D2.3 Ex Ante Impact Assessment and Forecast

Version 1.0

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IDC Analyze the Future IDG bluegreen IIMC Jožef Stefan Institute Sustainable Finance & Consulting FUTURE INTERNET PPP

Executive Summary

This public deliverable is the Ex Ante Impact Assessment and Forecast produced by FI-IMPACT project. It provides insights into FI-PPP Phase III funded initiatives from calls 1, 2, and 3, analyzing 725 initiatives selected and funded by 15 Accelerators at August 31st 2015. This analysis based on aggregated results provides interesting insights into the market focus, technology coverage, selection models and activities that the Accelerators support. Over 6,500 applications were received by the Accelerators, with a particularly strong response from SMEs from Spain, Italy and Germany, confirming the data from the first release of our mapping analysis.

FI-IMPACT performed a KPI measurement on 472 funded initiatives up to November 3rd 2015 with the aim to assess the readiness of the Phase III initiatives and their potential performance. The sub grantees' performance were measured on five areas: Innovation, Market Focus, Feasibility, Business and Consumer Market Needs. The 472 sub-grantees perform moderately well on average for the Innovation Focus, Market Focus and Market Needs KPIs, while the level of performance for the Feasibility KPI is lower and could indicate a potential weak point in their path towards commercial success.

In our assessment we also consider whether these initiatives are focusing on the achievement of social impacts through their solutions: the results show that for many of them this topic is not their "number one" priority. Generally, their main social focus is about improving the quality of life, provide better access to information and data, and improve general wellbeing (health and fitness) and e-inclusions.

Building on the data collected during the first year of the project, this deliverable presents an analysis of the market where these companies are or will be soon operating, including an estimate of their revenues projected to 2020 and a forecasting of their potential user population. From 1000 funded initiatives, by the year 2020 there are likely to be approximately 500 new, or newly grown companies in Europe leveraging FIWARE to gain revenues of 279 €Million.

To explore the spectrum of future trends, we built three scenarios: if many of these companies match demand needs, revenues could be as high as 336 € Million (Optimistic scenario); if many have made wrong decisions, they could be as low as 203 € Million (Pessimistic Scenario). There could be another scenario: one superstar company with worldwide success would be enough to add more than 250 €Million to these estimates. The data is suggesting that compared to the 80 €Million investments the FI-PPP Phase III will have a valuable return on investment.

This deliverable presents the methodological approach that FI-IMPACT is implementing for researching and authoring a number of FIWARE Success Stories as part of the FI-PPP Programme level impact assessment being undertaken.

This public report is divided into 6 sections: a general introduction to the report is followed by the mapping analysis (Chapter 2). The Phase III initiatives' performance measurement is presented in Chapter 3; their market analysis and projections to 2020 is presented in Chapter 4. Chapter 5 focuses on the methodological approach to identify the High Business Potential initiatives. Chapter 6 presents the key findings of the overall analysis, the conclusions and the next steps. The deliverable includes also five Annexes: a methodological note on the KPIs; additional tables and figures not included in the main

report; the IDC Software Taxonomy used for the classification of the funded initiatives' solutions and for the market model; and finally the Impact Assessment Questionnaire.

Disclaimer

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1. Introduction

1.1. Scope of the Deliverable

This deliverable has the following objectives:

- Present an update of the Mapping Analysis developed in May 2015:
  - Overview of the results of the Accelerators' calls;
  - Analysis of the organisations presenting those projects which were selected Overview of the selected projects by country of origin, market focus, FIWARE Enabler, use of innovative ICT tools, type of technology;
- Describe the market context for the FI-PPP Phase III funded initiatives, including the size of the markets and key market trends for the areas where the funded initiatives aim to compete by 2020
- Present the estimate of the potential demand targeted by the solutions developed by the FI-PPP Phase III initiatives by 2020
- Provide the estimates of the revenues of funded initiatives and the number of users of the funded initiatives, forecasted at 2020
- Present a preliminary assessment of the performance of the funded initiatives, on the basis of the identified Key Performance Indicators.

1.2. Document Structure

This deliverable is structured in 6 sections plus an Annex, as follows:

- Chapter 1 presents an introduction to the report, highlights its main objectives and the intended audience;
- Chapter 2 presents an update of the results of the mapping of the FIWARE ecosystem and the 725 proposals selected by 15 Accelerators after the First, Second and Third Calls of FI-PPP Phase III. The results are based on the data collected by FI-IMPACT through the Impact Assessment Questionnaire at August 31st 2015;
- Chapter 3 presents the preliminary results of the FI-IMPACT KPIs assessment based on the outcomes of the Impact Assessment Questionnaire;
- Chapter 4 presents the outcomes of the market model developed by IDC, FI-IMPACT's coordinator, and based on the Impact Assessment Tool and on IDC primary research. This chapter provides the market context for the funded initiatives as it analyzes the size of the markets and their trends for the areas where the funded initiatives aim to compete; then it focuses on the estimates of the revenues of funded initiatives and it also presents an estimate of the number of users of the funded initiatives;
- Chapter 5 presents the preliminary results of the assessment carried out by FI-IMPACT to identify potential "FIWARE Success Stories" from those sub-grantees funded by FI-PPP Phase 3 Accelerators;
- Chapter 6, finally, presents the key findings of the analysis and draws the main conclusions of the overall assessment;
- The Annexes include extra detailed materials from the deliverable's chapters.

1.3. Data Collection

The data presented in this deliverable were collected in one database from two different sources, in the following way.

1. **Mapping data**, based on information about funded initiatives collected from the accelerators. This was used to compile the mapping analysis. We have regularly been in touch with the accelerators, which at the end of their selection or review processes provided us with data about the granted initiatives. The information we received allowed us to create an overview of the organizations partaking in the FI-PPP Phase III. It was useful to map successful projects and look at information such as the country of origin, number of employees, years of experience, and so on. We read carefully the abstracts we received in order to categorize the initiatives and assigned them one or multiple target industries. We reviewed their technology-orientation by examining whether they are offering a software or hardware solution or a non-IT service. We carried an analysis to see if an initiative is using one or multiple IDC's 3rd platform pillars (Cloud, Social Media, Big Data, and Mobile), is a Smart-City related project, or is using an IoT technology. After cleaning all the data, we created an excel file called "global database", where we stored the output of our analysis.

2. **Impact assessment survey data**, which includes specific information about the entry strategy and approach to the market of the sub-grantees. We created a detailed survey so we could gather information and gain a deeper knowledge of the business models and potential impacts of the sub-grantees. We submitted this survey only to organizations whose projects have received funds. We called this survey the "Impact Assessment Survey" as each sub-grantee had the chance to assess themselves and the potential outcomes of their initiatives. We received responses from 472 out of 725 selected projects at November 3rd 2015. Through this survey we had the chance to bridge the gaps in the global database by integrating it with data from the IA tool.

2. Mapping of FI-PPP Phase 3 Selected Proposal

2.1. Introduction

This chapter contains an insight into FI-PPP Phase 3 funded initiatives from calls 1, 2, and 3 and is an updated version of the former deliverable D2.2.

FI-IMPACT has been using the collected data to map these initiative against some identified common characteristics, and across this chapter provides a comprehensive view of their features, such as country of origin, team size, and target industry sector. In addition, relying on the available IDC data on the real market trends, we provide comparisons and insights on the vertical markets and technology focus of these projects. At first we analyzed the overall bunch of applications submitted to the 16 Accelerators, as shown by the figure below.

As of August 31st 2015, the 16 accelerators received in total 6,571 submissions. Of these, 725 projects have been selected and received funds from accelerators since the implementation of the FI-PPP.

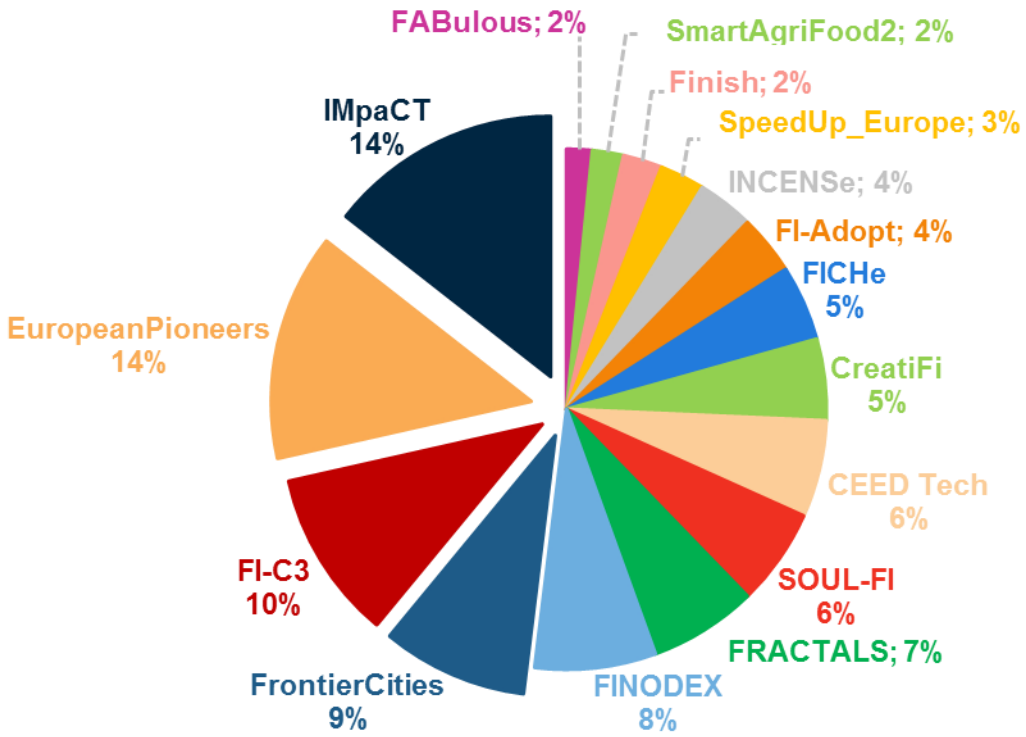
Looking at the submission rates shown in the figure below, 48% of all the proposals were submitted to the following Accelerators: IMpaCT (14%), EuropeanPioneers (14%), FI-C3 (10%), and FrontierCities (9%):

- **IMpaCT** received 949 applications in two calls (14% of overall applications) and stands out as the main accelerator applicants are submitting projects to;
- **EuropeanPioneers** received 925 applications in one call (14% of all applications);
- **FI-C3** received 689 applications in one call (10% of overall applications).

Together, they received 2,563 submission, meaning that two of five participating SMEs have submitted projects to the above-mentioned accelerators.

However, when we look at the numbers of submitted proposals, we have to take into account that:

- Accelerators may differ in the number of calls for applications they have planned in their programmes. Based on this, the overall number of submissions they receive may vary considerably;
- Accelerators may also follow different approach to select their projects (funnel approach vs. step approach): the ones applying the funnel approach, for example, launched only one call for applications.



n = 6,571; all submitted proposals

Source: FI-IMPACT 2015, based on data provided by accelerators

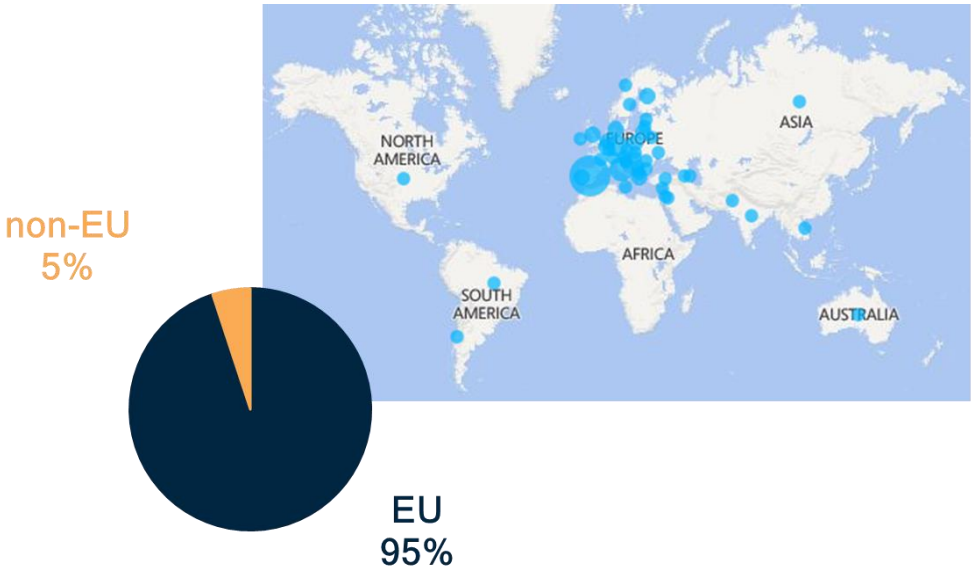
Figure 1 Submitted Proposals by Accelerator, % (16 accelerators)

The world map below shows from which countries the Accelerators received most of the applications. The majority of proposals were submitted by European Union-based organizations (95%), while only 5% of applicants are operating outside the EU. This means that the FI-PPP Phase 3 has generated global engagement and participation, but remains strongly attractive mainly for European organizations. This fact may also suggest that FI-PPP Phase III is perceived as one of the most important seed funding source in Europe.

