business model survey conducted in December 2016 (deliverable 6.3) were particularly useful to fill in the gaps of IDC's survey.
- Data and information about the companies sourced from their own websites;
- Data and methodologies from FI-IMPACT, the FP7 CSA (Concertation and Support Action) led by IDC within the FIWARE accelerator programme in 2014-2016. The project monitored, interviewed and analysed the 1024 start-ups and SMEs funded by 11 Accelerator projects, forecasting their economic impacts to 2020. These data serve as useful benchmarks for ODINE's companies results.
- Desk research on public data sources such as Eurostat and other Accelerators reports.

1.3. Structure of the report

The report is structured as follows:

- Executive summary
- Chapter 1 describes the goals and approach of the study;
- Chapter 2 maps the main features of the funded companies;
- Chapter 3 analyses the influence of ODINE's services;
- Chapter 3 answers to the research question on the benefits of open data;
- Chapter 5 answers the research question on the successful achievement of business plans;
- Chapter 6 answers the research question on the economic impacts and the potential consequences of a counterfactual scenario;

⁴ The questionnaire and the survey results are annexed to this report

⁵ There was only one difference: Instead of questions about ODINE services the non-funded companies were asked about their difficulties without ODINE support.

- Chapter 7 draws the final conclusions;
- The Appendix includes the survey data and the questionnaire.

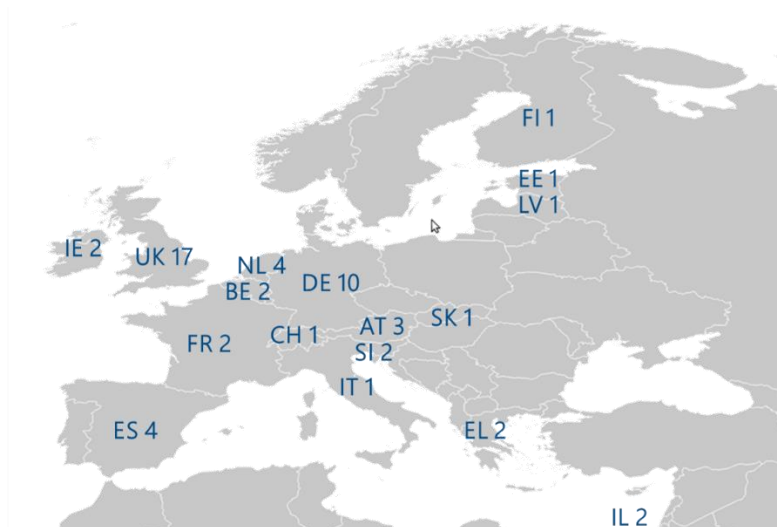
2. Mapping ODINE companies

This chapter analyses the profile and characteristics of the 57 companies ODINE selected for funding out of over 1000 applicants, describing them in terms of geographical location, age, number of employees, type of offering, customers targeted. After checking for correlations between their characteristics and growth dynamics, we have found that the most relevant differentiating factor is their age (companies incorporated less than 36 months before receiving ODINE funding versus companies with more than 36 months of existence) which influences their use and approach to Open Data, as shown in the following paragraphs. The variety of their other features and commercial strategies demonstrates that there is not a single way to success (a silver bullet) for these companies.

2.1. European landscape

ODINE did not select companies based on their geographical location, but on the quality of their business idea. Also, these start-ups and SMEs are digital businesses whose physical location is less relevant than it would be for traditional businesses. Nevertheless, the geographical distribution of these companies is a useful starting point (Figure 1 below).

Figure 1 Geographical distribution of the 57 funded companies



Source: Elaboration on IDC Survey, April 2017 and ODINE Business Model Survey, December 2016.

The UK hosts the largest group of companies (17) followed by Germany (10). Together they represent half of the total. Except for 2 from Israel, the rest of the group is spread around Europe: Netherlands and Spain have 4 each, Austria 3, Belgium, France, Greece, Ireland, Slovenia 2 each. Estonia, Finland, Italy, Latvia, Romania, Switzerland and Slovakia have 1 funded company. A tentative observation could be that small dynamic economies with a strong focus on digital technologies (Estonia, Ireland) are more represented than most of the EU Big 6 (particularly Italy and France, not to mention Poland which is not present at all). But the sample is too small to provide significant correlations at the single country level. The ODINE partners in charge of dissemination were based respectively in UK and Germany, so this was likely a factor in the prevalence of applicants from these countries.

However, it is interesting to investigate whether countries with a strong Open Data market generated more business ideas applying to ODINE. To check this, we compared the national provenance of ODINE companies with the 2016 Open Data Maturity benchmark of EU Member States⁶ developed by Capgemini consulting on behalf of the EC (table 1). Countries have been grouped into clusters regarding their different maturity levels. In fact, the largest group of ODINE companies (34) belong to countries in the **Trend Setters cluster**, characterized by solid open data portals and advanced open data policies, together with a national coordination across domains. Another 6 enterprises come from countries in the **Fast Trackers cluster**, which are in a good position in their open data journey but need to exploit better the benefits of either open data policies or portals. This seems to confirm that advanced Open Data markets provide a favorable environment for innovators with new business ideas, such as ODINE's funded companies.

Table 1 Distribution of ODINE companies by MS and Open Data Maturity Cluster

Open Data Maturity Cluster	Member States	Number of ODINE funded companies
Trend Setters	Austria, Bulgaria, Finland, France, Ireland, the Netherlands, Spain, UK	UK(17), NL(4), ES(4), AT(3), FR(2), IE(2), FI(1); Total=33
Fast Trackers	Estonia, Greece, Slovakia, Romania, Norway, Croatia, Slovenia, , Luxemburg	EL(2), SK(1), SI(2), EE(1), RO(1); Total = 7
Followers	Belgium, Czech Republic, Cyprus, Denmark, Germany, Hungary, Italy, Lithuania, Poland, Portugal, Sweden, Switzerland	BE (2), DE(10), IT(1), CH(1); Total = 14
Beginners	Liechtenstein, Latvia, Malta	LV (1); Total = 1

⁶https://www.europeandataportal.eu/sites/default/files/edp_landscaping_insight_report_n2_2016.pdf

Source: IDC elaboration on Capgemini Consulting⁷

The exception is **Germany**, which generated 10 successful applicants to ODINE but has a low Open Data Maturity, because of the fragmentation and low coordination of the internal open data portals system (managed at the regional/ local level), as well as low usability of Open Data sets. Given the size of the German economy, 10 successful ODINE companies are not so many: the UK is smaller and generated almost twice as many. Perhaps this fact can be read in the opposite way: that the German market has a strong innovation potential which is currently hindered and may be realized faster if the national Open Data policy and activities will catch up with private initiative. A few other countries (Belgium, Italy and Switzerland) in the Followers cluster and 1 in the Beginners cluster (Latvia) host ODINE innovators but they represent a small minority of the group.

2.2. Profile by age

Startups and very young companies are different from established companies, as they typically grow at faster rates and are at higher risk of failure. In terms of age the ODINE 57 companies can be classified in 3 groups:

- **31 are startups** (born in or after 2014);
- **15 are young** (born in 2012 or 2013);
- **11 are mature** (born in or before 2011).

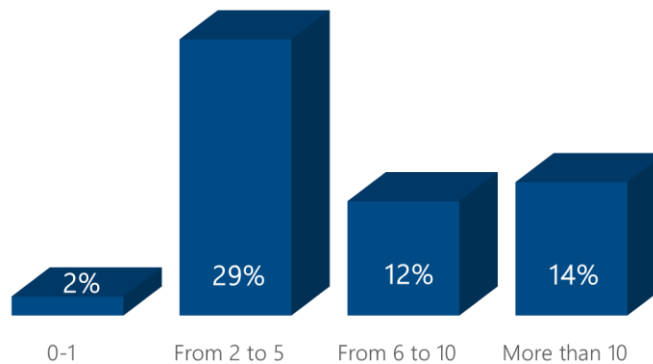
Startups and young companies derive most of their revenues from the business idea funded by ODINE, so the programme economic impact on them is stronger. Mature companies already have revenues, and we considered only those generated by ODINE's business idea for the economic model. Overall though we can see that the role of ODINE was fundamental for most of the sample.

2.3. Profile by number of employees

Young companies and startups typically have a very small number of employees, but all the companies in this group are very small. Among the 57, only 14% have more than 10 employees and only a few have more than 30. Perhaps also the mature companies in the group were looking to find a path to faster growth and applied to ODINE to do so.

⁷https://www.europeandataportal.eu/sites/default/files/edp_landscaping_insight_report_n2_2016.pdf

Figure 2 Percentage of ODINE companies by employment size classes



Source: Elaboration on IDC Survey, April 2017 and ODINE Business Model Survey, December 2016.

2.4. Type of offering

The main differentiation between the ODINE companies, besides age, is the type of offering, which dictates the business development strategy. We define offering as the type of product or service offered on the market which represents the main source of revenues. We found that the 57 companies can be classified in 3 main groups:

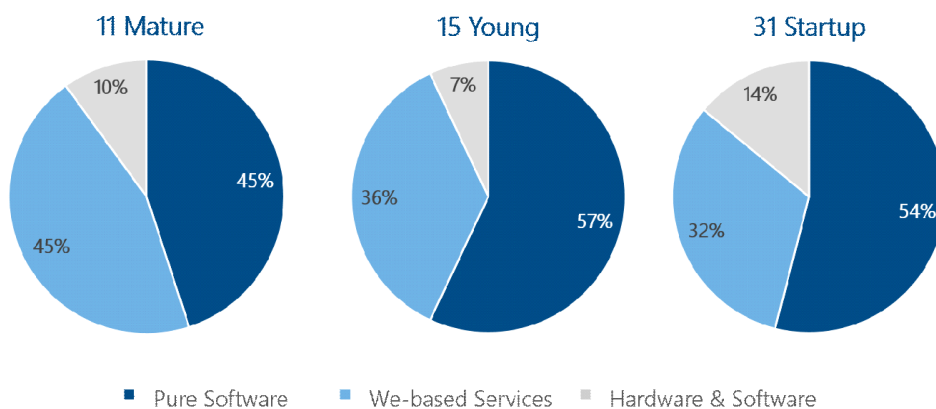
- **Pure software: 29 companies** offer software solutions such as apps and software tools. This is the largest group. For example:
 - **Contagt** is an **app** through which visitors can view a building map, navigate indoors and report issues by sending photos to the building operator.
 - **IPlytics** offers an **online-based market intelligence tool** to analyze technology trends, market developments and a company's competitive position.
- **Hardware and software: 6 companies** provide hardware components embedded with a software solution, most frequently these are Internet of Things (IoT) solutions. Examples are:
 - **Liimtec** developed PocketDefi, a public access defibrillator which is small, affordable and provides a unique user experience by being monitored and serviced through a mobile network.
 - **Green City Solutions** tries to fight the problem of air pollution with a four-meter-high CityTree installation, providing clean and cool air to hot urban cities.
- **Web-based services: 22 companies** use digital technologies to provide a service for businesses or consumers. For example, this can include marketplaces or peer-to-peer online platforms where companies or

consumers can find information, purchase goods, look for specific services, and so on. Examples are:

- o **Aleph** gives the whole world access to the best source of information about oil, gas and mining.
- o **Resc.info** is a service that shares local data with fire departments looking to tailor programmes to residents at risk.

Breaking down the group of companies by age and type of offering (Figure 3) we notice that there are more young and startup companies providing pure software solutions than mature companies, who instead are more likely to offer web-based services. More interesting, there are many more startups providing hardware and software products. Since these are mainly IoT solutions, this may be a function of the increasing attractiveness in time of the IoT market as well as the greater focus of startups on cutting edge innovation.

Figure 3 Differentiation of ODINE companies by Product and Age



Source: Elaboration on IDC Survey, April 2017, and on ODINE data

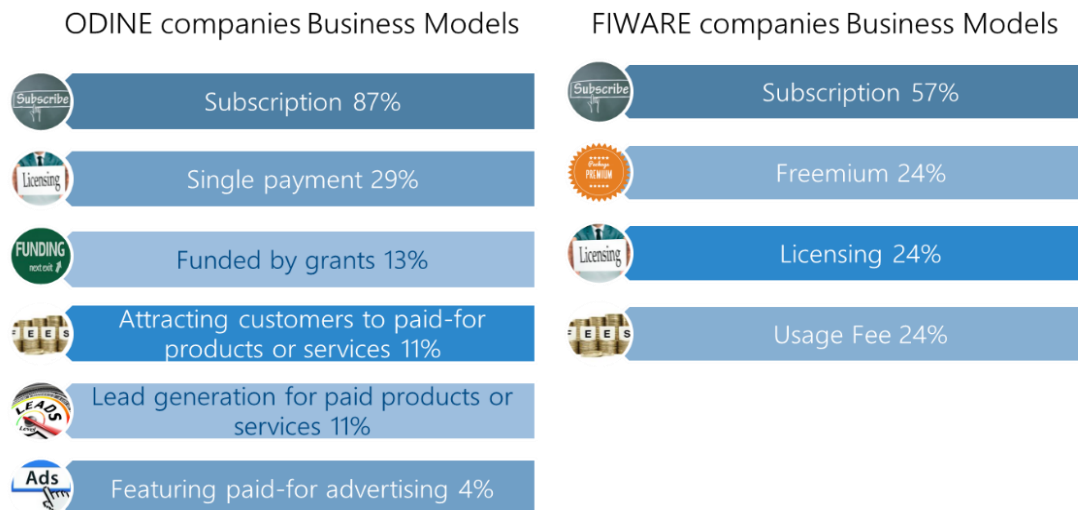
2.5. Commercial strategies

To understand the way in which the variegated group of 57 funded projects run their business, we asked companies about their business models and their sales channel (with multiple answers questions). The in-depth evaluation of the business models is presented in chapter 5, but is limited to 40 companies who provided additional data on top of the data shown here.

We compared their answers with the responses that we had from the FIWARE project, to better understand the maturity level of the business of the ODINE participants. We found similarities, such as the Subscription as the most common business model

(chosen by 87% of ODINE companies), followed by the Single Payment model, chosen by one third of companies.

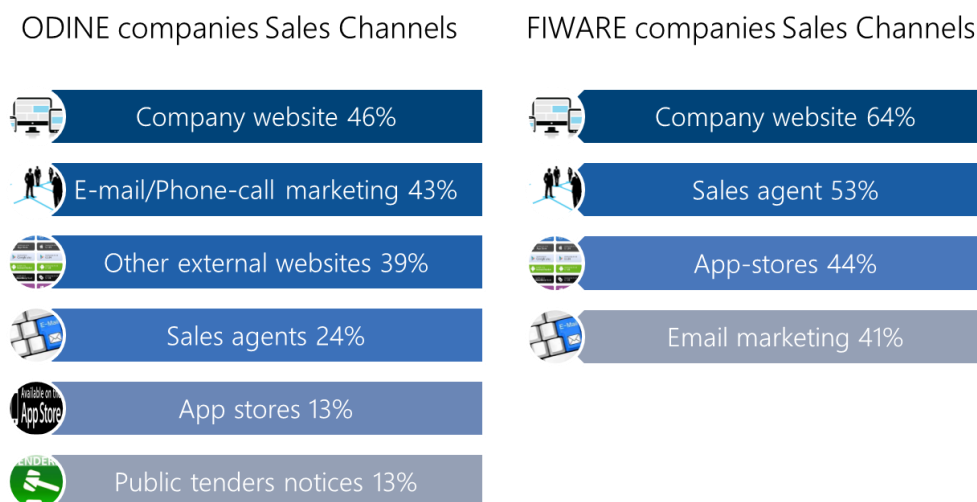
Figure 4 ODINE and FIWARE Business Models comparison



Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents), FI-IMPACT project 2016

On the sales channels side, the personal website is the most common channel for half of them, while for the FIWARE project was higher. In particular, FIWARE companies had already established sales agents, while for startups, or in general, for young companies, is more difficult to have the maturity level needed to have sales agents at the beginning of their business life.