FI-IMPACT analyzed 2,824 proposals from the EU member states, and 151 proposals from outside EU.

More specifically, the following map illustrates the country of origin of the initiatives that accelerators received, showing that three countries received almost 50% of all applications:

- **Spain** submitted 747 projects, accounting for 25% of all applications;
- **Italy** submitted 328 projects, accounting for 11% of all applications;
- **Germany** submitted 296 projects, accounting for 10% of all applications.



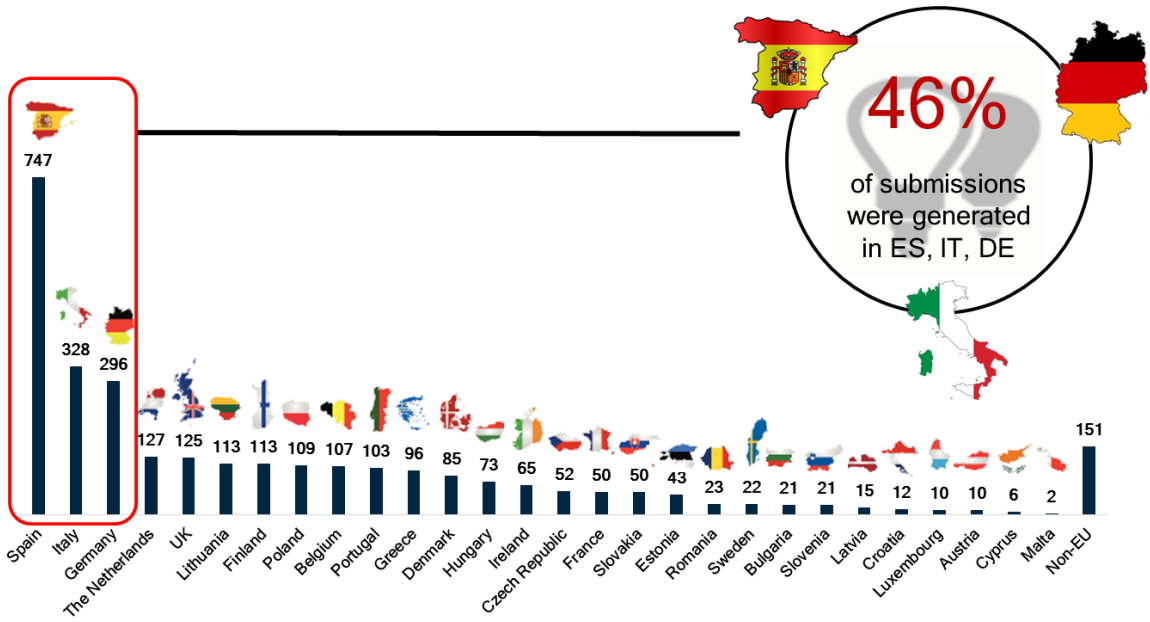
n = 2,975; all available submitted proposals which provided country information

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 2 Applications generated inside and outside the EU territory, % (15 accelerators)

One in three applications (36%) were originated in one of the two Southern European countries. Considering the countries' population rates compared to the number of submitted proposals, among the biggest member states it can be noticed that a small amount of applications were issued from France.

The following bar explains in detail where projects come from. Excluding Spain, Italy, and Germany, one third of applications were submitted in the Netherlands, UK, Lithuania, Finland, Poland, Belgium, Portugal, Greece, and Denmark, where SMEs submitted in total 978 projects (33% of all submissions).

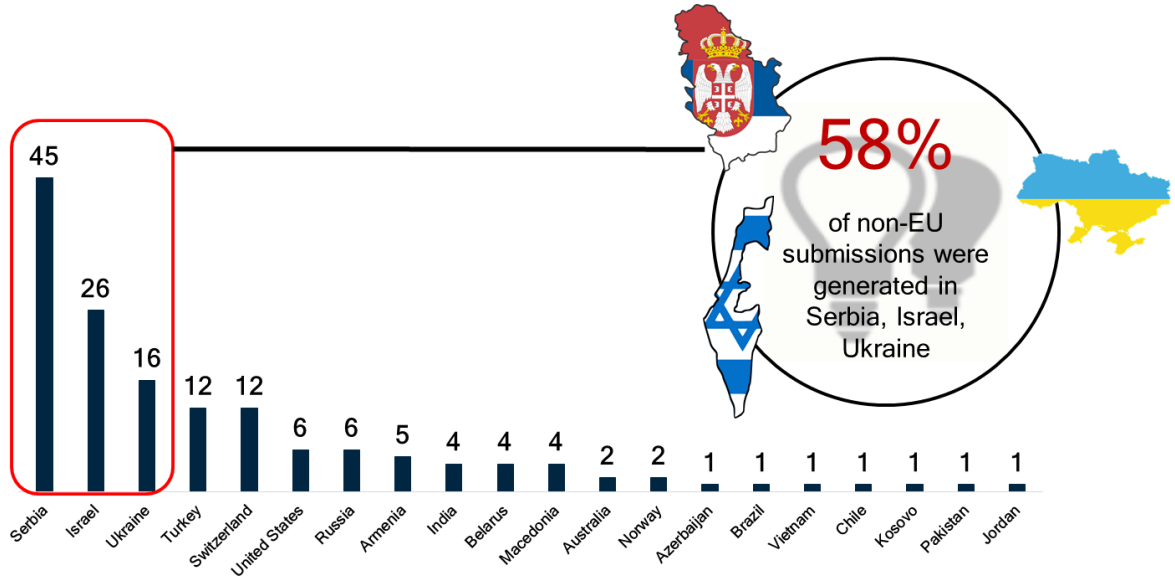


n = 2,975; all available submitted proposals which provided country information

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 3 Applications by country of origin (15 accelerators)

Marginally, 151 applications were originated in an extra-EU country. Taking a look in more detail, the bar graph outlines that the non-EU countries which received the largest amount of projects from SMEs are Serbia (45), Israel (26), and Ukraine (16).



n = 151; all available submitted proposals which provided country information

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 4 Origin of extra-EU submitted proposals (15 accelerators)

To sum up, FI-IMPACT found that:

- Submissions have significantly grown by 57% since March 2015. In fact applications grew from 4,198 to 6,571, meaning that the willingness to participate in FI-projects is increasing and FIWARE continues to attract SMEs;
- The majority of the applications were generated within the EU territory (95%), meaning that although the reach of FIWARE is global, European SMEs are the most interested in accessing the FIWARE platform. This might be due to weak communication and promotion of FIWARE in extra-EU countries and / or to the existence of other more competitive sources of project funding in those countries
- The majority of the applications were generated in Spain, Italy, and Germany.

2.2. Comparative analysis by accelerator

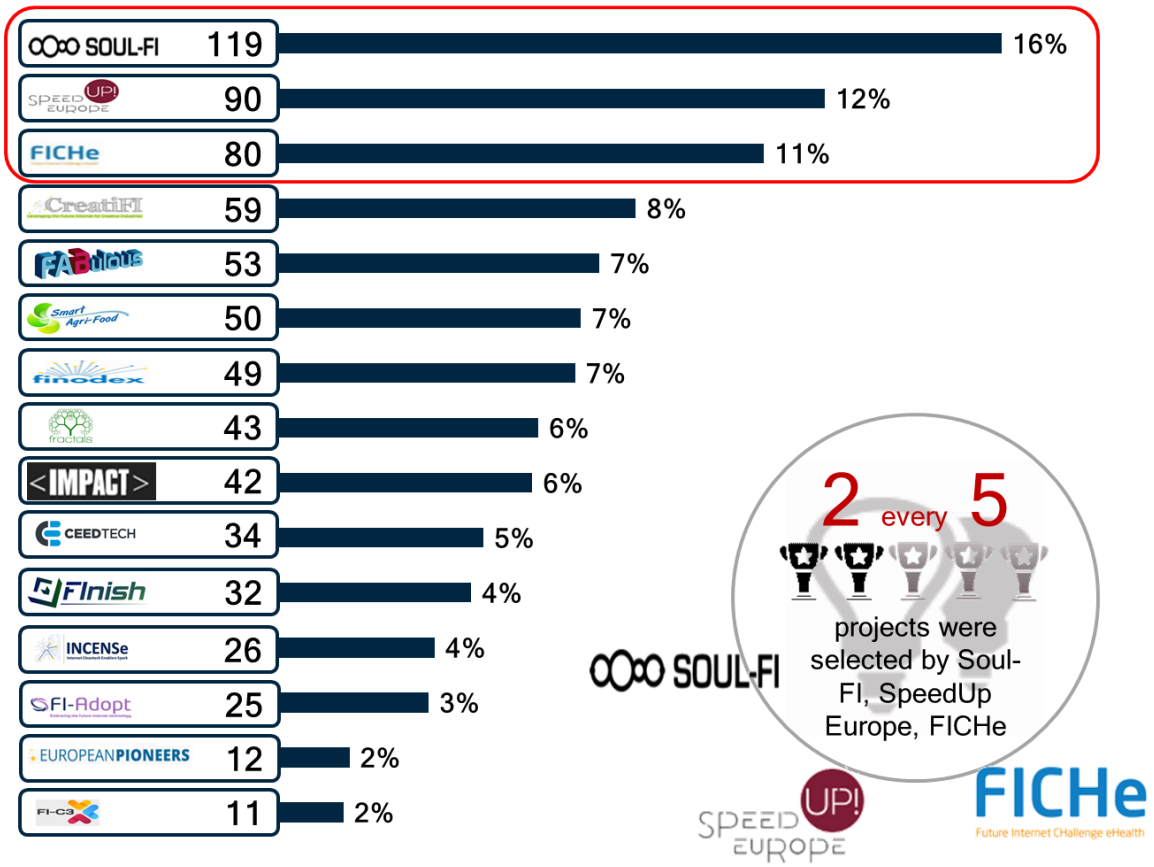
This section provides an insight into funded initiatives whose data has been made available to FI-IMPACT. The number of funded initiatives is 725 as of August 31st, 2015 and includes projects that have been granted funds in the 1st, 2nd, and 3rd call, as shown in the table below. FI-IMPACT received information from 15 accelerators. Only one accelerator (FrontierCities), which has selected 21 projects so far, has not provided information on granted initiatives, so it is excluded from the analysis.

Funded initiatives	Accelerators which provided information	Accelerator	Total	Call
725	15	SOUL-FI	119	1st, 2nd, and 3rd call
		SpeedUp Europe	90	1st call
		FICHe	80	1st and 2nd call
		CREAtiFi	59	1st call
		FABulous	53	1st call
		SmartAgri Food2	50	1st call
		FINODEX	49	1st call
		FRACTALS	43	1st call
		IMpaCT	42	1st and 2nd call
		CEED Tech	34	1st call
		Finish	32	1st and 2nd call
		INCENSe	26	1st call
		FI-Adopt	25	1st call
		European Pioneers	12	1st call
		FI-C3	11	1st call

Source: FI-IMPACT 2015, based on data provided by accelerators

Table 1 Funded initiatives, by accelerator and by call (15 accelerators)

In this phase, among the 725 funded initiatives which provided data to FI-IMPACT, SOUL-FI is the accelerator that selected more projects compared with others (16%). SpeedUp Europe (12%) and FICHe (11%) also contributed to accelerate a significant amount of projects.



n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 5 Funded initiatives, by accelerator, % (15 accelerators)

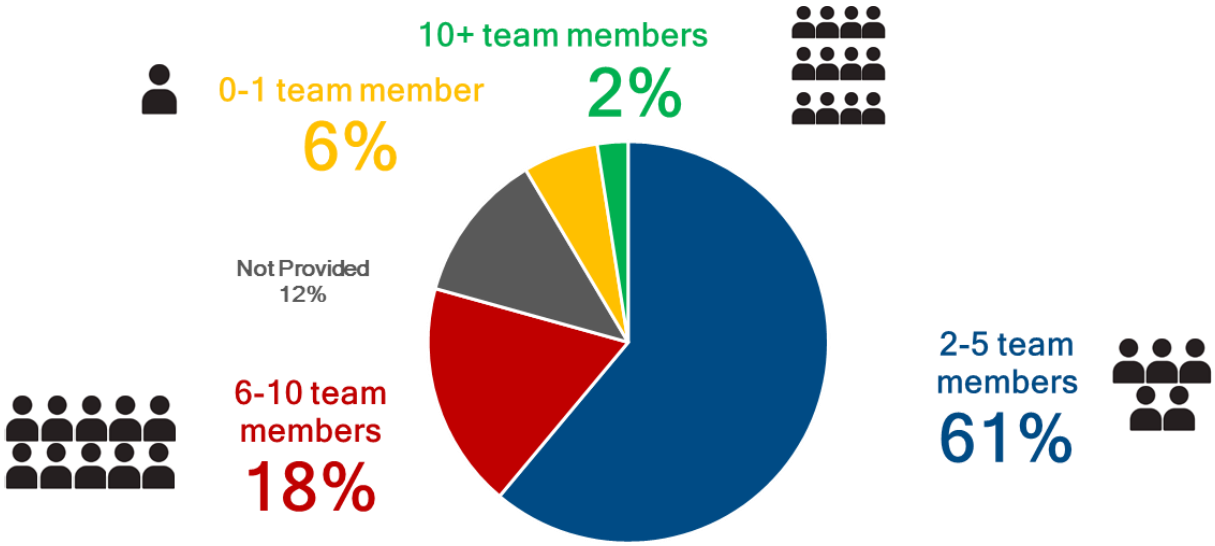
Each accelerator established its own areas of focus and funded initiatives according to its own criteria. In this context:

- **SpeedUP! Europe** focuses on the areas of agribusiness, smart cities and clean tech.
- **FICHe** (Future Internet CHallenge eHealth) focuses on the eHealth domain.
- **CreatiFI** focuses on European creative industries and addresses the domains of media & content and smart cities.
- **FABulous** focuses on 3D printing initiatives in the field of design manufacturing, logistics and content-based services.
- **SOUL-FI** initiatives focuses on real time information, open and crowd-sourced data and on the Internet of Things (IoT) with initiatives addressing the domain of smart cities and sustainable mobility.
- **SmartAgri Food2** initiatives focus on farmers and agricultural producers. Projects are expected to address one or more of three farming subsectors (Arable Farming - large-scale, Horticulture, Livestock Farming).
- **Finodex** focuses on a wider range of business sectors: environment, health, transport, finance and others. Applications are open to European SMEs, individuals or groups of individuals up to four members.

- **INCENse** (INternet Cleantech ENablers Spark) focuses in the European energy sector selecting SMEs and web entrepreneurs intending to develop Internet-based technologies in the Clean Tech sector, focusing on the following categories: Smart Grids, ICT, Automation Solutions, Energy Efficiency, Energy Storage, Electric Mobility, and Renewable Generation.
- **IMPACT** focuses on mobile technologies such as mobile apps or business models based on mobility in the communications areas, social, video, media & advertising; design, education, entertainment, ecommerce, peripheral devices, content, connected TV, infrastructure, security, productivity, finance, smart cities and social networks, among others.
- **FI-ADOPT** focuses on corporate and citizen's learning/training, healthy behavior shaping and social integration purposes. They will employ rich media, social networking, and mobile apps and gaming principles.
- **Finish** will support software applications for supply chains of perishable products such as food or flowers.
- **EuropeanPioneers** focuses on the field of media in Europe and on the development of software applications enriching the media business landscape and improving media usage for end-customers as well as media suppliers. Teams must have a minimum of two members.
- **FI-C3** focuses on three business domains: smart territories (smart city guides; smart city platforms; smart city services), media & contents (multimedia augmented reality; transmedia/cross media devices; video games), and care & well-being (smart home; indoor position; personalized connected media).
- **FrontierCities** will contribute to identify high potential use cases for smart mobility applications, to provide on/offline support to ensure that SMEs are aware of cities interests, to provide technology advice and support to speed up application development, and to provide a full-scale market uptake and commercialization support program.

2.3. Comparative analysis by company size and experience

Focusing on the team dimension, FI-IMPACT found that the majority of the funded initiatives are run by team projects rather than individuals. Most of the initiatives (61%) involve from two to five members. Projects involving between six and ten individual have also a significant share (18%) compared to those less team-oriented involving one individual (6%). Proposals with a large number of individuals (exceeding ten team members) are marginal and represent only 2% of all the projects. 12% of the initiatives have not yet provided information about their team size.



n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

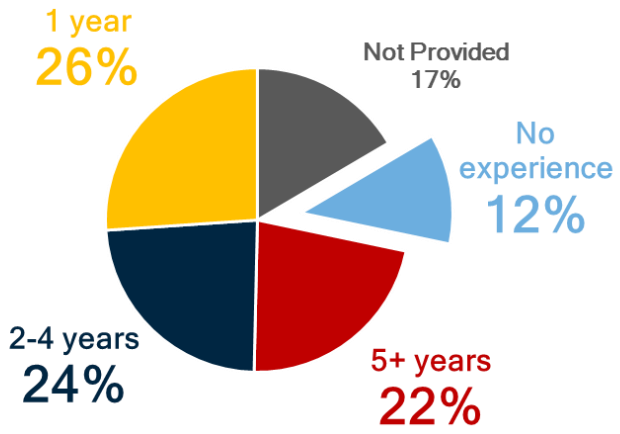
Figure 6 Funded initiatives, by number of team members, % (15 accelerators)

Looking at the experience of participants to funded initiatives, FI-IMPACT found that the majority of the funded initiatives do not have extensive experience in starting up a company, in fact 38% of sub-grantees do not have previous experience or have up to one year experience. Half of participants (50%) have between one and four year-experience.

As shown in the chart below, 26% of the participants have one year-experience and 24% have between two and four years of experience.

Less numerous are projects whose participants do not have any experience at all (12%), meaning that in this phase participants with at least some expertise and knowledge are considered by the accelerators to be most likely to run successful projects compared with brand new entrepreneurs.

22% of the projects involve participants with extensive experience of over five years. 17% of the selected initiatives have not provided team experience information.



n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

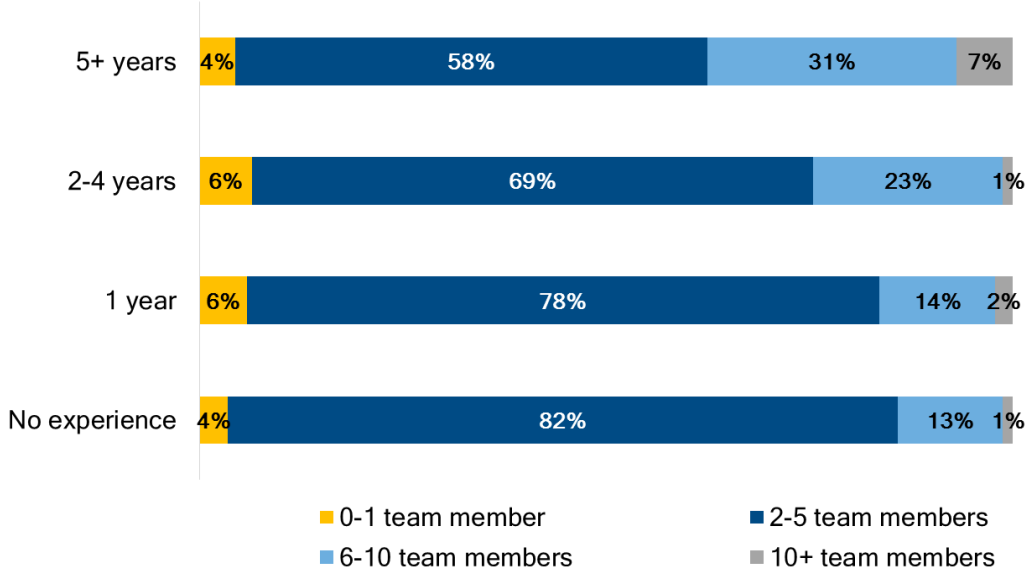
Figure 7 Funded initiatives, by years of experience of the team, % (15 accelerators)

Looking together at the team dimension and experience, FI-IMPACT found that most of the projects involve small teams made up of two to five members.

This trend appears particularly strong in initiatives with no experience and becomes weaker as the participants' experience grows. In fact, 82% of the projects with non-experienced participants involve between two and five individuals, while this percentage drops to 58% for projects whose participants have over five year-experience.

Focusing on larger teams, our analysis shows that as experience grows, projects become more and more oriented towards larger teams. As an example, the percentage of projects of non-experienced gathered in teams of six to ten individuals is 13% and goes up to 31% when experience goes up to five or more years. This is also backed up by analyzing larger projects involving ten or more workers. More experienced individuals tend to gather in larger teams more frequently than non-experienced ones.

This behavior shows that more experienced participants are more oriented towards sharing their knowledge, skills, and network in order to strengthen and consolidate their business models.



n = 605; all available selected initiatives which provided team size and experience information

Source: FI-IMPACT 2015, based on data provided by accelerators

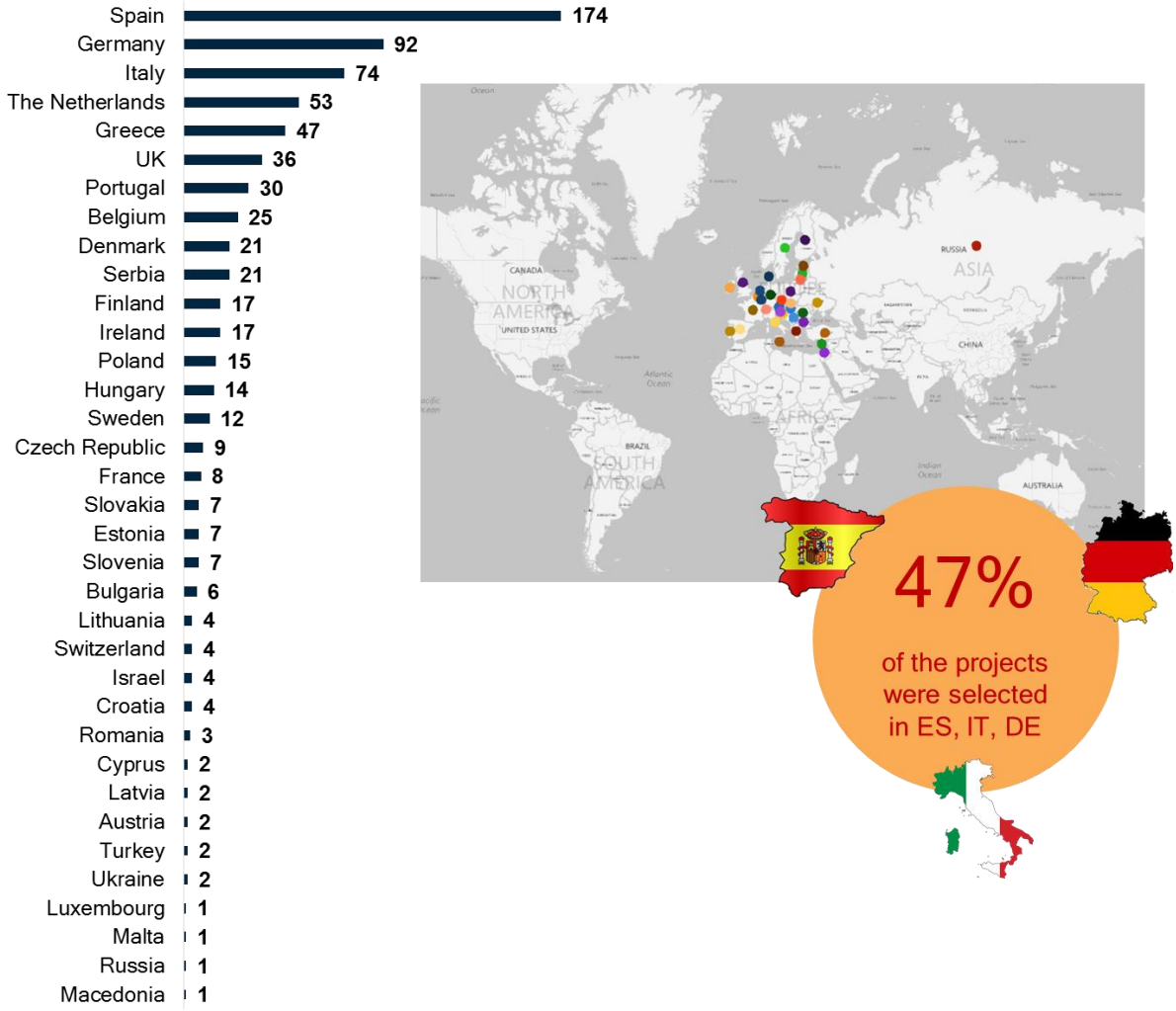
Figure 8 Funded initiatives, by years of experience of team members and respective team size, % (15 accelerators)

2.4. Comparative analysis by country

95% of the projects that have been granted funds from accelerators were generated by an organization in the EU territory.