Figure 5 ODINE and FIWARE Sales Channels comparison



Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents), FI-IMPACT project 2016

2.6. Conclusions

As originally planned, ODINE attracted and funded a group of innovative digital startups and very young companies, plus a few SMEs looking for opportunities for growth. The programme's influence on their performance and growth perspective is clearly very strong, since for most of these companies the project launched with ODINE represents their core business. This is confirmed by their very small size on average, with only 14% of them counting more than 10 employees.

They are digital businesses, with an offering based on either software solutions, or hardware embedded with software solutions (IoT solutions), or web-based services. This is confirmed by their commercial strategies, where the prevalent business model is subscription or single payment and sales channels are mostly digital, complemented for 24% of them by sales agents. Therefore, momentum – the ability to attract fast-growing numbers of customers on their web site – is a critical success factor.

No significant correlation emerged between specific offerings and growth dynamics, demonstrating that there is not a single way to success for these companies. However, a positive correlation between national maturity of the Open Data market (measured by a Capgemini study) and the number of ODINE successful applicants by country points out that a rich open data environment provides favorable conditions for innovators in this field. This means that proactive policies improving the usability and availability of open data sets are likely to stimulate private initiatives for the exploitation of data in a positive virtuous cycle.

3. Evaluation of ODINE services

ODINE's acceleration program provided to the selected companies a catalogue of services to increase their ability to perform successfully and grow, built on the expertise from WAYRA, Telefonica's business accelerator, and ODI's Startup programme. This chapter presents the evaluation of ODINE services by the beneficiaries, the funded companies.

3.1. Overview

The acceleration program was tailored for each start-up and SME needs, potential and performance, with the objective of getting the best results out of each one, in a demanding and constantly challenging context. The acceleration program focuses on gaining and increasing business traction for its start-ups and SMEs while bringing

innovation into well established companies with a duration of six months. The main services are described in the Table below.

Table 2 ODINE Portfolio of Services

TRACKING: Follow up, challenge, and boost the progress of start-ups and SMEs.
TRAINING: Train entrepreneurs in business areas or skills required for their development.
ADVICE: Professional services at every start-up and SME disposal, according to their needs.
MENTORING: Support by professionals of well-known experience (investors, entrepreneurs, experts...) to help entrepreneurs to make sound strategic decisions.
NETWORKING: Open up opportunities for the entrepreneurs through the generation of relevant contacts.
SPACE: Possibility to access the spaces provided by partners in several locations.
ACCESS TO INDUSTRY: Provide linking ways for the teams who develop interesting solutions for Telefónica and other industrial partners close to the consortium.
INFRASTRUCTURE: Provision of tools developed by partners that will help in the management of different activities. Special offers from private cloud providers
PR/COMMS: Support the promotion of the image and product of the start-ups and SMEs, thanks to the reach of ODINE's partners, especially The Guardian.
GRANT: Direct grant of up to €100k per team and support towards the achievement of funding from third parties.
INTERNATIONALIZATION: As a Pan European project, and leveraging on the partners global footprint, the selected start-ups and SMEs will have opportunities to introduce themselves in other countries/regions.
EXPERIENCE/BELONGING: Emotionally engage the entrepreneurs with ODINE, ensuring a fruitful relationship.
OFFERS: Offers 3rd party services and products available to start-ups and SMEs.

Source: ODINE Deliverable 3.1 Accelerator Programme Portfolio

The acceleration stage (level of maturity) of the company is also important to identify the most appropriate services. ODINE defined the acceleration stages as follows:

- **PRE-COMMERCIAL STAGE:** start-ups and SMEs are making final adjustments to their business idea, evaluating its value proposition, completing its business model, reaching a MVP (marketable value proposition) and validating it.
- **COMMERCIAL STAGE:** the start-ups are launching their products and/or services on the market. The objective is to achieve a marketable value proposition and to obtain "Engagement" (Product-Market Fit) that translates into Traction. During this stage the start-up or SME often goes through a process of constant trial and error and continuous iterations based on the feedback of "relevant" customers in order to polish their product.

- **GROWTH STAGE/SCALE UP:** This is a stage that only start-ups with the best performance will achieve. The focus will be to reach a dominant position at regional or international level. The aim of the acceleration program will be to convert “start-ups” into sustainable “scale ups”.

ODINE participants were asked to assess how valuable they considered the services received, on a scale from 1 (very low value) to 5 (very high value). Overall, the evaluation is quite positive, with most services scored above the “medium value” midpoint of the scale and only one (networking with potential investors) under 3, as shown in the Figure below.

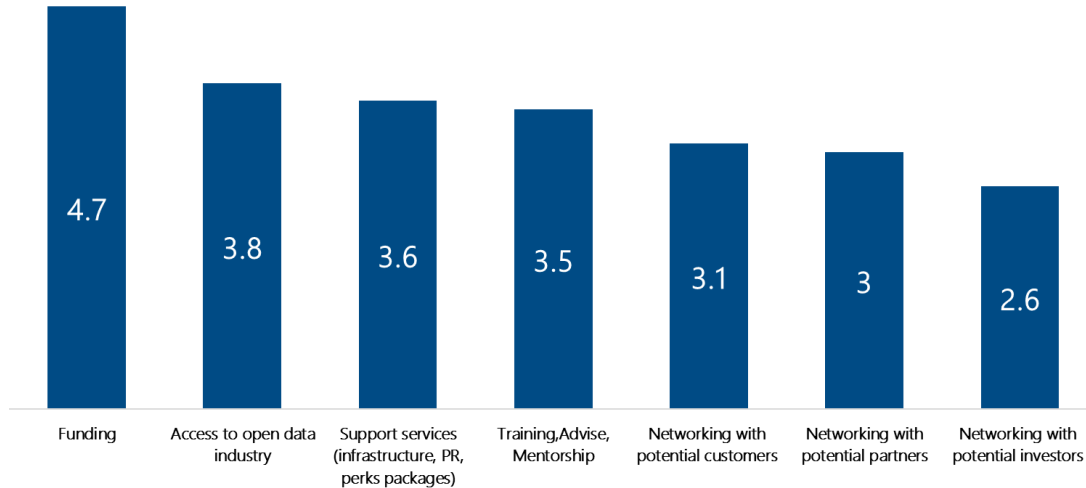
Not surprisingly, **funding** is the service that got the highest score (4.7). One of the main reasons is the companies' profile: young and very new companies that need to be funded to just start their business. Even if the actual amount of funding was small, it was sufficient to kick-off their activities and take the first steps in the growth process. Also, in Europe seed money is relatively scarce for startups.

The second most appreciated service is the **access to open data** (3.8). Since open data is at the core of the companies, this has a high value for companies. The third and fourth most valuable services are **Support services** (infrastructure, PR, perk packages), together with **Training, Advise and Mentorship**. These services are critical in the pre-commercial phase but also in the early commercial stage, when companies are launching their services on the market, and were well appreciated because of their contribution to the development of the business idea.

The networking services (generating relevant contacts for the entrepreneurs) were evaluated at a lower level compared to the previous ones, but still close to 3 (medium value). Networking with potential customers was best appreciated, followed by networking with potential partners and only last with potential investors. This is probably due to the early stage of development of these companies, most of whom were not in the scale-up stage and therefore were not ready to engage with new investors such as venture capitalists.

Figure 6 Evaluation of ODINE Services

Question: "How valuable do you consider the services received from ODINE? Score from 1 (very low value) to 5 (very high value)



Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents)

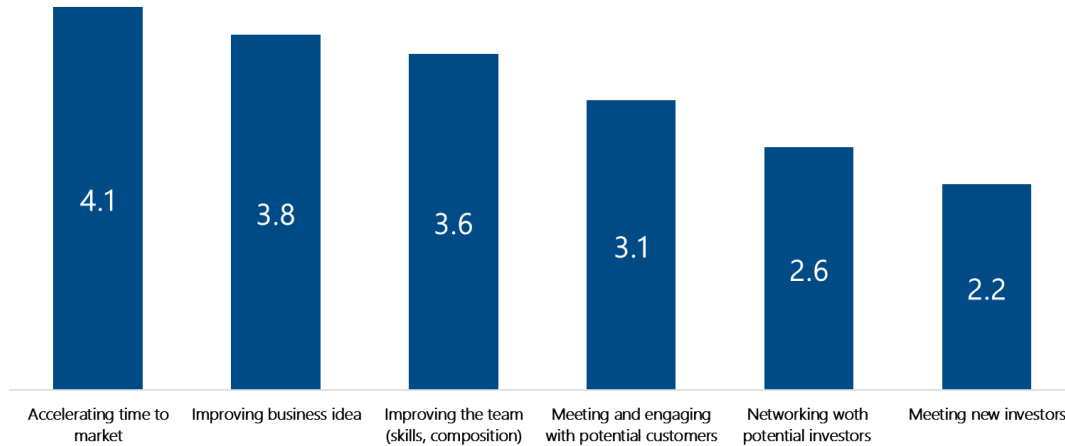
3.2. Evaluation of Benefits

The evaluation of benefits gained from the participation to the programme confirms the evaluation of services, with an overall positive assessment score. ODINE services helped the most in **accelerating the time to market, improving the business idea, and improving the team skills**. This confirms the assessment of the stage of development of these companies, who applied to ODINE to bring their idea to market and received the type of support needed to do so.

Coherently with this picture, engaging with potential customers was considered of medium value, while networking with potential or new investors was scored at low value.

Figure 7 Evaluation of ODINE benefits

Question: Which have been the most important benefits of participation to the ODINE programme? Score from 1 (very low value) to 5 (very high value)



Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents)

3.3. Conclusions

In conclusion, the 57 companies appreciated the accelerator programme and took advantage of the support provided, achieving exactly the main benefit aimed for, that is faster entry into the market and better chances of success. The scoring results were similar in both surveys (ODINE's own survey and the IDC one carried out in April 2017), showing consistency in the participants' opinions. In fact, when asked about the potential consequences if they had not been selected by ODINE, 97% of respondents said their time to market would have been longer, 62% said they would have had lower chances of success. Moreover, 21% of respondents said they would have dropped the business idea and 31% would not have used Open Data. The results highlight the influence of ODINE's programme on companies' behavior.

4. Open Data Benefits

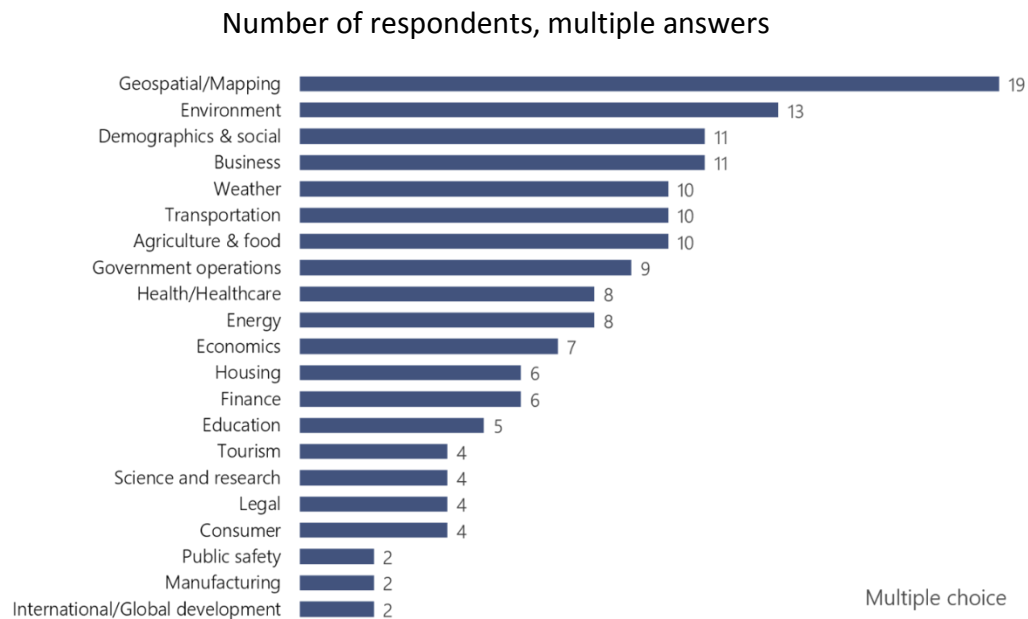
A major goal of ODINE was to inspire and promote new business ideas in the open data market. The analysis of the variety of open data sets used by the ODINE companies and their expected impacts provides a good visibility on how this goal was achieved. This analysis is based on the survey answers about the type of open data used by each company, as shown in Figure 8 below. Datasets were then grouped in clusters with similar topics.

4.1. Use of Open Data

ODINE companies use on average 2 or more types of Open Data (Figure 8 below), first, because they have multiple markets focus, second, because they want to improve their competitiveness with a strong value proposition, and lastly, because they are conscious of the potential economic and social impacts of open data on the ecosystem, and they want to contribute to it.

As shown by the data, there is a large variety of the type of datasets selected but there is clearly a concentration of interest in geospatial/ mapping and environmental data.

Figure 8 Type of Open Data used ODINE companies



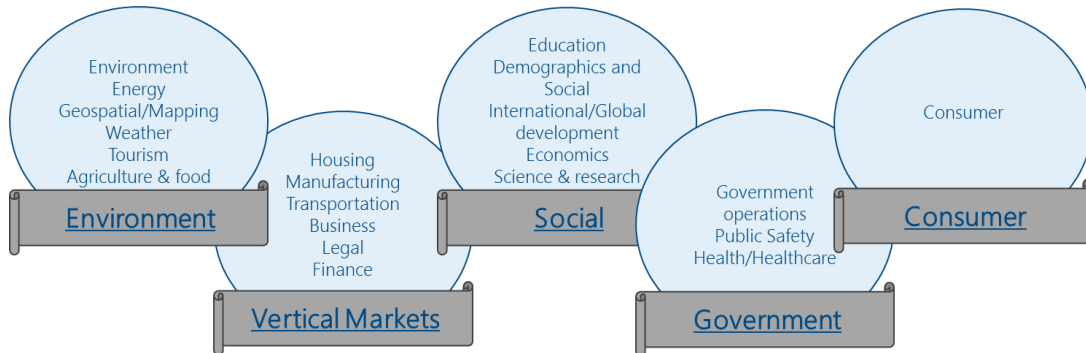
Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents)

To investigate the meaning of this long list of data typologies, we have grouped them in 5 clusters based on their similarities. They are the following:

1. **Environment:** includes Environment, Energy, Geospatial/Mapping, Weather, Tourism, Agriculture & food;
2. **Vertical Markets:** includes Housing, Manufacturing, Transportation, Business, Legal, Finance;
3. **Social** comprises Education, Demographics and Social, International/Global development, Economics, Science & research;
4. **Government** includes Government operations, Public Safety, Health/Healthcare;

5. **Consumer** contains only Consumer.

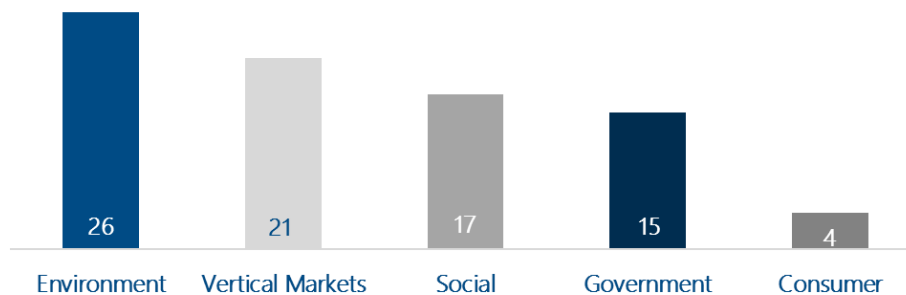
Figure 9 Clusters of Open Data by type



Source: Elaboration on IDC survey, April 2017

We then analyzed companies in terms of how many clusters of open data they use and which of them. Again, we found a high concentration of companies using the Environment Open Data cluster (approximately half of them), followed by the Vertical Markets cluster and the Social cluster. Interestingly, the Government cluster comes fourth in terms of the ranking by number of companies. This confirms that the typologies of Open Data of interest for business is not necessarily dominated by PSI data.

Figure 10 Number of companies by type of Open Data Cluster



Source: Elaboration on IDC survey, April 2017

The environment cluster includes geospatial and weather datasets which represent some of the most frequently used typologies of Open Data. For example, according to the Capgemini study on Open Data quoted above, the top 5 data domains most consulted in public Portals in the EU in 2016 were (in order of priority) statistics, geospatial, Government accountability and democracy, Education, Transport and Infrastructure. However, as shown by table 3 below, many of ODINE innovators

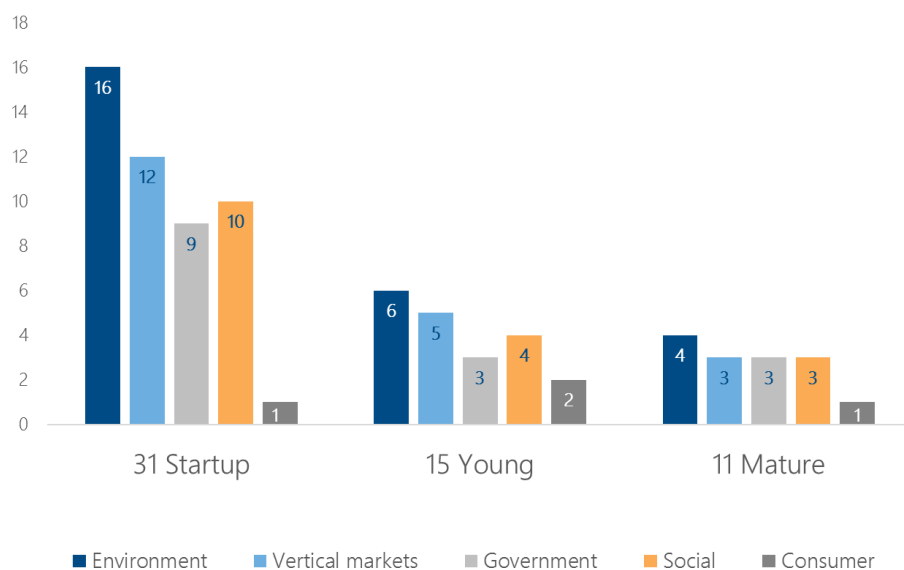
develop solutions focused on environment monitoring or pollution measurement with potentially relevant social and ecological benefits.

Breaking down the 57 by company age, we notice some interesting differences in the use of Open Data (Figure 11). Startups, which represent the larger group, use a greater variety of datasets for all typologies of data (excluding consumer) and are particularly interested in Environment or Vertical Markets Open Data sets. This is shown specifically by Table 3, where it shows for example that 52% of startups use environment datasets, versus only 36% of mature companies.

Startups appear to play more the role of *experimenters*, combining different typologies of Open Data for their solutions, while mature companies appear to be more focused on specific typologies of Open Data. For example, Zazuko is a startup developing an open source software tool for semantic web catalogues, leveraging 6 different types of data: agriculture and food, business, transportation (vertical markets cluster); environment, geospatial/mapping (environment cluster), government operations (government cluster). This is an innovative combination. Another startup, Unigraph, has designed a knowledge graph technology to break down the open data “silos” and accommodate infinite data inputs, leveraging 6 different types of data belonging to 4 different clusters (business, demographics & social, economics, finance, geospatial/mapping, government operations).

On the other hand, mature companies instead tend to use a smaller number of datasets which appear strongly correlated. For example, Brightbook provides an innovative accounting solution leveraging the Vertical markets datasets cluster (finance and business data), while Idalab is focused on urban planning leveraging the government operations cluster. Another example, UNICS/SIRIS develops customized analytics products for High Education and Research institutions and focuses on 3 main typologies of datasets (education, government operations, and science and research) but they are closely correlated and fall in 2 clusters only.

Figure 11 Companies by age and type of Open Data



Source: Elaboration on IDC survey, April 2017

Table 3 Share of companies by age cluster and type of Open Data Cluster used

Open Data Cluster	Startups	Young	Mature	total
Environment	52%	40%	36%	46%
Vertical Markets	39%	33%	27%	37%
Government	29%	20%	27%	26%
Social	32%	27%	27%	30%
Consumer	3%	13%	9%	7%
total	100%	100%	100%	100%

Source: Elaboration on IDC survey, April 2017

4.2. Building an Open Data ecosystem

ODINE companies consider Open Data as extremely or very important for their business model (88% of respondents) or at least moderately important (the remaining 12%). This is natural, because the use of Open Data was one of the criteria of selection of this group of companies. But, even more relevant, the variety of business ideas developed by the ODINE companies naturally compose an Open Data ecosystem covering most segments of the data value chain, with a stronger presence in the more innovative components like data analytics.

This emerges from the classification shown in Table 4 below, which looks closely at ODINE companies' value proposition and their target markets, based on IDC's experience and knowledge of emerging demand trends. This classification is not statistically validated⁸, but highlights how these companies are developing data-driven innovation by sector or market segment, focusing on the value added brought by the combination of Open Data and commercial or proprietary data. This shows ODINE's impact on the development of an **innovative ecosystem** in Europe, because data-driven innovation links companies and customers in new ways, providing value added based on data, business intelligence, matching demand with supply.

The largest group of enterprises (11) develop data solutions specialized by vertical market addressing end-users: if we add the 6 companies addressing healthcare, 5 active in the Real Estate market and 4 in agriculture we reach a total of 26 ODINE companies helping the European industry adopt data-driven innovation. We could also add to this group the 3 companies developing consumer apps for the entertainment or traveling, as they are focused on end users. Another group of companies are more focused on technology: 9 companies develop tools and solutions for what we see as building blocks of the data supply chain, helping to improve quality or solve problems in data analytics.

7 companies address the emerging sustainable economy or low carbon economy market, with a focus on environmental, energy saving and pollution monitoring solutions, either for consumers, or public authorities, or other businesses. A similar focus on environmental sustainability is a common element of the 2 companies developing smart mobility solutions, the 2 companies developing smart building solutions, and the 3 companies developing solutions for smart cities. Finally, there are 3 companies providing data solutions for government transparency or elections efficiency and 2 more supporting data-driven policies in the urban policy field. Their focus on policy differentiates them from "traditional" IT solutions and highlights the effort to bring business intelligence into the public sector.

⁸ It is not based on NACE2 industry classification

Table 4 ODINE companies' classification by target market

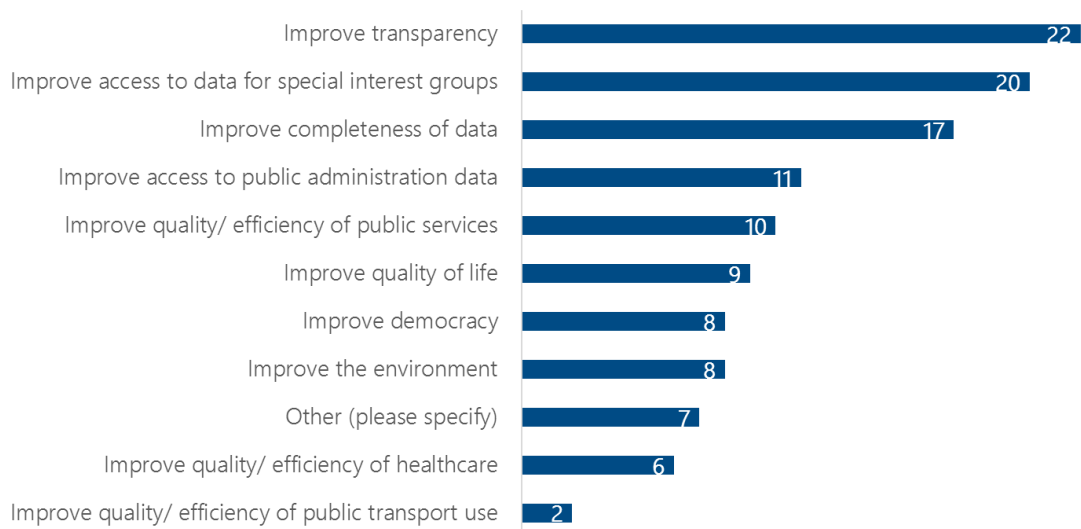
Market classification	Description	Number	Companies
Vertical Markets	Data solutions specialized by vertical market (e.g. Web-based services, Education, Finance, Food, Legal, Oil)	11	Brightbook; CommoPrices; Implisense; openlaws gmbh; OpenOil; OpenResort/Infamous Labs; Pobble; Prospeh/ Origin trail; Provenance; Suade Labs; UNICS/ SIRIS
Data supply chain	Development of data tools and technologies for data analytics or data science	9	DataPress; imin; instats; lplytics; OpenSensors; Thingful; Tilde; Unigraph; Zazuko
Environment/ Pollution	Leverage data to improve environment quality, pollution monitoring, use of energy renewables	7	Air and Space Evidence; Derilinx; Environment Systems; Exceedence; Green City Solutions (CityTree); InSymbio; Plume Labs
Healthcare	Data-driven services for health	6	HybridStat; limtec; Mint Labs; Sickly/StudyBugs; Viomedeo; Zumo/Yuscale
Real Estate	Data-driven services providing transparency and advice for real estate managers and buyers	5	Guide2Property; RentSquare; Sinergise; Urban Data Analytics; Whythawk/Pikhaya
Agriculture / Precision farming	Data-driven solutions for the agriculture-food industry	4	A.A.A Taranis Visual; Cropti; Farm Dog; green spin
Smart City	Data-driven services for smart cities	3	BikeCitizens; Glimworm (iBeacon LL); RESC.info/Netage;
Open Government/ Elections	Data-driven services for government transparency or voting systems	3	1848; 3Desk (Wholi); Open Gazettes
Media/Tourism / Consumer	Consumer apps for entertainment, travelling or city living	3	AskHelmut; AVUXI; We Are Colony
Smart Buildings	Data-driven services for intelligent and energy saving buildings	2	Contagt; Sun Energia
Smart Mobility	Data-driven solutions for smart mobility	2	Fstr; Konetik
Urban Policy	Data-driven services for urban management and zoning	2	Idalab; Land Insight
Total		57	

Source: IDC classification April 2017

4.3. Social Benefits

ODINE companies indicate the improvement of transparency and access to data as the main social benefits expected from their business ideas, out of a closed list of potential benefits proposed by the questionnaire (Figure 13 below). The improvement of quality of services is mentioned quite often, while the improvement of environment is surprisingly chosen only by 8 respondents, even though we have seen in Table 4 above how many companies provide solutions with potential benefits for environmental protection and sustainability.

Figure 12 . Main Social Benefits of Open data



Source: IDC for ODINE Survey, April 2017 (42 respondents) plus ODINE Business Survey, December 2016, (15 respondents)

4.4. Conclusions

Drawing from the results presented above, ODINE succeeded in inspiring and promoting a range of new business ideas highlighting the value added of Open Data in the data market. Each of the 57 startups and SMEs leverages at least 2 types of Open Data with a strong concentration of interest in geospatial/ mapping and environmental data clusters.

We found that startups use a wide variety of Open Data, for example 5 or 6 different datasets, playing the role of **experimenters**, combining different typologies of Open Data for their solutions. Mature companies appear to be more focused on 2 or at most 3 typologies of Open Data closely correlated. Examples of companies using many different types of datasets are Zazuko and Unigraph, while focused mature companies' examples are Brightbook (finance) or Idalab (government).

The variety of business ideas developed by the ODINE companies naturally compose an Open Data ecosystem covering many segments of the data value chain, with a stronger presence in the more innovative components such as data analytics. A classification developed by IDC based on their value proposition and target market highlight how these companies are developing the building blocks of the data economy, helping the European industry to adopt data-driven innovation.

Overall, 26 of ODINE companies develop solutions for vertical markets, ranging from healthcare (6 companies) to real estate (5 companies), from food-agriculture to Oil and gas. Another priority of ODINE companies is the emerging sustainable or low carbon economy, with several companies focused on energy saving, environmental monitoring, smart mobility. A cluster of 7 companies are developing clever technology solutions for the data value chain.

5. Evaluation of Business Plans

5.1. Approach

A key research question concerned the level of successful achievement of ODINE's participants' business plans. To investigate it we carried out an evaluation of individual business plans, with a focus on:

- The completeness and depth of plans and business models, compared with best practice standards;
- The level of validation of business models, based on the progress made in going to market and capturing early customers' response.

The approach is qualitative, based on our experts' assessment of the progress achieved by each company in their business model development and validation on the market. The purpose is not to judge the quality of the assumptions and forecast made by companies' business plans, as these can only be validated by their success (or not) on the market, but to measure their progress in the period between the original drafting of the plan and the evaluation in May 2017.

The evidence collected was based on:

- Answers to the IDC online survey (40 respondents including 8 direct interviews);
- 10 interviews with non-funded companies;
- Additional data from the ODINE business model survey, business plans documents and other data from ODINE's repository, for the 40 companies analysed.

In total, we assessed 40 ODINE companies and 10 non-funded companies.