Spain, Germany, and Italy are the top three countries with the largest number of successful applications and together account for almost half of the funded initiatives.

In fact, 174 initiatives from Spain (24%), 92 from Germany (13%), and 74 from Italy (10%) obtained funds. EU-member states such as The Netherlands (7%) and Greece (6%) also selected more projects compared with the other countries.



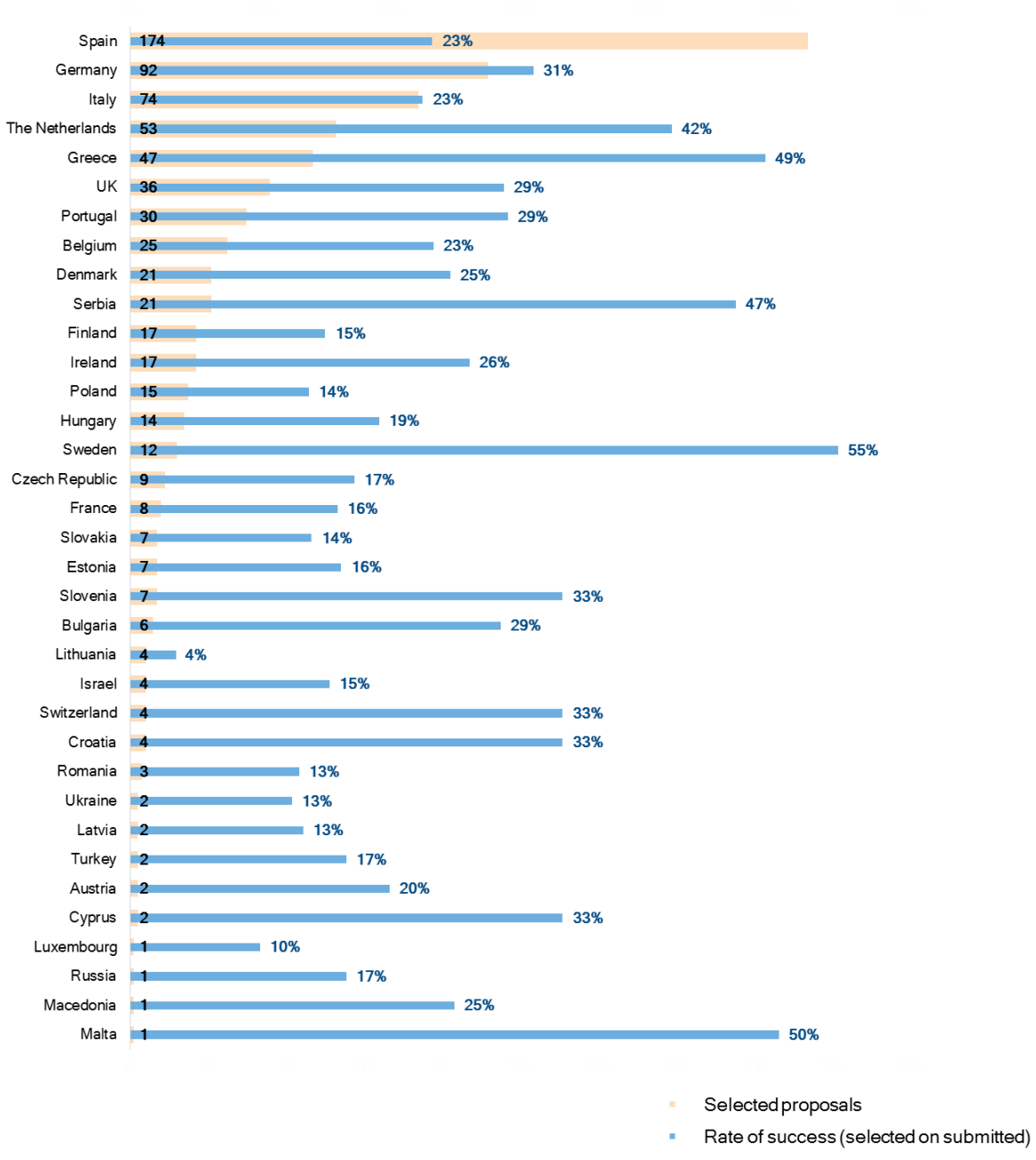
n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 9 Funded initiatives, by country (15 accelerators)

Taking an in-depth look at the number of funded initiatives, FI-IMPACT found that not all the countries have the same rate of success: the bar below outlines the percentages of the funded initiatives with regards to the number of submitted applications in each country (EU and extra-EU). Applications coming from Sweden (55%), Greece (49%), Serbia (47%), and the Netherlands (42%) reached the higher success rates compared with other countries.

The analysis also found that of all the countries, the Netherlands shows a good amount of submitted proposals (127 submissions), as well as a high success rate in the selected initiatives (53 selected).



n = 725; all available selected initiatives

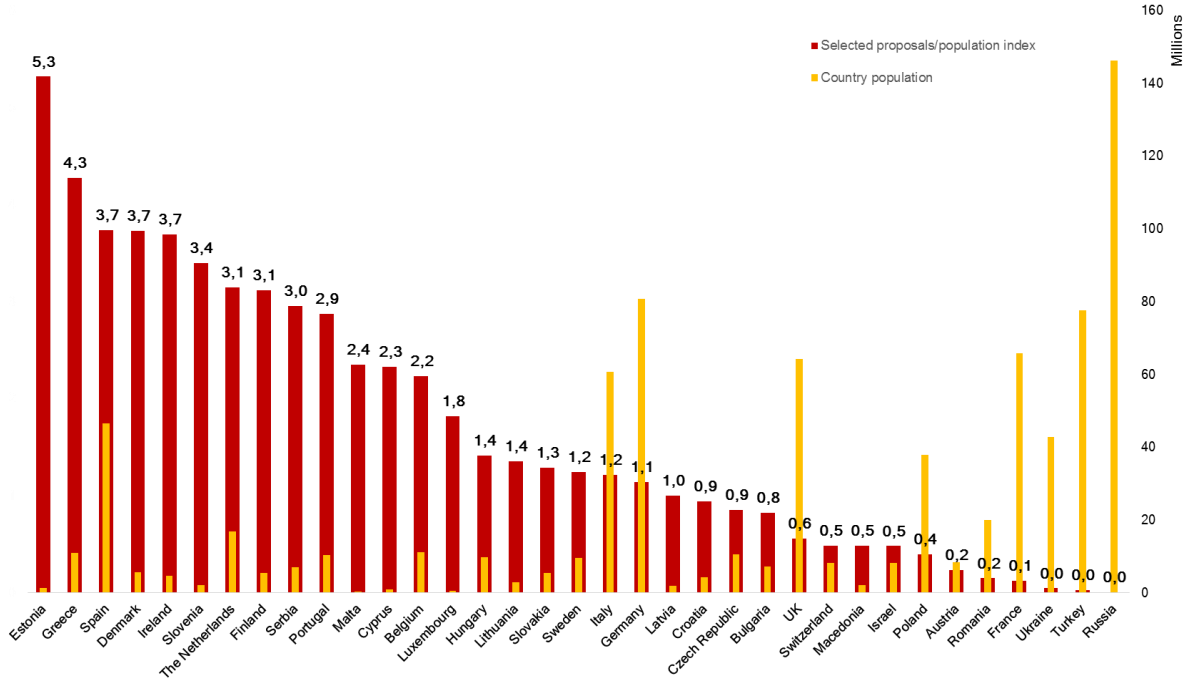
n = 2,975; submitted proposals

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 10 Funded initiatives as a percentage of submitted proposals, by country, % (15 accelerators)

FI-IMPACT analyzed the ratio of successful proposals compared to country demographics, based on an index elaborating ranks from 6 to 0 and includes all countries (EU and non-EU). This allows understand if more populated countries generated more successful initiatives. Generally, countries with a high ratio of funded initiatives on population are: Estonia, Greece, Spain, Denmark, Ireland, Slovenia, the Netherlands, and Finland. This

means that Spain is the country that generated a high rate of successful projects among larger countries.



n = 725; all available selected initiatives

Note: The index (6 to 0) ranks the ratio of funded proposals on country population from largest to smallest

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 11 Funded initiatives with regards to their country population (15 accelerators)

There is a strong correlation between the country of origin of the coordinator of the accelerator and the majority of the proposals that we received. This means that communication efforts are particularly strong in countries were accelerators are based. It is mainly the case of SpeedUp Europe (Germany), FABulous (Spain), FINODEX (Spain), FRACTALS (Serbia), and Finish (Germany).

The figure below shows the countries of origin of funded initiatives per accelerator.