5.2. Measuring Achievement

To compare the level of success of the business plans we designed a set of 4 complementary indicators measuring the key performance areas of a business plan:

- **Value proposition:** assessing how much the value proposition has been proven by dealing with the market.
- **Revenue flow:** assessing the level of achievement in generating revenues from the new product.
- **Customer acquisition:** assessing the level of achievement in finding a repeatable and scalable way to acquire customers.
- **Financials:** assessing the level of achievement in financing the product and business development.

The measurement is based on a scoring scale of 1 to 4, where a high score indicates a positive achievement in developing that aspect of the business model. The 4 indicators allow assessing both “Product Development” and “Customer Development”, i.e., the processes defined in the popular “lean startup” methodology⁹ to iteratively improve the product and business model by gathering knowledge of the customers and of the target market, before putting in place a conventional marketing and sales strategy. Table 5 below, in the “Definition” column, lists the criteria used for attributing scores to the assessed companies, e.g., a score of 1 in “Value proposition” has been assigned if the company has not yet validated its value proposition by accessing the market, either through survey’s, focus groups or through direct involvement of the final customer.

Table 5 Achievement Indicator’s description

Value proposition	1	value proposition not validated
	2	value proposition with expert, survey, focus group etc.
	3	early adopters using product
	4	recurring sales on the market
Revenue flow	1	hypothetical business model (the company is not yet generating revenue)
	2	some revenues but not from product sales
	3	some revenues but still insufficient to grow the product and the company
	4	revenue flows sufficient to grow
Customer acquisition	1	Customer acquisition process under definition
	2	Defined customer acquisition process

⁹ Steve Blank, “The four steps to Epiphany”, 2013.

Financial	3	Customer acquisition process under validation
	4	Customer acquisition channels and process validated
	1	Insufficient funding at the moment to go forward
	2	Funding situation unknown
	3	Funding secured until breakeven
	4	Breakeven point reached

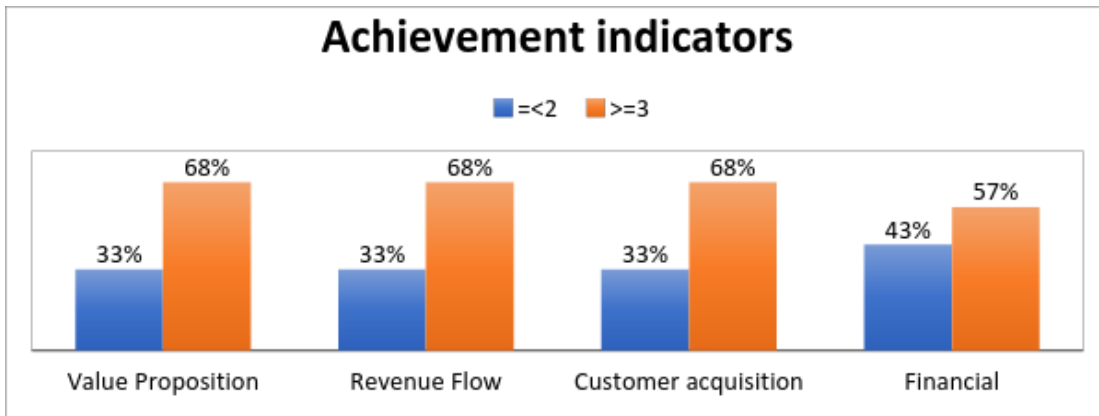
Source: IDC, 2017

The scores assigned to the 40 assessed companies plus 10 non-funded companies are available in an open data set.

5.3. Main results

Figure 13 shows the distribution of scores for the entire population of assessed companies. Overall, the ODINE companies show good results, with roughly 60% or more companies scoring 3 or higher in all four Achievement indicators, testifying a good progress in the corresponding business model area.

Figure 13 Achievement indicators scores distribution (40 respondents)



Focusing on the Value proposition achievement indicator (Figure 14), both startups and mature companies are well positioned, a large majority of companies having validated their value proposition through direct engagement with customers (early adopters and recurring sales). A similar level of achievement can be observed for the Revenue Flow and Customer Acquisition indicators. On the Financial indicator (Figure 17), mature companies appear as more advanced, which can be expected since they have an already sustainable business that can support new products development.

Figure 14 Value proposition scores by company maturity (40 respondents)

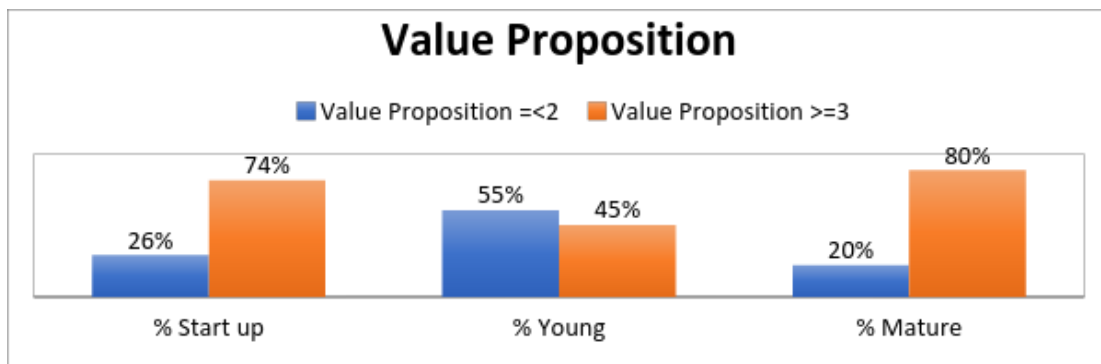


Figure 15 Revenue flow scores by company maturity (40 respondents)

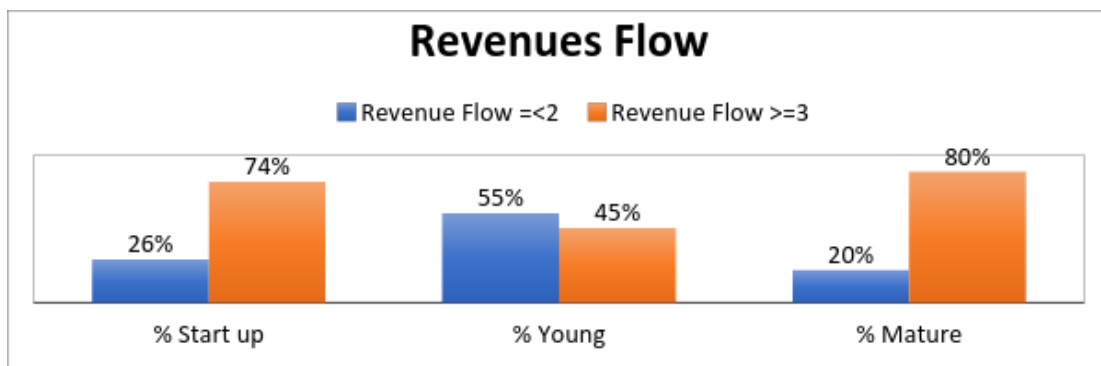


Figure 16 Customer acquisition scores point by company maturity (40 respondents)

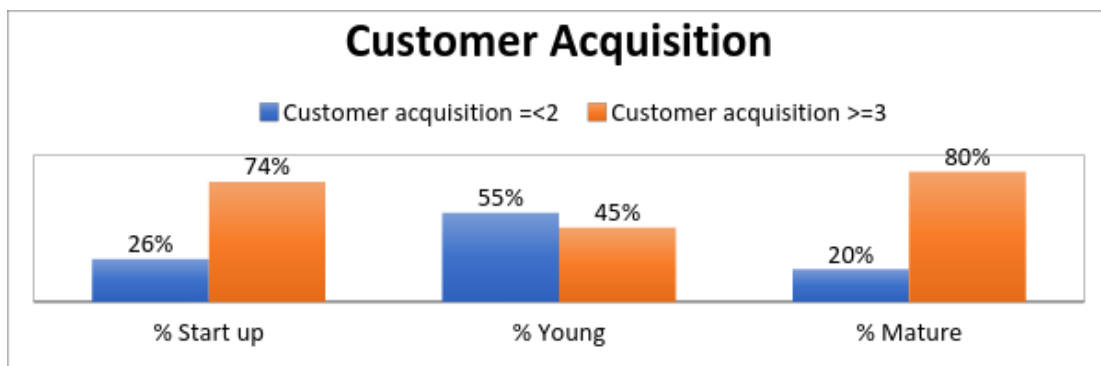
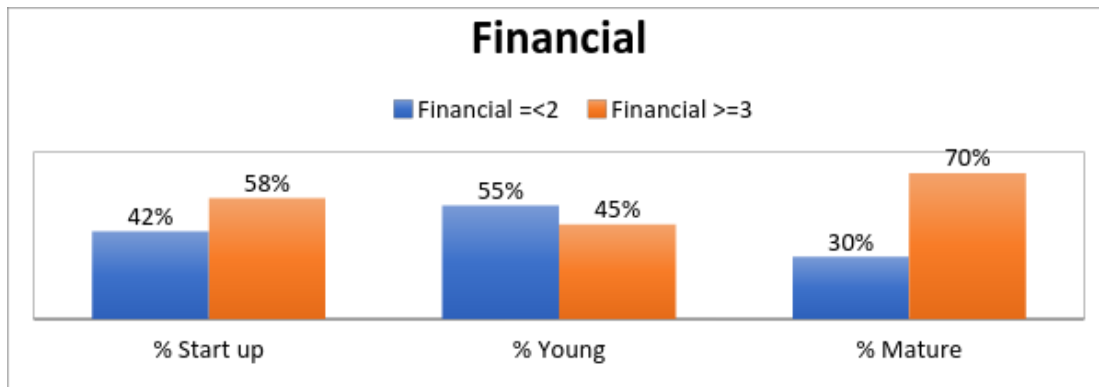


Figure 17 Financial scores by company maturity (40 respondents)



Source: IDC 2017

5.4. Clustering: an investor's view

Based on the Achievement scores, the surveyed companies have been clustered taking the viewpoint of a typical investor deciding whether to invest on a new product, and to what purpose.

The clusters are designed on 2 dimensions:

- **Product development achievement:** sum of the value proposition and financial scores. Companies with high aggregated scores have a validated value proposition and have secured funding from entrepreneurs or venture capital.
- **Customer development achievement:** sum of the revenue flows and customer acquisition scores. Companies with high aggregated scores have substantial revenue flows from the new product and a proven customer acquisition process.

The chart below shows the distribution of the ODINE assessed companies according to the two dimensions. This results in 4 main clusters:

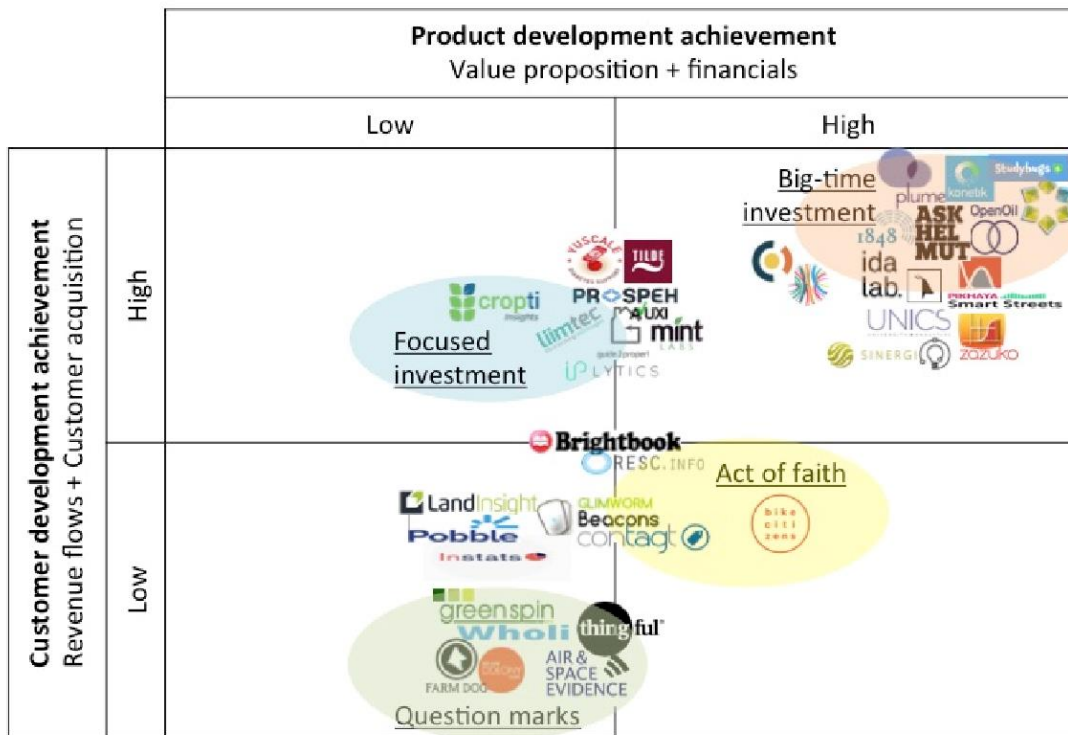
1. **Question mark:** companies with unproven value proposition and scant knowledge of the market (such as “Farm dog”, “Green Spin”, “Wholi”, “We are colony”, “Thingful”, “Air and Space Evidence”, that have not yet validated their value proposition through the first sales and that are not self-sustainable since the funds they internally have or they have received from external sources are not enough to go forward).
2. **Act of faith:** companies who have a nice product and have been able to attract funding, but still don't have a stable grip on the market (such as “Bike Citizens” that is still defining the customer acquisition process, timing and costs). Investing is an “act of faith” on how the promising product will perform once brought on the market.

3. **Focused investment:** companies who have established some revenue flows and active channels on the market, but need more investment to improve their value proposition (such as “Cropti”, that is generating revenues but it is still validating and refining the customer acquisition process). A small focused investment should help them develop their product.
4. **Big-time investment:** companies who have both excellent products and a firm grip on the market, producing revenues to enable further growth (such as “Plume Labs”, “Konetik”, “Green City Solutions”, “Open Oil” and “Studybugs”, that have validated their value proposition through recurring sales, have validated the customer acquisition process and have secured funds to reach the Break Even Point). Large investments are needed to scale-up the business.

The other companies are not yet in a clear position:

- Startups as “Yuscale”, “Tilde”, “Prospeh”, “Avuxi”, “Mint”, “Liimtec”, “IPlytics” and “Guide2Property” are neither Focused Investment nor Big-time investment but they can reach one or the other based on their focus on product development, since currently they are validating the value proposition through early adopters,. In addition, to working on the sales and marketing strategy and are still validating the customer acquisition process. If they will focus more on product development and on how to get new funds and allocate those already available, they could have more chances to becameo a Big-time investment.
- Startups as “Commoprices”, “Unigraph”, “Idalab”, “Fstr”, “1848”, “Ask Helmut”, “Pikhaya”, “Implisense”, “Hybridstat”, “UNICS”, “Sinergise” and “Zazuko”, are not yet Big-time investment but they are going in the right direction to scale-up on the market, both from the value proposition and financial point of view.
- On the other hand “Land Insight”, “Instats”, “Pobble”, “Brightbook”, “RESC.info”, “Glimworm” and “Contagt”, are somewhat in-between the above groups, as they are in middle of a transformation process. They have changed the revenue business model or customer acquisition process and are still evaluating the best way to go forward. They must focus both on customer development and product development to have a chance to attract further investments.

Figure 18 Clustering companies by level of achievement (40 respondents)



Source: Elaboration by Bluegreen and IDC, 2017

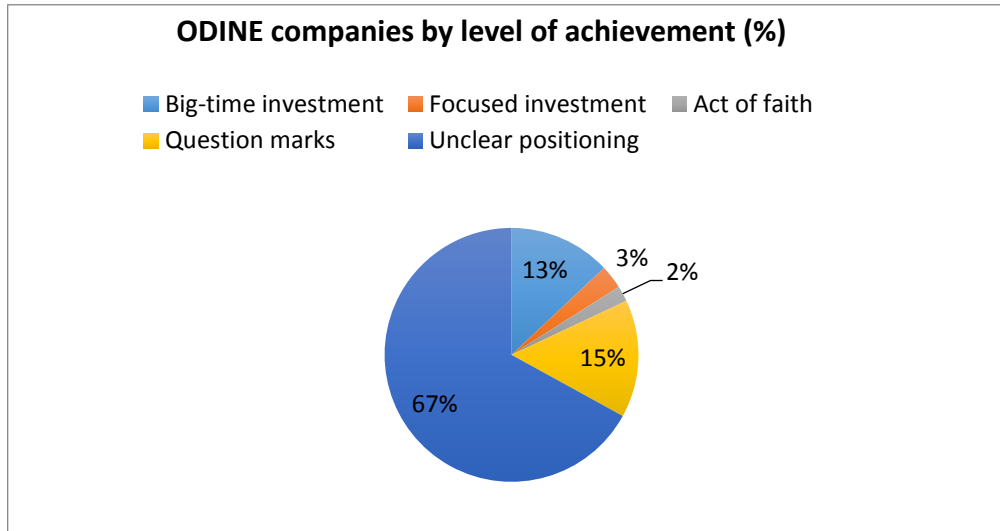
5.5. Conclusions

5.5.1. Achievement of ODINE companies

Figure 19 shows the size of each cluster in percentage of the total assessed companies. A good number of companies appear to be in the position to attract significant investments, either to scale-up a proven business model (13% “Big time investment”) or to further develop a promising product (3% “Focused investment”). This is lower than top accelerators in the global market (e.g., Y Combinator) but still in line with the average results achieved by several renowned acceleration programs¹⁰.

¹⁰ <https://www.cbinsights.com/blog/top-accelerators-follow-on-funding-rates/>

Figure 19 ODINE companies by level of achievement (40 respondents)



Source: Elaboration by Bluegreen and IDC, 2017

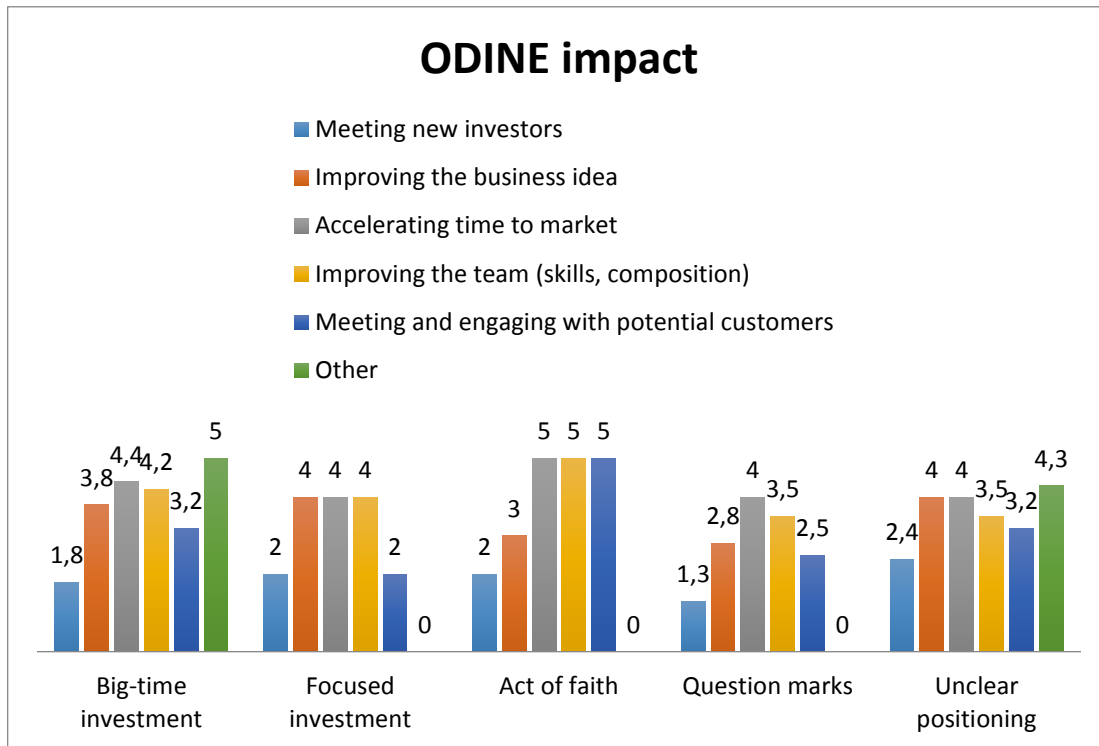
The analysis also shows a high share of companies labeled as “unclear positioning”. Some of these companies need to further explore the market or to refine their value proposition, but are in a good position to become valuable investments. Some others are still testing significant changes on their business model. This can be expected since ODINE has selected ideas in different stages of development.

5.5.2. ODINE impact

Figure 20 shows ODINE benefits on the assessed companies, grouped by their level of achievement (clusters). The most relevant benefit is “accelerating time to market”, highlighted by most companies regardless of their level of achievement. Also, regardless of their achievement, most companies do not recognize “meeting investors” as a value-added.

The level of achievement appears to be related to the ODINE benefits as perceived by the surveyed companies. Those who are more advanced in developing their product and business model (“Big-time investment”, “Focused investment”..) have a similar, high-level appreciation. Those who are still behind in their development (“Question marks”) show a lower appreciation of all benefits.

Figure 20 ODINE impact by level of achievement (37 respondents)

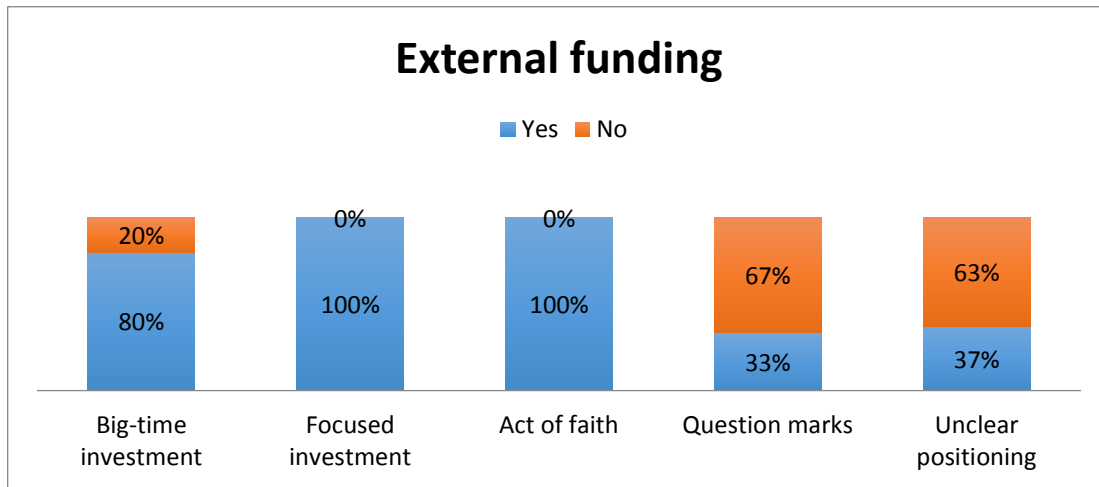


Source: Elaboration by Bluegreen and IDC, 2017

5.5.3. Level of achievement vs. external funding

Figure 21 shows the percentage of external funding attracted by ODINE companies grouped by their level of achievement (clusters). There is clearly a relationship between the business model development achievement and the company's attractiveness to investors (private or public). Only less than a third of "Question marks" and "Unclear positioning" companies have received external funding, while companies in the other categories have in large majority (over 80%) been funded by external sources in addition to ODINE.

Figure 21 External funding by level of achievement (40 respondents)



Source: Elaboration by Bluegreen and IDC, 2017

6. ODINE Impacts on growth

6.1. Introduction

IDC developed two different approaches to assess the market impact of ODINE. The two approaches – a market model on one side and a survey-based model on the other side – have been reconciled in a final stage to provide a single fully consistent and solid view of ODINE impacts.

Therefore, this chapter has the following main objectives:

- To assess the potential market impacts of ODINE, measured in terms of the number of companies surviving by 2020, their potential revenues, the number of employees, and their potential users;
- To present the main assumptions driving the forecast estimates;
- To discuss the counterfactual scenario, considering the potential consequences if the 57 selected companies would have not been part of the acceleration program and had not received the 5.6€M investments.

More specifically this chapter is divided in two parts presenting the main results as follows:

- **Estimate of funded initiatives' revenues to 2020.** This presents the results of the analysis that calculates the estimated revenues of the ODINE selected companies. This model projects the revenues to 2020. This part also includes the estimate of the number of employees.

- **Estimate of the number of potential business and consumer users attracted by the selected companies.** Building on the results of the revenue forecast, this model estimates how many businesses and/or consumers will be attracted.

The model covers the period from 2016 to 2020.

6.2. Methodology

This section explains the assumptions behind IDC models and the methodological approach IDC followed to estimate the total revenues that will be generated by funded initiatives up to 2020.

Data sources that have been leveraged include:

- IDC for ODINE Survey (April 2017);
- ODINE business model survey (December 2016);
- Data and information about individual companies made available by ODINE or publicly available (e.g. websites);
- Relevant data from Eurostat and other public sources (e.g. death rates);
- Available literature (for example other European accelerators' reports) was used as a benchmark.

Estimating the total revenue generated by selected companies is complex as many variables must be considered both in terms of their characteristics and rate of development (e.g. market entry year, number of team members, type of proposed solution, etc.) and in terms of their possible success once on the market. The methodology is articulated in two main steps:

- Baseline assumptions: understanding the nature of funded initiatives (step 1);
- Forecast assumptions: Estimating their future trends and likelihood of success (step 2).

6.2.1. Step 1: Baseline Assumptions – Market Model

First of all we need to understand who the selected companies are and what do they do. To do this we leveraged our mapping analysis (see Chapter 2) and the results of the IDC for ODINE Survey (42 compiled questionnaires). In particular, our methodological approach builds on the following indicators:

- Number of selected initiatives (reference population);
- Market Entry year for each initiative;
- Distribution of selected initiatives by type of offering, number of team members, and geographical scope;

- Average revenue generated by a single initiative during its first year on the market.

Reference Population

ODINE selected 57 companies to be accelerated out of 1,176 applications from 731 different companies (445 re-submissions). This sample covers rounds 2 to 8, without filtering re-submissions.

Market Entry Year

Analyzing the 57 selected companies we found that the majority (31 companies) are start-up, which were born in 2014 or later. There is then a group of 15 companies which we called "Young" which entered the market between 2012 and 2013. There is also a smaller group of companies (11) which were born in 2011 or earlier; we called them "Mature" companies. Therefore, the population of companies is not only composed of start-ups born with the programme, but also of young and more mature SMEs relying on the ODINE opportunity to accelerate product development and boost their business.

Profile of funded initiatives

Other key inputs for the model concern the technology offering of funded initiatives, the team size and which market they will address and their geographical scope.

Technology offering

As illustrated in the mapping analysis (§ 2.10), we segmented the selected companies in three main clusters depending on the type of technology offering: purely software solutions, hardware with embedded software solutions, and web-based services. This segmentation is extremely important to appropriately estimate revenue generation over the next few years. In terms of business models and revenue growth we have adopted the following assumptions:

- Initiatives offering purely software solutions do not require high capital investments and their likely revenues are close to the average of the reference sample, with a gradual growth dynamic.
- Most initiatives offering hardware and software solutions do not produce directly the hardware components (sensors, devices, screens, etc.) but buy them from sub-suppliers. This requires a higher initial investment compared to purely software players. When we consider revenues (not profits), this has an impact as they will also resell the hardware with a mark-up. Therefore, companies offering hardware and software solutions are expected to have higher revenues than the average sample at least in the first years.

- Web-based services companies have different characteristics with respect to the other two clusters. Their revenue flows may come from a mix of sales, and/or subscription, and/or advertising, or other sources (e.g. freemium models). Based on empirical research, this type of companies tends to have low average revenues in their first years (when they are focused on increasing the volume of users, rather than revenues) but they may take off very quickly once they reach a critical mass of users.

Number of Team members

The number of team members is closely correlated with revenues. The following assumptions have been verified through the IDC for ODINE survey and used:

- Smaller teams with 1-2 members generate lower average revenues in their first years, although higher growth rates, if successful (this as new employment will have a stronger impact in terms of team revenues growth on 1-2 members team with respect to larger team of more than 10 members).
- The team dimension is also correlated with potential death rates. Greenfield initiatives starting from scratch, with 1-person team, are likely to suffer higher death rates than young enterprises with a small partnership but who have already survived a couple of years.

Market targets

The primary industry sector targeted by the selected companies initiatives was used in the model as an additional factor influencing the revenues dynamics (leveraging IDC's vertical markets knowledge and demand forecasts).

The main assumptions were:

- Selected companies addressing the private market grow faster than those addressing the public sector (where public procurement requires a long lead time and all kinds of references and guarantees of financial solidity);
- Selected companies with a B2B or B2B2C business model experience higher barriers to entrance and a more gradual growth path than pure B2C initiatives, because they need to gain their business customers' trust and interact with complex supply chains; however, once past the early phase, they enjoy less fluctuations in revenues and greater solidity;
- Selected companies with a B2C business model may take off quickly (with rapidly growing revenues) if they achieve visibility but may suffer from boom and bust cycles, depending on customer loyalty and their capability to reach a critical mass of users triggering positive network effects.

- We have also considered the different propensity of industry sectors to adopt the type of innovative technologies used by the selected companies such as IoT, 3D printing, software application category.

Geographical scope

Lastly (but not least), the geographical scope has to be considered, since this indicates the propensity to develop an aggressive market strategy and therefore to aim for higher growth. This indicator was sourced from the IDC for ODINE survey with the following assumptions:

- Selected companies declaring to focus on the local or national market will generate less revenues than average and grow more slowly;
- Selected companies addressing more than one country or the EU or the global market will grow faster and generate higher revenues than average.

Average 1st year revenue

The baseline starting point for the model is the estimate of 1st year average revenue segmented by the main 3 initiative clusters and 2 categories of geographical scope (national/international). This is used as an input for the model.