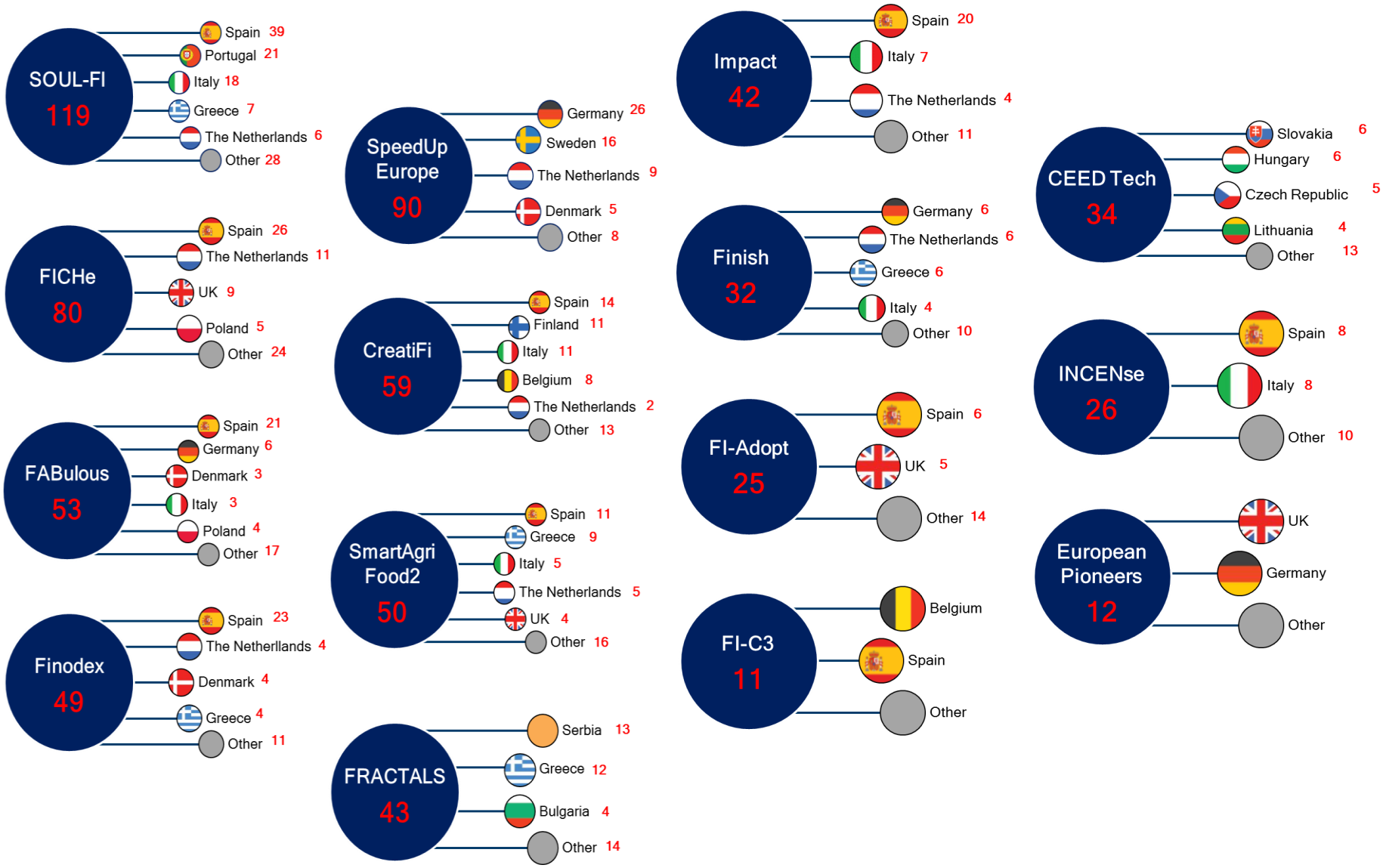

SOUL-FI
119
Spain 39
Portugal 21
Italy 18
Greece 7
The Netherlands 6
Other 28
FICHe
80
Spain 26
The Netherlands 11
UK 9
Poland 5
Other 24
FABulous
53
Spain 21
Germany 6
Denmark 3
Italy 3
Poland 4
Other 17
Finodex
49
Spain 23
The Netherllands 4
Denmark 4
Greece 4
Other 11
SpeedUp Europe
90
Germany 26
Sweden 16
The Netherlands 9
Denmark 5
Other 8
CreatiFi
59
Spain 14
Finland 11
Italy 11
Belgium 8
The Netherlands 2
Other 13
SmartAgri Food2
50
Spain 11
Greece 9
Italy 5
The Netherlands 5
UK 4
Other 16
FRACTALS
43
Serbia 13
Greece 12
Bulgaria 4
Other 14
Impact
42
Spain 20
Italy 7
The Netherlands 4
Other 11
Finish
32
Germany 6
The Netherlands 6
Greece 6
Italy 4
Other 10
FI-Adopt
25
Spain 6
UK 5
Other 14
FI-C3
11
Belgium
Spain
Other
CEED Tech
34
Slovakia 6
Hungary 6
Czech Republic 5
Lithuania 4
Other 13
INCENse
26
Spain 8
Italy 8
Other 10
European Pioneers
12
UK
Germany
Other

Figure 12 Funded initiatives, by accelerator and by country (15 accelerators)

n = 725; all available selected initiatives

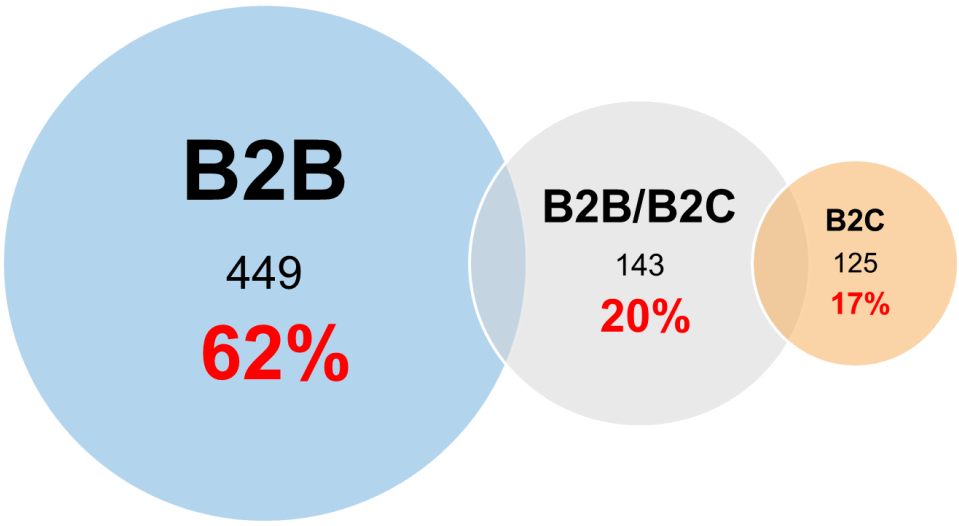
Source: FI-IMPACT 2015, based on data provided by accelerators

2.5. Comparative analysis market focus (B2B, B2C, industry sectors)

We also looked at the type of market the funded initiatives aim at targeting. First we took into account their type of customer , then we classified these initiatives by the industry they plan to sell their solutions to. This paragraph shows some insights from our analysis.

FI-IMPACT found that each initiative may target the consumer market (B2C), the business market (B2B)or both (B2B/B2C).

Those projects falling in the B2B category can target one or multiple industry sectors. Some of the projects in this category do not address a specific industry and we classified their solutions as"cross-sector solutions", appropriate for all industries. As shown in the figure below, most of the granted proposals are developing solutions addressed to the business market. 20% of the funded initiatives target both the business and consumer market, while 17% address purely to the consumer market. Compared to our previous analysis, we found that the new proposals that have been selected from March to August are more consumer-oriented rather than business-oriented. In fact, the B2B target market dropped by 2%, while the B2C target market increased by 4%.



n = 725; all available selected initiatives

8 funded initiatives (1%) did not provide target markets data

Source: FI-IMPACT 2015, based on data provided by accelerators

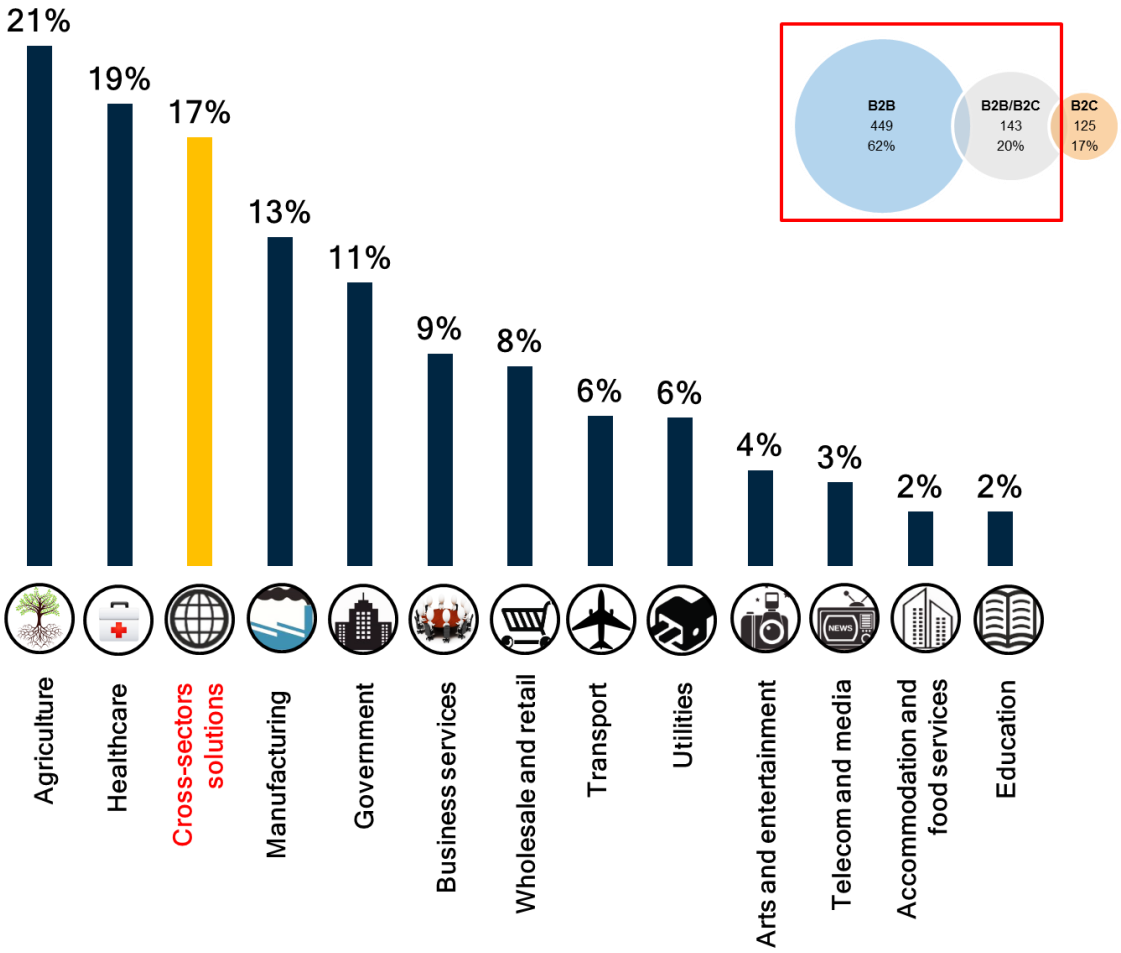
Figure 13 Funded initiatives, by target market, % (15 accelerators)

Looking at the B2B and B2B/B2C initiatives (592 proposals), IDC analyzed which industries are targeted more frequently. They are:

- **Agriculture (125 projects):** solutions addressing the agriculture, forestry, and fishing industry are the most recurrent. 21% of the B2B and B2B/B2C initiatives address to businesses operating in agriculture and are aimed to provide solutions

or services to enhance cultivation of products, crop management, and other activities related to this sector. The high percentage of agriculture-oriented solutions might be due to the strong focus towards this industry of some accelerators. It is the case of Smart AgriFood2, which selected all 50 initiatives in the agriculture industry, and FRACTALS, which selected 42 out of 43 initiatives in the same industry sectors;

- **Healthcare (111 projects):** healthcare is the second most targeted as 19% of the funded initiatives cover this market. A great number of initiatives are aimed to provide tools to shrink the distance between patients and doctors, and facilitate real-time communication and information exchange between doctors. Guaranteeing a quality care is a strong need in the sector, this is why some accelerators such as FICHe, which accelerated 75 out of the 80 selected projects in the healthcare industry, are targeting this market;
- **Cross-sector solutions (103 projects):** 17% of the selected initiatives are not industry-specific and are addressing a wide range of sectors. These solutions are suitable for any type of business;
- **Manufacturing (79 projects):** 13% of the funded initiatives are manufacturing-oriented and include a wide range of sub-sectors such as automotive, aeronautics, furniture, textile and clothing, or plastic. Projects targeting this industry include both the discrete and process manufacturing sector, and are aimed to streamline and improve operations and enhance quality of products through a wide range of solutions. These might include intelligent transport devices, innovative internet-based solutions, or improved supply chain and logistics services.



n = 592; all available selected initiatives targeting the B2B/B2C and B2B market

The 'cross-sectors solutions' segment includes solutions that are transversal to all markets and not industry-specific.

Percentage do not sum up to 100% as multiple answers were allowed.