Estimating the average first year (on-the-market) revenues is not that easy, in particular as many funded initiatives in their first year could also have no revenues and just survive thanks to fund raising. After analyzing all available data we estimated that on average selected companies would generate approximately €7,500 per each team member in their first year of life. This is based on the assumption that for many funded initiatives the main source of money in the 1st year will be external funds obtained from investors.

This value partially changes with respect to the offering cluster we consider and the geographical scope, as highlighted above. Moreover, a multiplier has to be applied to take into account the dimension of the team (the larger the team, the higher the revenues generated during its first year on the market). The industry sector targets are not assumed to have an impact on the average 1st year revenue but more on the growth rates during the next few years (see next section). The Table below shows the 1st year average revenue estimates applied to each category.

Table 6 Selected companies average revenues in the 1st year

Type of Offering	Geographical Scope	Number of Team Members			
		1	2 to 5	6 to 10	10+
Pure software	National	5,685 €	19,897 €	45,478 €	85,272 €
	Multiple Countries	8,602 €	30,107 €	68,816 €	129,030 €
Web-based services	National	4,651 €	16,279 €	37,210 €	69,768 €
	Multiple Countries	7,038 €	24,633 €	56,304 €	105,570 €
Hardware & software	National	6,719 €	23,514 €	53,747 €	100,776 €
	Multiple Countries	10,166 €	35,581 €	81,328 €	152,490 €

Source: IDC, 2017

6.2.2. Step 2: Forecast Assumptions – Market Model

When forecasting the revenues generated by selected companies we have to take into account the fact that not all of them will have the same success and growth dynamics in the examined period. We need also to consider the range of external factors which may influence their performance up to 2020.

To reflect the wide variety of these start-ups and SMEs, the model is articulated as follows:

- The death rates applied to the selected companies are sourced from Eurostat and were modulated by type of company;
- Selected companies are distributed in 3 categories with different revenue growth paths.

Death rates

Death rates are a critical input to the model and difficult to estimate. The death rate is extremely high among start-ups, in a dynamic and competitive sector such as the digital one. A large share of new IT start-ups fails and disappears within five years from their market entry, impaired by high competition, market trends, and inadequate business plans. Survival rates tend to increase as companies get older. In addition, death rates are influenced by economic conditions, increasing in recessions and decreasing with economic growth and positive demand dynamics.

To take these factors into account we have used the following approach:

- The starting point was the average death rate for new enterprises after 5 years, sourced from Eurostat¹¹, of 56%.
- This death rate was diminished considering that typical survival rates of companies that are accelerated through projects along the line of ODINE, are usually lower. This is due to the positive effect of funding, services and networking received by accelerated companies, which improve their chances of success increasing their average lifetime and diminishing their average death rates. Literature from other European accelerators on average survival rates of accelerated companies was used as a benchmark.
- This resulted in an average survival rate of 74%.

Selected companies' growth trajectories

Growth trajectories over the period to 2020 can be therefore classified into 3 main groups as follows:

- One group of companies will eventually fail.
- Another group includes those companies that will remain standing after 5 years, by 2020. The survivors are enterprises that will have a positive impact on the market and whose revenues will grow across the years. The majority of them will show a regular trend across the years both in terms of yearly revenues increase and new hired employees and tend towards stability, even if they differ in terms of when their peak of growth will be.
- Finally, we expect that a minor percentage of companies (potentially very high achievers, the “stars” of our population) will start very slow during the first 2-3 years and will then take-off, with rapidly increasing revenues which may continue climbing fast beyond 2020, after the period covered by the model. These high achievers can be found more often in the web services cluster of selected companies, because of their focus on new, emerging services markets. Many web services during their early life focus on incrementing their users' database with no direct effect on revenues, postponing profits generation and revenues explosion at a later stage. A recent famous example is represented by the car-sharing service BlaBlaCar. During its first years, while people were becoming familiar with the service and word of mouth was attracting more and more users, the only income was represented by funding from private investors. Just in a second moment, once that the number of users was considerable, the business model moved to a transaction fees

¹¹http://ec.europa.eu/eurostat/statistics-explained/index.php/Business_demography_statistics

approach (the service takes a percentage of the transactions done on the service platform) creating a new revenues stream.

6.2.3. Survey-Based Model

IDC conducted a survey in which most of the selected companies provided data on their revenue generation, on the number of people they employ and on their expected growth rates, among other information. This data was analyzed, elaborated and used by IDC to check and validate the market model output.

Therefore, the impact assessment and the model results shown in the next chapter are fully aligned with IDC elaboration of IDC for ODINE survey data as output data from the 2 approaches, which were extremely similar, have been reconciled.

6.3. Impact assessment

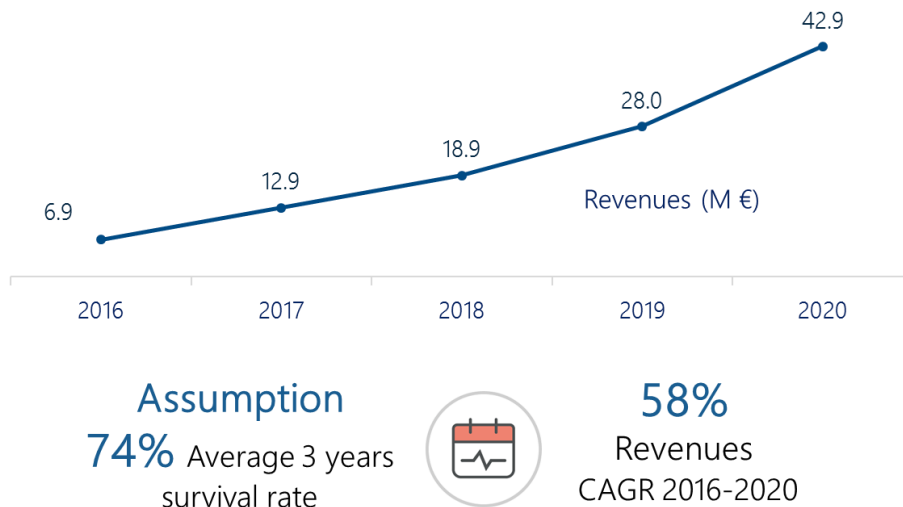
6.3.1. Model results

Revenues

Building on the assumption illustrated above, the IDC market model outputs show that the potential revenues generated by the ODINE selected companies still surviving will be 42.9 €M by 2020.

Cumulatively, generated revenues for the period 2016 to 2020, will be 110 €M. The compound annual growth rate (CAGR) for the period 2016-2020 will be 58%.

Figure 22 15 Forecast Revenues to 2020 by year

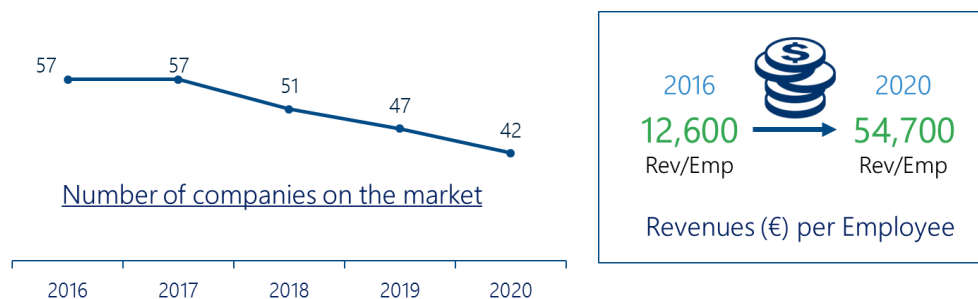


Source: IDC, 2017

Number of companies

IDC expects that 42 out of the 57 selected companies will survive to 2020, which implies a 3 years' survival rate of 74%. IDC estimates that these companies, which in 2017 generate average revenues per employee of 12,600 €, will see this number to grow to 55,000 € in 2020, that is enough for sustainability and profitability. Indeed, many companies survive in their first years of activity thanks to early stage funding from external investors, and are far from breaking even, with revenues representing just a fraction of their costs and investments. Only after at least 3 years on the market, most successful start-ups will generate sufficient revenues to become self-sustaining (while the others will disappear).

Figure 23 Forecast Revenues to 2020 by year



Source: IDC, 2017

Average revenues per company

Successful selected companies that will still be on the market in 2020 will generate on average more than 1 €M each in 2020.

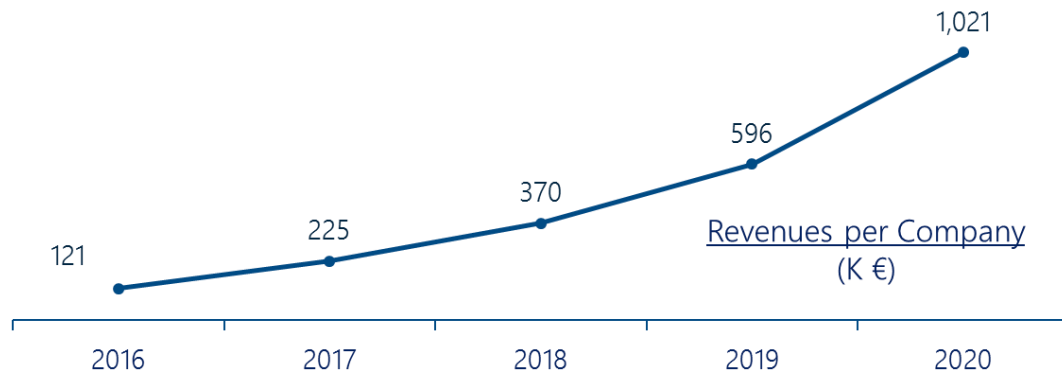
To provide some perspective on this value, we should consider that per Eurostat¹², the average revenues of the 439,000 companies active in the EU Information and Communication sector in 2015 were around 0.9 €M, which is lower than the forecast for our companies in the year 2020. The Eurostat average includes large enterprises (which are less than 1% of the total universe, though), so the average revenues for small enterprises of the same size as those in our reference population are probably closer to 0.5-0.6 €M per year. The IT sector is characterized by a high number of very small IT companies with very low turnover, whose destiny is never to grow. This is not the case of the ODINE selected companies examined in this report, whose dynamism

¹² Eurostat Structural Business Statistics, Turnover EU28 NACE J Information and Communication services, for companies with 0+ employees, accessed in 2015 and number of companies

and ambition foresee better than average growth perspectives in the years after 2020 (also thanks to the selection process they underwent).

IDC FIMPACT assessment foresaw a higher death rate for the funded initiatives but also slightly higher revenues per company for the survivals which remained in the same ballpark range and more precisely it was around 1.2 €M average revenue per company by 2020.

Figure 24 Average revenues per company to 2020 by year



Source: IDC, 2017

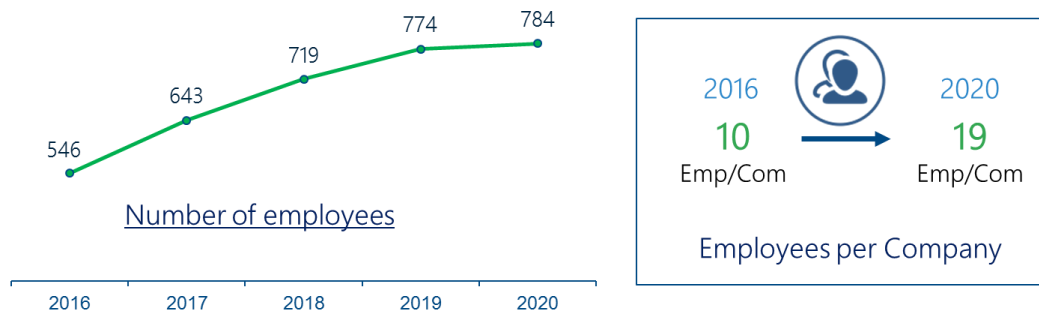
Employees

Next figure shows the job creation, which is another critical indicator. Considering the employee expansion that successful funded initiatives will have over the next few years, the number of employees working for ODINE selected companies is expected to increase from 546 total employees in 2016 to an estimate of 784 employees in 2020. Each company is expected to add jobs moving from an average of 10 employees per company in 2016 to an almost doubled size in 2020 (19 employees per company). This leads to incremental growth of employment, even though the number of companies decreases over the forecast period.

To put also this indicator into perspective, we find that this value is higher if compared to FIMPACT results where the number of employees per company started from 7.5 in 2016 to grow to 15 in 2020. Clearly ODINE selected companies are on average bigger

than those selected by FIMPACT and this difference holds true across the observed timeframe.

Figure 25 Number of employees to 2020 by year



Source: IDC, 2017

Momentum

This section deals with the number of users of the selected companies in 2016 and projections to 2020.

The momentum analysis has been divided into 2 parts.

The first one is related to consumers and includes solely B2C companies and companies that are both B2C and B2B (32 companies were considered as B2C or B2C/B2B). For the latter ones, we extrapolated their B2C portion of users.

Similarly, the second part of the analysis deals with B2B companies and B2B/B2C companies for their sole B2B portion (43 companies were considered as B2B or B2C/B2B).

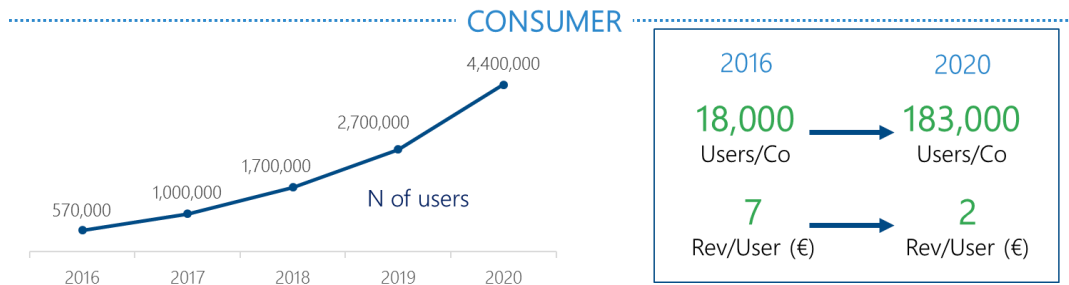
Some companies pertain to both analysis and this differentiation is necessary because the average population of consumer users is at least one order of magnitude higher than the business users' population, so aggregating these numbers would be misleading.

Concerning consumers, in 2016 selected companies had around 570,000 users which are expected to grow to 4.4 million users by 2020. On average, each company starts from around 18,000 users to get to more than 10 times this number by 2020 (183,000). Revenues per user show the classic decreasing trend starting from 7 € in 2016 to 2 € in 2020, when economies of scale are reached or at least improved.

To provide a comparison, FIWARE companies had on average 7,000 users in 2016 to reach an estimated value of 81,000 in 2020. So there is quite a positive difference

which can be explained by the fact that ODINE companies business ideas are based on open data. This often implies the need for these companies to reach a wide users audience. FIWARE companies could instead rely on a more variegatedd range of business ideas while they were not tied to the concept of people using data.

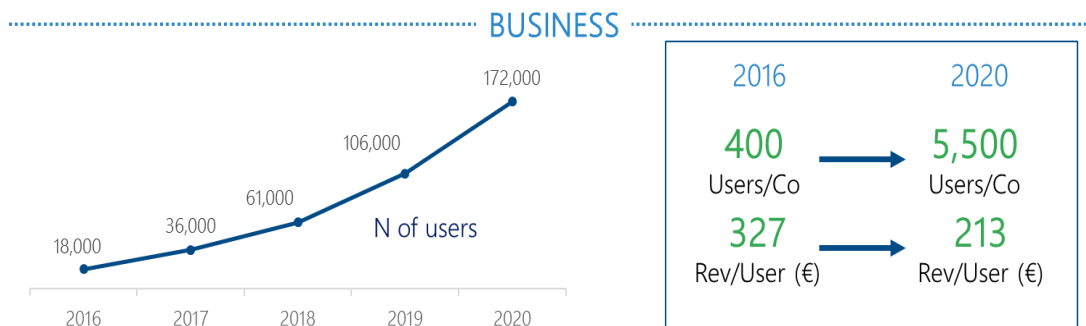
Figure 26 Number of users to 2020 by year: Consumer portion



Source: IDC, 2017

For the business part of this analysis IDC estimates that selected B2B and B2B/B2C companies, starting from 18,000 users in 2016, will reach 172,000 users by 2020. In average terms this means that selected companies will have 400 business users each to reach 5,500 users in 2020. If we compare these numbers to FIWARE results we get the same message we found above as FIWARE numbers are lower (300 average users/company in 2016 which become 2,200 in 2020). Again, revenues per user decrease during the forecast period, moving from 327 € per user to 213 € per user on average.

Figure 27 Number of users to 2020 by year: Business portion



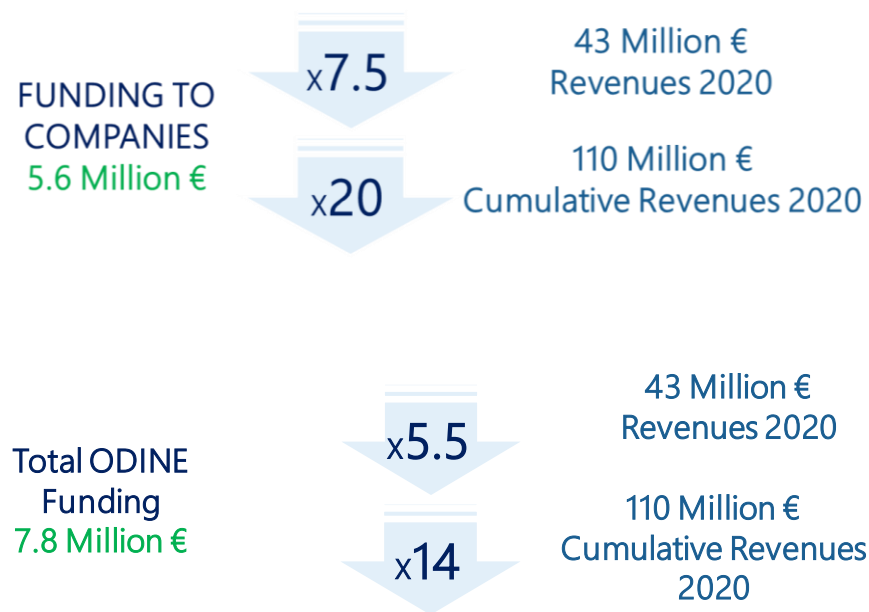
Source: IDC, 2017

6.3.2. Multiplier Impacts

Based on these estimates, the overall return of ODINE investments is shown in the Figure 20 below, considering separately:

- ODINE's total funding to the selected companies, 5.6 €M, compared with their expected revenues, shows a multiplier impact of 7.5 for revenues in the year 2020, or up to 20 if we consider the cumulative revenues produced in the period 2016-2020.
- ODINE's total costs (corresponding to the EC's investment) were 7.8 €M, which multiplied 5.5 times considering only 2020 revenues or 14 times considering cumulative revenues.

Figure 28 ODINE investment: Multiplier impact



Source: IDC, 2017

6.4. The Counterfactual scenario

ODINE companies received funding, services and support and joined a network facilitating contact with potential customers, external investors, partners, suppliers. This section estimates the alternative potential growth trajectory of these companies if they had not participated in the ODINE's accelerator programme.

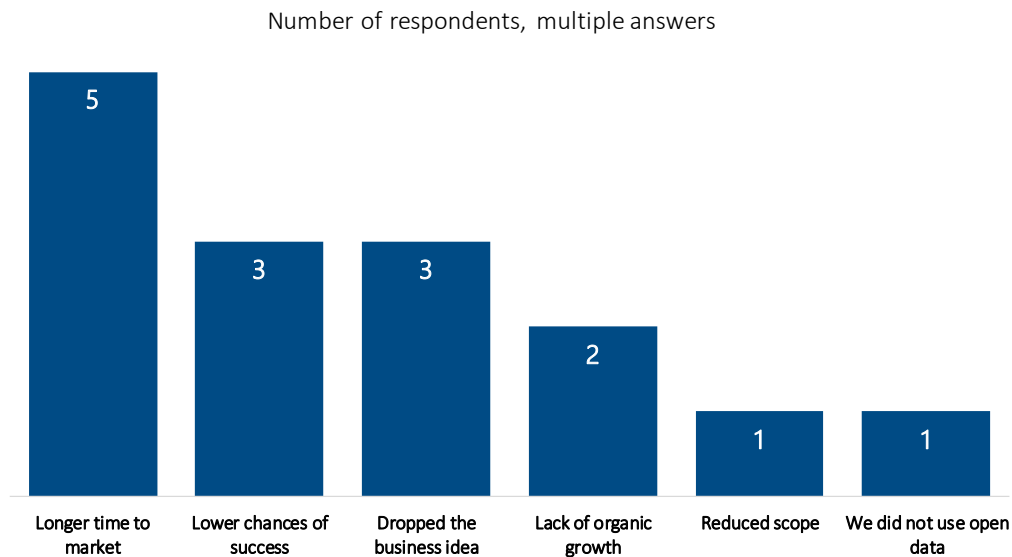
6.4.1. The evidence base

The starting point for the counterfactual scenario was the interviews with 10 companies who applied to ODINE and were not funded. This was their destiny:

- 3 companies dropped the business idea for lack of investments;
- 3 companies developed the project with less features;
- 3 companies launched the product on the market thanks to other investors
- 1 company did not use open data.

As shown by the following Figure, these companies believe that a longer time to market and lower chances of success were the main negative consequences, which is why some of them even gave up in bringing the idea to market (and one dropped the idea to use open data). These considerations match closely those provided by ODINE companies about the benefits gained from the programme, which rank accelerating time to market as the most relevant positive result.

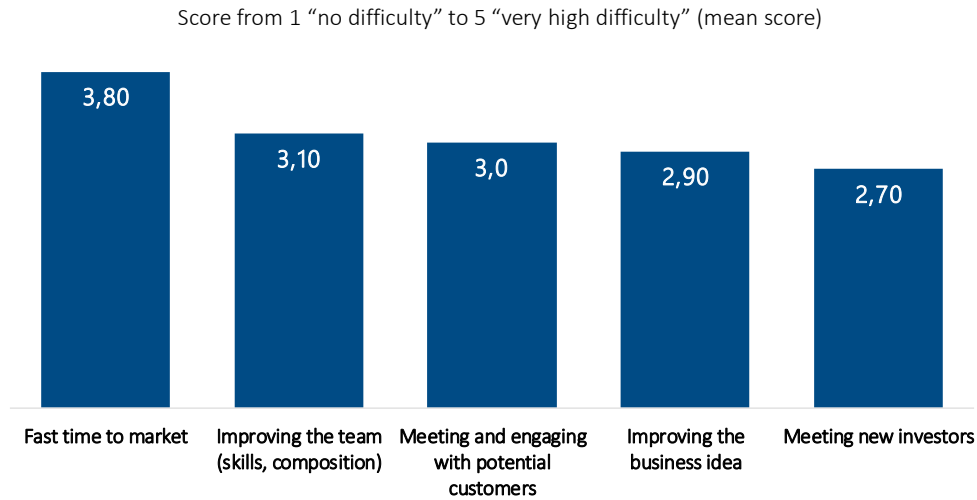
Figure 29 Consequences for companies non-selected by ODINE



N of respondents = 10; Source: IDC for ODINE Survey, April 2017

Similar considerations emerge from the question to the non-funded companies about the main difficulties faced without ODINE (Figure 24) which mention again time to market but underline the difficulty to improve the team in terms of skills and composition as well as engaging with potential customers and improving the business idea. These answers show that the ODINE support through mentoring, advice and networking was sorely missed by the non-funded companies.

Figure 30 Difficulties faced by not-selected companies



Number of respondents = 10; Source: IDC for ODINE Survey, April 2017

6.4.2. Main Assumptions

Building on this analysis, we elaborated 3 main hypotheses for the counterfactual scenario:

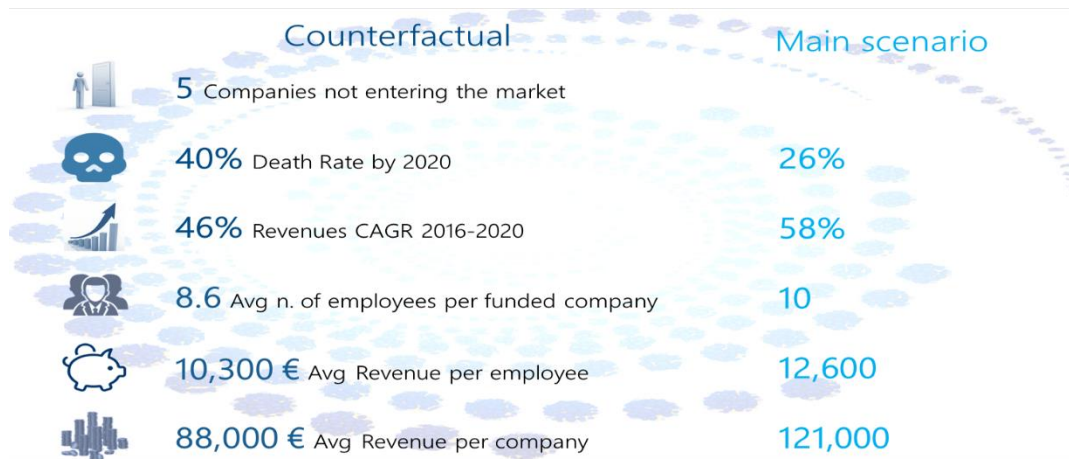
- The lack of ODINE funding would have hurt entrepreneurs especially in those countries where availability of risk capital is historically low;
- Without ODINE most projects would have spent more time chasing potential investors and would have postponed their market entry;
- Also, given the death rates of start-ups published by Eurostat, it is realistic to assume that some of the selected projects would have not existed, without ODINE.

Starting from those data and from other relevant sources of information both internal to IDC and from publicly available literature, IDC quantified the following assumptions for the counterfactual scenario:

- 5 companies would have never entered the market
- Death rate would have been 40% (versus 26% in the main scenario)
- Revenues CAGR for the period 2016-2020 would have been 46% (versus 58% in the main scenario)
- Average number of employees per company in 2016 would have been 8.6 (versus 10 in the main scenario)
- Average revenue per employee would have been 10,300 € in 2016 (versus 12,600 € in the main scenario)

- Average revenue per company would have been 88,000 € in 2016 (versus 121,000 € in the main scenario).

Figure 31 Input of the counterfactual scenario



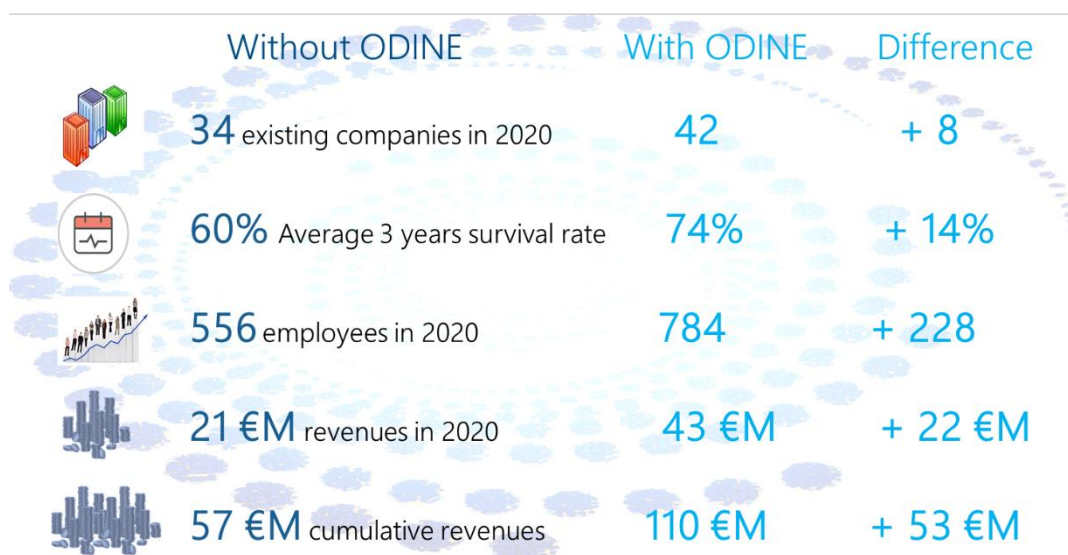
Source: IDC, 2017

6.4.3. Results of the Counterfactual scenario

Finally, IDC elaborated the "without ODINE" 2020 scenario, running the model with the quantitative parameters presented above. The most important results follow:

- Compared to the 57 companies existing in 2016, only 34 would still be alive in 2020;
- These companies would employ 556 employees in 2020 (versus 784 in the main scenario);
- They would generate 21 €M revenues in 2020 (versus 43 €M in the main scenario);
- Overall, cumulative revenues for the period 2016 to 2020 would be 57 €M in the counterfactual scenario, against 110€M in the main scenario.

Figure 24 Results of the counterfactual scenario



Source: IDC, 2017

6.5. Conclusions

In conclusion, the forecast scenario about ODINE's impacts leads to the following results:

- By 2020, 42 healthy enterprises will be on the market, selected from over 1100 applications, and compared to the 57 originally funded;
- These enterprises will generate almost 43 €M of revenues in 2020;
- The average revenues per company are expected to be around 1 €M in 2020, with approximately 19 employees per company corresponding to about 784 jobs created.
- The average revenues per employee will be 55,000 € in 2020, enough for sustainability and profitability;
- The estimated number of users is on average quite high, 183,000 average consumer users per company for B2C companies in the year 2020 and 5,500 business users for B2B companies (including in both companies with a mixed model B2C2B);
- This means that per our model estimates, each euro invested by the EC in the ODINE project will have generated up to 14 euros in cumulative revenues by 2020, which is a very positive impact.
- Compared to the counterfactual scenario, ODINE programme generated additional benefits in terms of 8 more companies by 2020, 228 more jobs and 53 €M additional revenues.

Overall, these data represent a strong positive impact of ODINE's accelerator programme impacts on growth and jobs.