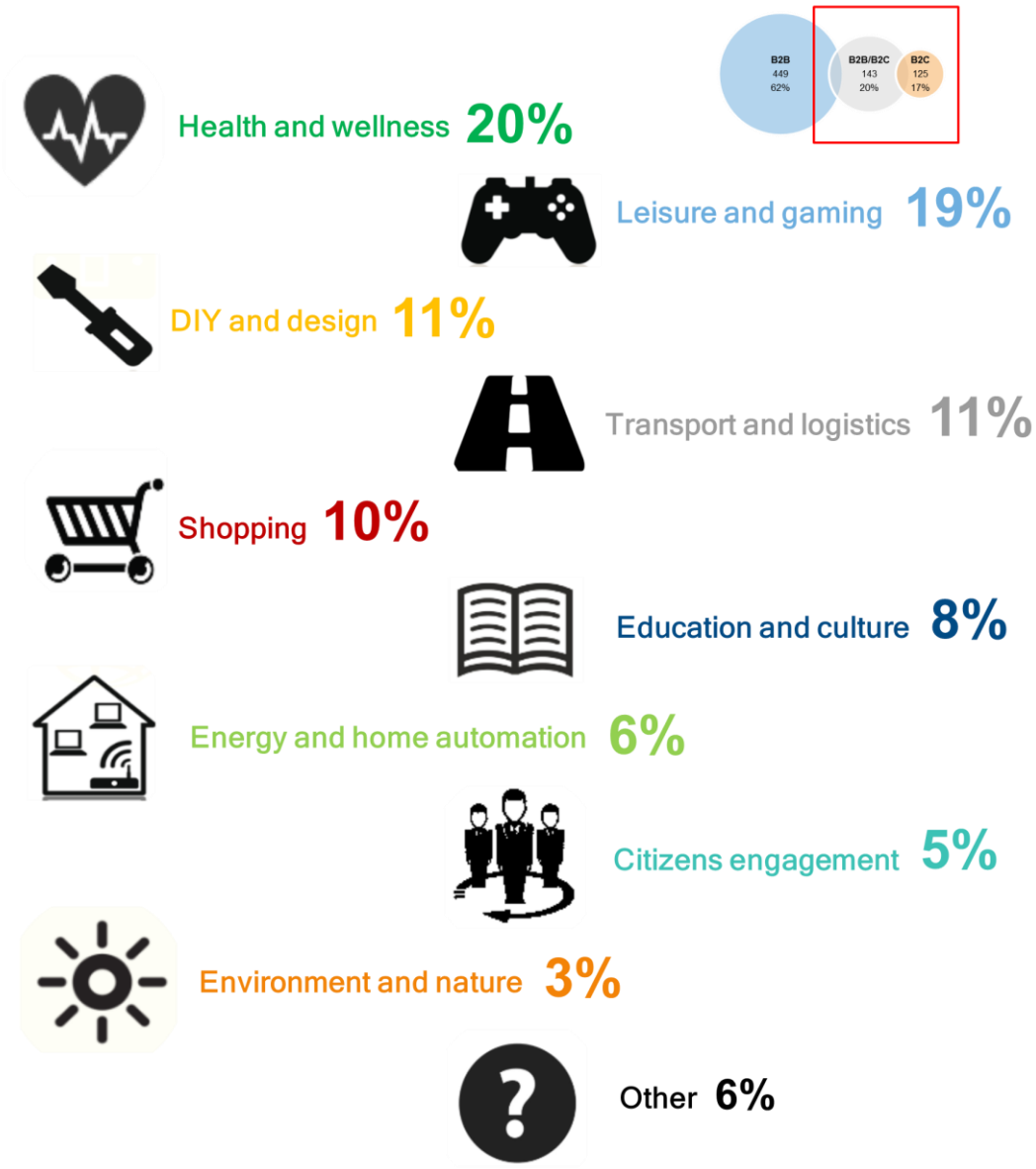
Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 14 Funded initiatives, by target industry sector, % (15 accelerators)

We understood that the initiatives targeting the consumer market (268) fall in the following industries:

- Health and wellness;
- Leisure and gaming;
- DIY ("Do It Yourself") and design;
- Transport and logistics;
- Shopping;
- Education and culture;
- Energy and home automation;
- Citizens engagement;
- Environment and nature

- Other (solutions that do not fall into any of the just mentioned categories).



n = 268; all selected initiatives targeting the B2B/B2C and B2C market

Multiple answers were allowed

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 15 Funded initiatives, by target consumer segment, % (15 accelerators)

The first two categories (health and wellness, and leisure and gaming) are the most recurrent. Apps and devices to improve citizens' life style from wellness, and personal care to the entertainment, are the most common(20%).

2.6. Proposals related to the Smart City ecosystem

Smart Cities are a wide concept that encompasses all technological city-life related solutions. A Smart City solution is aimed to develop an ecosystem based on elements such

as sustainability, innovation, and citizen engagement. These are essential to drive change in the urban setting and to create an advanced environment.

Through the deployment of what IDC calls 'four pillars' (Cloud, Mobility, Social Media, and Big Data/Analytics) and Internet of Things solutions, many cities have become tech-savvy and have introduced technologies or services to promote an improved quality of life (intelligent transportation, smart classrooms, connected healthcare, smart grids, and so on).

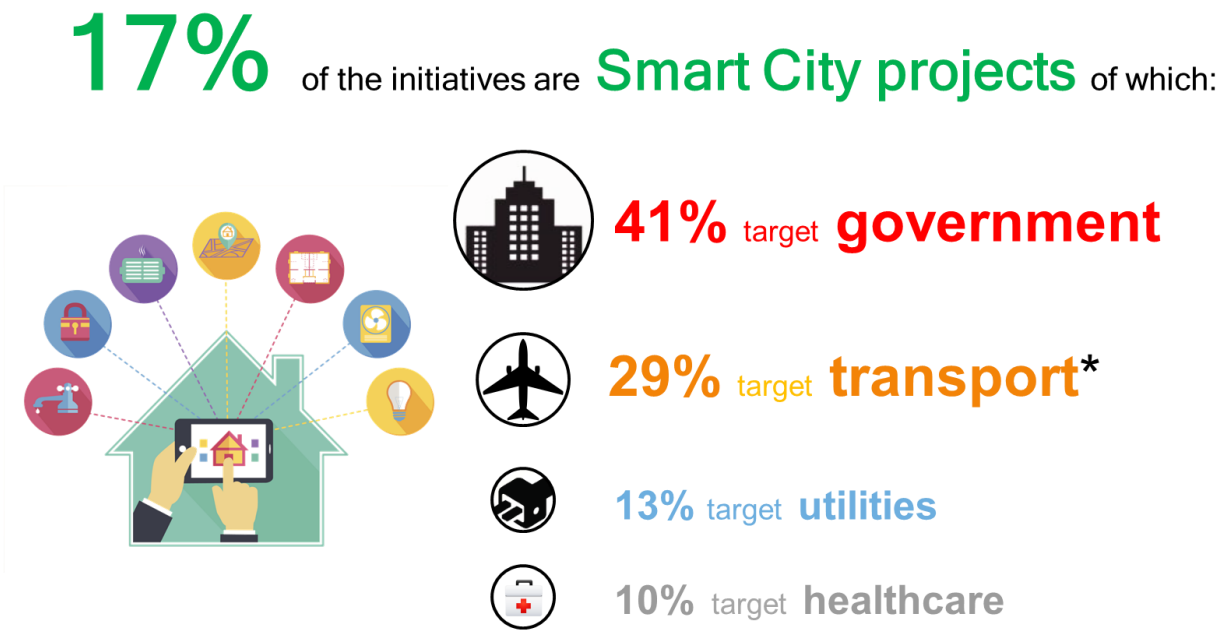
FI-IMPACT found that Smart City area is well addressed by the bunch of initiatives analyzed: in fact 17% of the selected projects use a specific technology to provide citizens or local businesses with new products or services to improve their life.

In fact, Smart Cities is one of the hottest topic in FIWARE, with 8 Accelerators working in this area. It is also important as one of FIWARE goals is to become an open standard platform for smart cities also through the Open and Agile Smart Cities Initiatives, already signed by at least 31 cities across Europe and outside aiming at "kickstart the use of FIWARE standards to foster the development of Smart City applications and solutions"[1].

This happens more frequently in sectors such as public administrations, where out of 124 initiatives, 51 target the government sector (i.e. open data initiatives, defense and public safety solutions, land use and environmental management tools, but also citizen movement and traffic monitoring systems).

In addition, some of the Smart City projects address the consumer transport and logistics B2C segment (15%) as well as the transportation and storage B2B segment, meaning that improving transportation through smart solutions is one of the main focus of the selected initiatives (i.e. traveler information systems, public transportation systems, parking management services, transport sharing systems). Utilities (i.e. smart water management systems, smart energy and gas grids, waste collection activities) and healthcare (i.e. emergency calls coordination projects, assistance to elderly people) gained respectively 13% and 10% share of the overall amount of Smart City projects.

[1] https://www.fiware.org/smart-cities/



n = 124; Smart City-related selected initiatives

(*) = Transport includes both the B2B transportation and storage market and the B2C transport and logistics segment

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 16 Funded initiatives, by Smart City-related projects by major targeted sectors, % (15 accelerators)

2.7. Comparative analysis by accelerator and industry sector

Figure 56 in Annex details on the target industry sectors of the funded projects presented by each accelerator.

2.8. Comparative analysis by FIWARE Enablers

The FIWARE Generic Enablers are aimed to offer general functions in order to boost the development of apps in multiple industry sectors. These are: Data/Context Management, IoT Services Enablement, Advanced Web-based User Interface, and Security, Interface to Networks and Devices, Architecture of Applications/Services Ecosystem and Delivery Framework, Cloud Hosting.

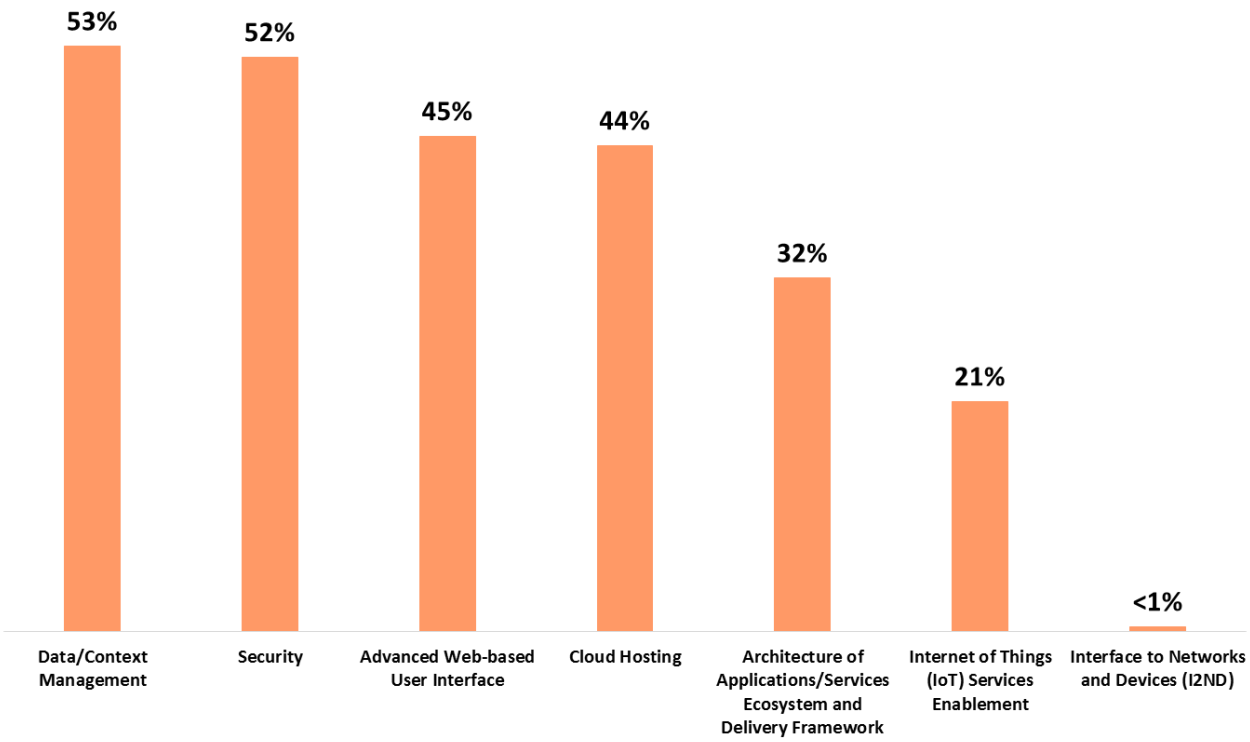
According to the answers collected from the impact assessment tool, Data/Context Management (53%), Security (52%), and Advanced Web-based User Interface (45%) are the most deployed FIWARE Chapters. This means that a great number of projects aims to provide computation and Big Data-related solutions through Data/Context Management. Making delivery and usage of services trustworthy by meeting security and privacy requirements is also a strong focus. Interface to Networks and Devices remains marginal and only a couple of selected business ideas focus on it.

- Data Context/Management: Big Data Analysis (42%) is the mostly deployed enabler, followed by Publish/Subscribe Context Broker (25%);

- Security: Identity management (58%) is the enabler that is used the most. It covers a number of aspects involving users' access to networks, services, and applications. It is followed by PEP Proxy (18%) and Authorization PDP (16%);
- Advanced Web-based User Interface: POI Data Provider (30%) is the enabler that is most frequently used. POI Data Provider provides spatial search services and data on Points of Interest via RESTful web service API. It is followed by GIS Data Provider (15%), and 3D-UI-XML3D (14%).

Some FIWARE enablers have not fully been exploited yet as their adoption rate is lower. This is the case of Network Information and Control, an enabler that has not taken off, as only 2 initiatives are using it.

This outlines that building communication-efficient distributed apps, exploiting advanced network capabilities, or managing robotic devices are still in an embryonal phase.



n = 466; respondents to the FI-IMPACT assessment tool

Figure 17 Selected proposal by FIWARE Chapter (15 accelerators)

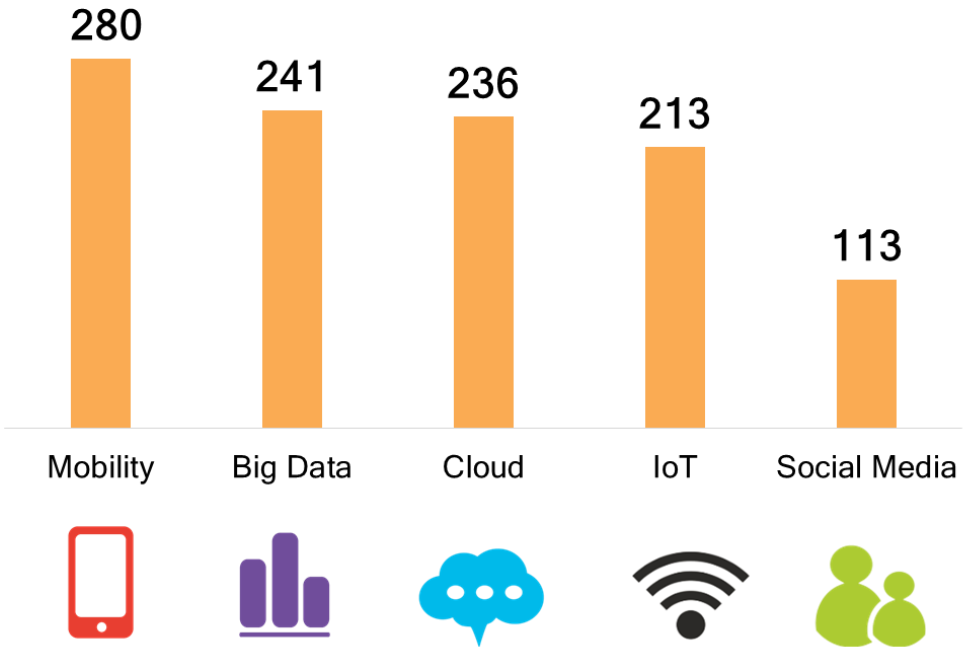
2.9. Comparative analysis by innovative ICT tools

IDC predicts that companies' strategic investments in IT will be built on introducing or strengthening 3rd platform technologies, which are built on what IDC calls "4 pillars" (Mobility, Cloud, Social Media, and Big Data) and on IoT.

By "3rd platform" IDC indicates the convergence of disruptive trends in the IT industry built on mobile devices and apps, cloud services, mobile broadband networks, big data analytics, and social media platforms.

Our research analyzed funded initiatives with regards to the IDC's 4 pillars. We found that 280 projects (39%) focus on Mobility, 241 (33%) on Big Data, 236 (33%) on Cloud and 113 on Social Media (16%). Initiatives focusing on IoT are 213 (29%).

Overlaps might exist as, for example, a solution can be at the same time delivered via Cloud and deploy Social Media tools. Many businesses are looking at these solutions to create new channels to engage with customers, to streamline processes and operations, and to innovate their products. So the development of these areas surely represents an opportunity to create innovation and increase technology orientation, and it might also generate higher margins and revenues streams. Each Pillar is analyzed in more detail below.



n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 18 Funded initiatives, by IDC 3rd platform (15 accelerators)

Mobility

As mobility is part of business digital innovation, a great amount of SMEs are strategically investing in mobile solutions and apps to generate revenues and extend their reach. IDC expects mobile solutions to increase in the short-term as many companies will invest in mobile strategies to boost productivity and strengthen collaboration. Mobile investments will drive towards innovation and will allow many companies to gain a competitive advantage. IDC forecasts that 67% of the companies are or will support mobile solutions by the end of 2015. This will happen more frequently in industries such as business services, telecom/media, and manufacturing.

- The focus on mobility is significant as 280 out of the 725 initiatives (39%) are paying attention towards mobile enablement.
- Some accelerators put a strong focus on mobile solutions. It is the case of Soul-FI (23% of the mobile-based initiatives come from this accelerator), FICHe (11%), and Impact (10%).
- The industry sectors that are more mobile-oriented compared with others are agriculture (15% of the mobile solutions target this industry) and healthcare (13%).
- The countries with the highest adoption of mobility in their initiatives are Spain (29% of the mobile-based projects come from this country), Italy (12%), and Germany (10%).

Big Data

Big Data is developing in Western European countries and is a fast growing market. A large number of proposals that have been granted funds by the FI-PPP Phase III are focusing on this technology. According to IDC, in Western Europe, 20% of the companies are already using Big Data and 19% will introduce such solutions by the end of 2015. Companies using or planning to use Big Data are more oriented towards on-premises solutions rather than on solutions delivered as a service in the public cloud or as a dedicated managed service by an external provider, although those are gaining acceptance especially among SMEs.

- 241 out of the 725 initiatives (33%) are deploying Big Data solutions.
- The top three accelerators that supported Big Data-oriented initiatives are Soul-FI (19% of the Big Data-oriented projects come from this accelerator), SpeedUp Europe (16%), and FICHe (15%).
- The industry sectors whose focus on Big Data is stronger compared with other industries are agriculture (22% of the Big Data projects address this sector), healthcare (19%), and government (15%).

- The countries which supported Big Data-driven initiatives were Spain (25% of the initiatives deploying Big Data come from this country), Germany (16%), and the Netherlands (10%).

Cloud

Cloud solutions are growing rapidly but there is plenty of space for improvements in adoption across Western European countries as Cloud IT spending is still limited. According to IDC, 58% of the Western European companies are using Cloud, but although the market is expanding rapidly, investments are contained.

- In this phase 236 out of the 725 funded initiatives (33%) are adopting Cloud technologies.
- The three accelerators that pushed towards adoption of this solution are FICHe (21% of the Cloud-based initiatives where accelerated by this accelerator), FABulous (12%), and SOUL-FI (11%).
- Cloud solutions are more frequently used in industry sectors such as manufacturing (49% of the Cloud initiatives target this industry), healthcare (34%), and agriculture (17%).
- Countries were Cloud-based projects are more widespread are Spain (28% of the initiatives based on Cloud come from this country), Germany (11%), and the Netherlands (10%).

IoT (Internet of Things)

The Internet of Things is one of the most important driver for innovation for the growth and expansion of IT-based value in the 3rd platform era. The IoT explosion took place with the constant growth of connected devices to create a "smart" ecosystem (smart cars, homes, industry equipment, wearable, and so on).

- 213 out of the 725 selected projects (29%) are IoT initiatives.
- The accelerators supporting more IoT projects are SOUL-FI (23% of the IoT proposals come from this accelerator), FICHe (16%), and SpeedUp Europe (11%).
- IoT projects are most likely to address industries such as healthcare (21% of the IoT funded initiatives target this sector), agriculture (21%), and government (15%).
- Countries were IoT based initiatives are most recurrent are Spain (26% of the IoT initiatives are generated in this country), Germany (12%), and Italy (11%).

Social Media

Social Media usage is generally high, but compared with other 3rd platform solutions its use appears still limited. Engaging with potential and current customers is extremely important to increase customer retention and gain high profits. IDC estimates that 65% of the Western European companies will adopt Social Media by the end of 2015. A large share of these organizations operate in the telecommunication and media industries, where Social Media is highly correlated to their core business.

- In phase 3 of the FI-PPP, Social Media is the least widespread technology as 113 out of the 725 selected initiatives (16%) are active on Social Media channels.
- The accelerators with a strong focus on Social Media are SpeedUp Europe (27% of the Social Media initiatives are accelerated by this accelerator), SOUL-FI (19%), and CREAtiFI (11%).
- Projects that are not industry-specific and that target all sectors (what IDC calls "horizontal" or "all sectors solutions") are the most Social Media oriented (18% of the Social Media projects target this segment), followed by manufacturing (13%) and by the consumer leisure and gaming segment (13%).
- Countries where Social Media proposals are more frequently generated are Germany (25%), Spain (17%), and Italy (8%).

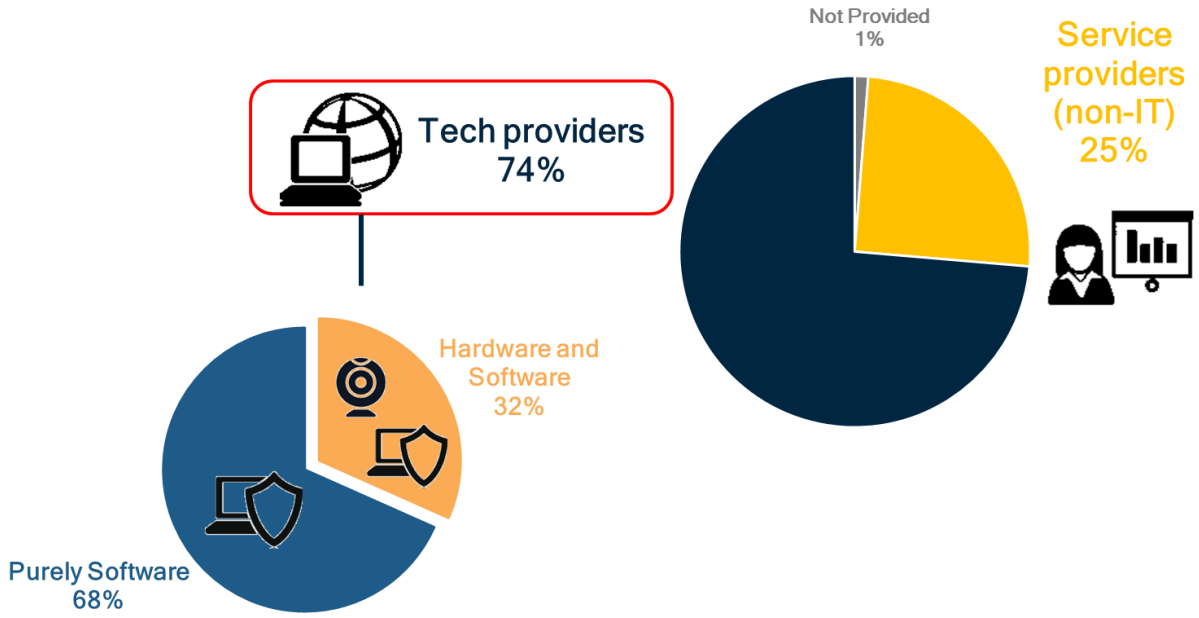
2.10. Comparative analysis by type of technology

Taking a look into the type of offering of the projects, FI-IMPACT found that 25% of the initiatives offer non-IT services, while the majority of them offer tech solutions (74%). These address the market with purely software solutions or with a bundle of hardware and software solutions.

The former represent 68% of the tech providing initiatives. The remaining 32% of the tech-providing projects offer hardware and software solutions.

This means that in addition to software, the initiatives also offer hardware components such as RFID or sensors.