7. General Conclusions

ODINE's main objective, to attract and fund a group of innovative digital companies with original business ideas about Open Data, was achieved. ODINE's 57 funded companies, of which 31 are startups born with the programme, represent a wide variety of value propositions based on either software solutions, or software solutions with some hardware components (IoT solutions), or web-based services.

No significant correlation emerged between specific offerings and growth dynamics, demonstrating that there is not a single way to success for these companies. However, a positive correlation between the level or maturity at country level of the Open Data market (measured by a Capgemini study) and the number of ODINE successful applicants by country points out that a rich open data environment provides favorable conditions for innovators in this field. This means that proactive policies improving the usability and availability of open data sets are likely to stimulate private initiatives for the exploitation of data in a positive virtuous cycle.

ODINE's programme was well appreciated by the participants, who gave it high scores in terms of value added, with the highest benefits concerning **accelerating time to market, improving the business idea, and improving the team skills**. However, the most relevant benefit was the funding. Symmetrically, the companies who did not get into the programme complained of difficulties in getting funding, took a longer time to market and some of them dropped the business idea. This confirms ODINE's positive impact on the funded companies.

ODINE's impact on the growth perspectives of the funded companies was relevant, resulting in an estimated 110 €M of cumulative revenues in the period 2016-2020, plus 784 jobs created. Average revenues per company by 2020 should be around 1 €M, corresponding to 55,000 € of revenues per employee, sufficient for sustainability. This means that per our model estimates, each euro invested by the EC in the ODINE project will have generated up to 14 euros in cumulative revenues by 2020, which is a good multiplier.

The counterfactual scenario shows that due to longer time to market, greater difficulty in getting funding, and higher failure rates, without ODINE only 34 companies would have survived to 2020, generating half as much cumulative revenues and 228 less jobs than in the main scenario.

Participant companies show growth rates of revenues, employment and users aligned with main accelerators and better than the average performance of the 1000 companies funded by the FIWARE accelerator program. They also show a good capability to collect additional funding, even though many are still in the early phase of development.

ODINE succeeded in inspiring and promoting a range of new business ideas highlighting the value added of Open Data in the data market. Each of the 57 startups and SMEs leverage 2 or more types of Open Data, with a strong concentration of interest in geospatial/ mapping and environmental data. We found that startups use a wider variety of Open Data than young or mature companies in the group, playing the role of **experimenters**, combining different typologies of Open Data for their solutions.

The analysis of business plans also shows generally a good performance in the implementation and also the influence of ODINE's mentors in helping several companies in redirecting and improving their business idea or business plan.

The variety of business ideas developed by the ODINE companies naturally compose an Open Data ecosystem covering all segments of the data value chain, with a stronger presence in the more innovative components. A classification developed by IDC based on their value proposition and target market highlights how these companies are contributing to the development of the data value chain and innovative ecosystems, helping the European industry to adopt data-driven innovation. More than half of the group have a strong vertical focus aiming for the emerging needs of new and traditional sectors. Another priority of ODINE companies is the emerging sustainable or low carbon economy, with several companies focused on energy saving, environmental monitoring, smart mobility.

Overall, we can see a common thread running across many of these companies aiming for what ODINE calls the triple bottom line, that is achieving economic, social and environmental benefits.

Finally, these results will feed into and be used to improve the accelerator and startup programmes by Wayra and ODI.

8. Appendix

8.1. IDC for ODINE Survey questionnaire

Section S. Screening questions

Number	Question	Answer	List of answers
S.1	What is the name of your company? PREFILLED		To be added to the data - from the provided list
S.2	Have you been selected by ODINE acceleration program? (PROGRAM FROM LIST)	Single Choice	yes/no
S.3	Which cohort were you part of? PREFILLED * Ask only if S.2=Yes	Single Choice	To be added to the data - from the provided list Cohort 1, Sep-2015 to Feb 2016 Cohort 2, Nov-2015 to Apr 2016 Cohort 3, Jan 2016 to Jun 2016 Cohort 4, Mar 2016 to Aug 2016 Cohort 5, May 2016 to Oct 2016 Cohort 6, Jul 2016 to Dec 2016 Cohort 7, Sep 2016 to Feb 2017 Cohort 8, Nov 2016 to Apr 2017

Section O. Profile

	Question	Answer	List of answers
0.1	In which country is your headquarter located?	Single Choice	Provide list of countries
0.2	In which other countries do you have offices, if any?	Multiple choice - select all that apply	Provide list of countries
0.3	What is the name of the business idea/company for which you applied to ODINE?	Free text	
0.4	What is the main product/service you provide?	Single Choice	App software solution hardware and

			software solution portal web service IT service business service other (specify)
0.5	How many full time equivalent employees do you employ?	Integer	
0.6	If don't know to question 0.5 offer granular ranges	Single Choice	1, 2-4, 4-9, 10-14,15-24 25-49, 50-99, 100-249 250-499, 500-999, 1000+
0.7	When was your company founded?	Year	
Section 1. Business performance			
	Question (concerning the business idea funded by ODINE / or submitted to ODINE)	Answer	List of answers
1.1	Which are the revenue flows in your Business Model? *Ask only if S2="No"	Multiple Choice	Choose all that apply: A. Single payment B. Subscription fee C. Repeated sales of personalised products/projects D. Attracting customers to paid-for products or services you offer E. Funded by grant F. In development G. Lead generation for paid products or services you offer H. Featuring paid-for advertising I. Prefer not to share L. Other - specify
1.2	Through which channel do you/will you market your product/service?	Multiple choice	Select all appropriate from list: A App-stores B E-mail/Phone-call marketing

				C Other external websites (including social media) D Personal website E Public tenders notices F Sales agents G Shops
1.3	What were your total revenues in your last financial year?	Thousand of euros or No revenue		
1.4	When will you start to generate revenues ? *Ask if answer to question 1.3 was "No revenue"	Single Choice		Choose one: A. During the current year B. in the next year C. In the next two years
1.5	What are your estimated revenues for the first year of sales? *Ask if answered to question 1.3 was "No revenue"	Euros		
1.6	What is your average expected growth rate of your revenue for the next three years (up to 2020)?	Percentage/year	2018--%-- 2019--%-- 2020 --%--	
1.7	Do you generate revenues from the product/service developed with ODINE? * Ask only if S.2=Yes	Single choice	Yes/No	
1.8	What is your average expected growth rate of your revenue (only for the product/service developed with ODINE) for the next 3 years? * Ask only if S.2=Yes	Percentage/year	2018--%-- 2019--%-- 2020 --%--	

Section 2. Financials

	Question	Answer	List of answers
2.1	Is your company self-sustainable and profitable?	Single choice	Yes/No/No profit model

2.2	When do you expect to start making a profit/ achieve a positive operative margin? *Ask if answered No to question 2.1	Year	
2.3	How much investment have you received to date, since applying to the ODINE programme (excluding ODINE funding, if any)	Value - could be 0	Euro value
2.4	Which are your main sources of investment? *Do not ask if answered 0 to question 2.3	Rank only those that apply Rank by relevance from the investor with the largest share/ providing the largest amount of funding (1)	Entrepreneurs Venture Capital Business Angel Other Accelerators Private investors EU funding programme National funding programme
Section 3. ODINE			
	Question (concerning the business idea funded by ODINE)	Answer	List of answers
3.1	How valuable do you consider the services received from ODINE? * Ask only if S.2=Yes	Check all those which apply and score from 1 (very low value) to 5 (very high value) Allow option 'did not participate/receive during ODINE incubation'	Funding Training, Advise, Mentorship Networking with potential partners Networking with potential investors Networking with potential customers Access to open data industry Support services (infrastructures, PR, perks packages)
3.2	Which have been the most important benefits of participation in ODINE	Score from 1 very low importance to 5 very high importance	Meeting new investors Improving the business idea Accelerating time to market

	programme? * Ask only if S.2=Yes		Improving the team (skills, composition) Meeting and engaging with potential customers Other, specify
3.3	What do you think would have happened without ODINE? * Ask only if S.2=Yes	Multiple choice	Select all appropriate from list: No change Longer time to market Lower chances of success We would have dropped the business idea We would have looked for another accelerator programme We would not have used open data Other, specify

Section 4. Momentum

	Question	Answer	List of answers
4.1	Who are your users/customers? *Ask only if S2="No"	Pick one	Organisations Individuals and organisations
4.2	How many users are currently using your product/service?	Number (Allow not applicable)	Consumers Businesses
4.3	How many customers do you have?	Number (Allow not applicable)	Consumers Businesses
4.4	What is your average expected growth rate of active users for the next three years (up to 2020)? - if applicable	Percentage/year (Allow not applicable)	2018--%-- 2019--%-- 2020 --%--
4.5	Which social media channels do you use for your business?	Multiple choice	Facebook Linkedin Twitter

			Other None of the above
4.6	How many followers do you have on social media? (Answer only for the social media selected in 4.5)	Number (Allow not applicable)	Facebook _____ — Linkedin_____ — Twitter _____ Other _____
4.7	What is your average expected growth of social media users in the next 3 years?	%	average growth rate 2017-2020
4.8	Did you develop patents, IPRs or scientific publications about your new idea?	mark all those which apply	patents IPRs Scientific publications

Section 5. Open data

	Question	Answer	List of answers
5.1	Which type of open data do you use? Please select all that apply *Ask only if S2="No"	Multiple Choice	Agriculture & food Business Consumer Demographics & social Economics Education Energy Environment Finance Geospatial/Mapping Government operations Health/Healthcare Housing International/Global development Legal Manufacturing Public safety

			Science and research Tourism Transportation Weather
5.2	How do you use open data to create value? *Ask only if S2="No"	Multiple Choice	Data aggregation Data analytics Data visualisation Data combination/mashup Data anonymization Data cleaning Data enrichment We do not perform any operations on data Data validation
5.3	How important is open data for your business model?	Pick one	score from 1 (very low importance) to 5 (very high importance)
5,4	What are the main qualitative and social benefits generated by your use of open data for your customers/users?	Check all that apply	Improve transparency Improve democracy Improve access to data for special interest groups Improve quality of life Improve quality and/or efficiency of healthcare services Improve quality and/or efficiency of travelling by public transport means Improve quality and/or efficiency of other public services improve effectiveness of the right to access public administration data Improve completeness of data Improve the environment Other (please specify)
5.5	How many Open Data databases do you use?	Number	

5.6	From which countries?	Multiple choice	Country list, pick all those that apply
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Section 6. IF NO TO SCREENING QUESTION *Ask only if S2="No"

	Question	Answer	List of answers
6.1	What consequences have resulted from not being funded by ODINE? *Ask only if S2="No"		No consequence Longer time to market Lower chances of success We dropped the business idea We did not use open data Lack of organic growth Other, specify
6.2	How difficult was it for you to achieve the following? *Ask only if S2="No"	Score from 1 no difficulty to 5 very high difficulty	Meeting new investors Improving the business idea Fast time to market Improving the team (skills, composition) Meeting and engaging with potential customers Other, specify
6.3	Were you able to join another accelerator programme? *Ask only if S2="No"		Yes, No If Yes, ask name
6.4	(if yes to 6.3) Which services did you receive and how valuable you consider them? *Ask only if S2="No"	Check all those which apply and score from 1 (very low value) to 5 (very high value)	Funding Training, Advise, Mentorship Networking with potential partners Networking with potential investors Networking with potential customers Access to open data industry Support services (infrastructures, PR, perks packages)

6.5	(if yes to 6.3) Which have been the most important benefits of participation in accelerator XX programme? *Ask only if S2="No"	Score from 1 very low importance to 5 very high importance	Meeting new investors Improving the business idea Accelerating time to market Improving the team (skills, composition) Meeting and engaging with potential customers Other, specify
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Source: IDC for ODINE Survey, April 2017

8.2. Description of non-funded companies

Table 7 Description of 10 non-funded companies

Company name	Round Applied	Headquarter	What is the main product/service you provide?	N of employees	Year funded
Ascora - OpenRapex	Cohort 5	Germany	software solution	30	2007
Bliksem Labs	Cohort 1	The Netherlands	software solution	2	2013
Block Dox	Cohort 4	United Kingdom	hardware and software solution	4	2013
Civio Fundación Ciudadana Contrata.pub	Cohort 1	Spain	software solution web-based service	8	2012
Customer Insight Innovations	Cohort 8	Ireland	software solution	4	2015
Lexical Computing	Cohort 6	Czech Republic	web-based service	10	2003
MobyGIS Srl - Mysnowmaps	Cohort 6	Italy	software solution	3	2014
Qreach ltd - Intouch.com	Cohort 8	Ireland	software solution	8	2015
Synapta - ContrattiPubblici.org	Cohort 6	Italy	web-based service	3	2016
Urban Clouds - Appmosfera	Cohort 5	Spain	hardware and software solution	14	2012

Source: IDC 2017

- **Ascora OpenRapex:** Independent Software Vendor that provides software apps in Germany; applications include desktop applications as well as web and mobile apps. As such, Ascora is very skilled in creating consumer-driven software solutions, low error rate and adaptive system requirements.
- **Bliksem Labs:** the project is about a turn-key solution to interact with existing and prototype new **mobility** propositions using a multi-touch interface. They propose a “multi-touch journey planner” for input and visualisation.
- **Block Dox:** BlockDox technology uses the very latest innovations in the **Internet of Things**, as well as machine and deep learning data science to drive **building performance**. They process data collected from micro-sensor technology inside buildings. BlockDox is also an interoperable platform.
- **Civio, Fundación Ciudadana - Contrata.pub:** the project develops tools that both reveal the civic value of data and promote transparency. They investigate and generate relevant information about public governance to empower citizens and improve the accountability of public institutions.
- **Customer Insight Innovations:** software provider for different markets (retail, banking, insurance, telecom, healthcare, government, logistics, food manufacturing) and purposes (understanding customers, strategic planning, market planning, performance analysis).
- **Lexical Computing:** web portal for academic writing based on existing open access academic texts. The aim of is to provide a web service offering academics to consult vast amounts of existing texts using the backend database system used in Sketch Engine, providing examples of word or phrase usages, most significant patterns a word or phrase occurs in, as well as semantically related words such as synonyms, together with automated terminology extraction system.
- **MobyGIS Srl - MySnowMaps:** it provides an app and web service combining snow and weather information for excursions on the mountains.
- **Qreach ltd - Intouch.com:** Intouch is a web-based solution where customers can share and update their contact details with all service providers and automatically propagate the updates to the companies of their choice. They provide businesses with novel tools to rapidly turn visitors into registered users, eliminate customer information decay and capture related insights. Users on the other hand are given

web and mobile apps that act as their single-point-of-contact, let them search and connect to their favorite companies and share their information.

- **Synapta Srl - Public-Contracts.io:** semantic search engine about the market for goods and services purchased by Public Administrations, so to enhance business opportunities for suppliers, to increase government transparency, and to vehiculate civic engagement into better open data.
- **Urban Clouds, S.L. - Appmosfera:** Appmosfera is composed of a smartphone application, algorithms and air quality sensors that provide realtime information about the healthiest cycle routes and locations throughout the city. The anonymously generated data is aggregated to detect sources of pollutants and provide accurate Smart Routes. Appmosfera provides valuable data to make decisions to improve Air Quality



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