It is interesting to notice that among the 169 initiatives that offer both hardware and software solutions, 80% is focused on IoT technologies, meaning that a great share of the initiatives proposing an IoT solutions has incorporates a physical component in their offer.



n = 725; all available selected initiatives

Source: FI-IMPACT 2015, based on data provided by accelerators

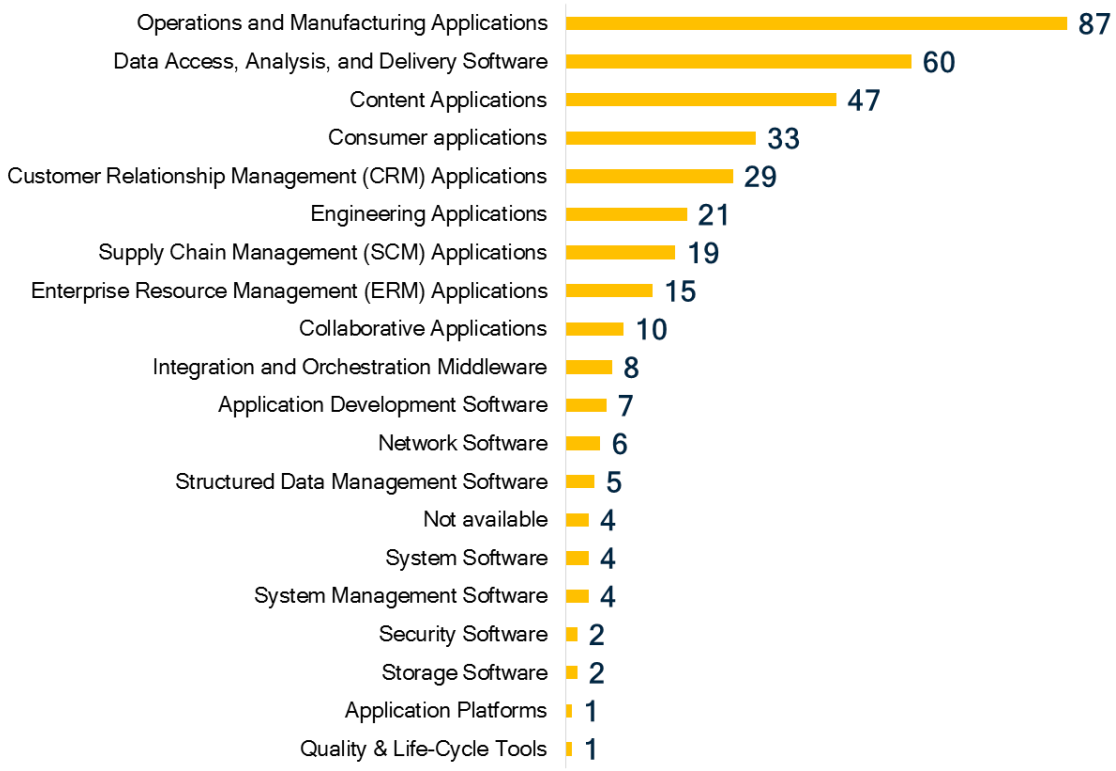
Figure 19 Funded initiatives, by type of offering, % (15 accelerators)

As far as it concerns the purely software solutions, our analysis found that the most recurrent category is industry-specific. In fact, projects providing exclusively software are or will offer operation and manufacturing applications more frequently compared with other software, outlining that most of the offering of projects target specific sectors.

This is backed up by the fact that some accelerators are focusing on specific sectors, which implies a strong focus on particular needs.

The second most recurrent category is Data Access, Analysis, and Delivery Software. This is highly correlated to the strong focus of some projects towards Big Data.

Content applications are also quite popular as the need to develop IT solutions to manage unstructured data is strong.



n = 365; all available selected tech initiatives providing purely software solutions

Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 20 Funded initiatives, by software market category (15 accelerators)

2.11. KEY FINDINGS

As of August 31st FI-IMPACT analyzed 6,571 proposals, 725 of which have been selected for funding by the Accelerators in the FI-PPP Phase III.

As a conclusions of our mapping analysis of the funded initiatives we found that:

- Soul-FI, SpeedUp Europe, and FICHe are the accelerators with the largest number of funded initiatives, counting 289 projects funded in total;
- There is a stark dominance of funded initiatives originated in Spain, Germany, and Italy. Projects generated in The Netherlands, Greece, and UK are also quite numerous;
- Funded initiatives can be split according to the industry sector they target. IDC made a distinction between B2B and B2C initiatives and found that 62% of the funded initiatives are B2B and 17% are B2C. The remaining 20% target both consumers and businesses (B2B/B2C).
- FI-IMPACT analyzed target sectors in more detail and found that:
    - The funded initiatives have a strong focus on agriculture (21% of all projects), also promoted by two Accelerators active in this area (such as Smart AgriFood 2 and FRACTALSI;
    - Healthcare is another widely targeted sector, as 19% of the projects are healthcare-related.

    - A big chunk of projects are not industry-specific and fall in the "cross-sector solutions" category, as their solutions may address all sectors (17%);
- Proposals often focus on one or more IDC pillars (Mobility, Cloud, Big Data, Social Media, and IoT). More specifically, 280 projects are mobile-based, 241 are Big Data-oriented, 236 use Cloud, 213 involve IoT solutions, and 113 are active on Social Media.
- Most of the funded initiatives are run by small (61% are made up of two to five people) and little-experienced teams (26% have only one year), made up of two to 5.
- Some projects are developing Smart Cities solutions (17%), targeting mainly the government and transport sectors.
- 74% of the projects offer a technology (either a purely software solution or a hardware and software solution), while 25% of them are non-IT service providers as they do not offer a solution that competes in the IT space. They rather rely on technology to offer something else (such as a marketplace to meet demand and offer of products or services).

3. Preliminary assessment of the Phase III initiatives' performance

3.1. Introduction

This chapter presents the results of the Key Performance Indicator measurement implemented through the FI-IMPACT Impact Assessment Questionnaire to assess the readiness of the Phase III initiatives and their potential performance.

FI-IMPACT identified four performance assessment areas:

- **Innovation Focus**: level of originality, maturity and innovation sustainability of the sub-grantee's offering, assessed on the basis of questions on the type of innovation pursued by the initiative and its closeness to market.
- **Market Focus**: performance in the collection of knowledge about target customers and in the development of a coherent strategy and plan to address the targeted market. This is based on questions investigating in detail the type of market and customer addressed.
- **Feasibility**: capability to insure the economic viability of the business idea through the collection of necessary funding, assessed on the basis of the level of development of the business and financial plan of the funded initiative.
- **Market Needs**: performance in the potential satisfaction of targeted customers' needs, measured as the level of alignment between the solutions' promised benefits and real market needs. This indicator is measured separately for business and consumer users, using benchmarks derived from IDC's data on real market needs.
- **Social Impacts**: identification of the main type of social impacts potentially achieved by the funded projects.

The indicators were measured on 472 submitted questionnaires available at November 3rd, however some elaborations are based on 466 questionnaires as specified throughout this chapter.

The results are aggregated for the overall sample of the sub grantees responding to our questionnaire. For each KPI we provide the average scores of the entire sample of respondents. The measurement is based on a 5-point scale aggregating results in 3 evaluation classes:

- 0 - 1.6: Low performance
- 1.7 -3.3: Medium performance
- 3.4 - 5.0: High performance

The following paragraphs are dedicated to the analysis of the KPIs.

3.2. Innovation KPI

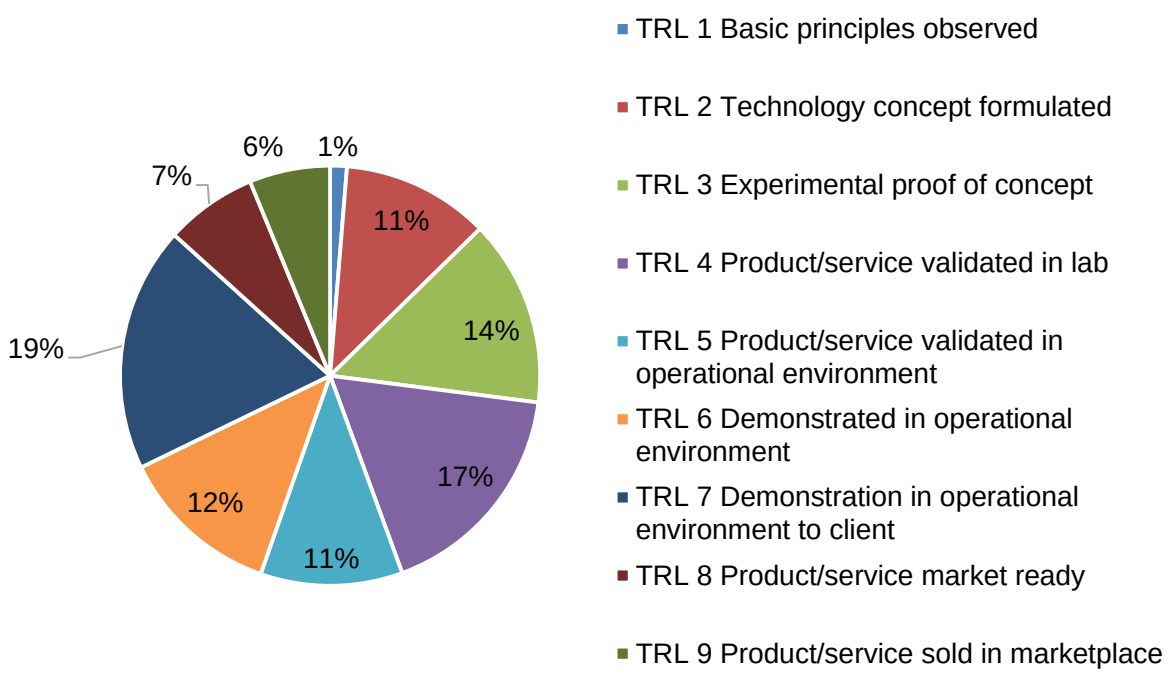
The Innovation indicator expresses the level of originality, maturity and sustainability of innovation to a product or service in an organization's go to market strategy

As part of our model we measured the level of innovation and positioning in the go-to-market process of the funded initiatives. An innovative product or service can make a significant Impact in the market if you are ready to implement it, but can conceal substantial engineering, business planning, development, testing and marketing effort if the product or service is still in the planning phases. If the innovation is being developed and validated among colleagues and potential clients the innovation real market potential is increased. Innovation is quite healthy in organizations if it is part of a strategy but can be quite resource consuming where stand-alone.

The single Innovation indicators were used in the market focus and feasibility KPIs, but are also interesting on their own. Strong Innovation is not required to have success, in many cases the copycats do better than the first movers. Sometimes it is exactly the market innovation and lead-time on possible copycats that guarantees success. There is no set pattern. However it is evident that when compared to other parameters like market maturity, organisation's market readiness and competitors in the marketplace innovation can become an important parameter. We proposed five questions about innovation which we consider will affect the growth potential of the organisations and thus affected our market model.

"How near is your concept to being commercially exploitable?"

The first question regarding readiness is rather straightforward. The level of preparedness to enter the marketplace greatly increases realistically achievable innovation. The results however were rather surprising. We used the simply Technology Readiness Level (TRL) approach developed by NASA to assess the level of completeness of components by asking a set of simple questions. It is widely known and was employed to provide comparable answers and to avoid misunderstanding. We expected most solutions to be proposing validated solutions with a TRL around 6. Furthermore we expected there to be a standard Bell curve distribution showing a gradual decline from the average. However we found to groups as can be seen in the figure above. This is potential due to the dichotomy observed in the groups of proposals examined. There is a large group of start-ups with a single idea, who would naturally be at an earlier stage the other large group of better established entities that already had products and services on the market. In terms of our market model this had an impact on the revenue growth rates which lead to the effect that we observed in the revenues and growth rate analysis in the previous section. As described above smaller organisations with an idea at a lower TRL level will generate very little income and expect a slower growth rate.



n = 466 respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

Figure 21 Innovation KPI: Market Readiness as described using TRLs

The answers are quite distributed across the 9 options we provided. Only 13% of the projects we are assessing are positioned at the highest points of the TRL scale (TRL 8 and TRL 9). The data shows that generally these solutions are at in their first phase of development.

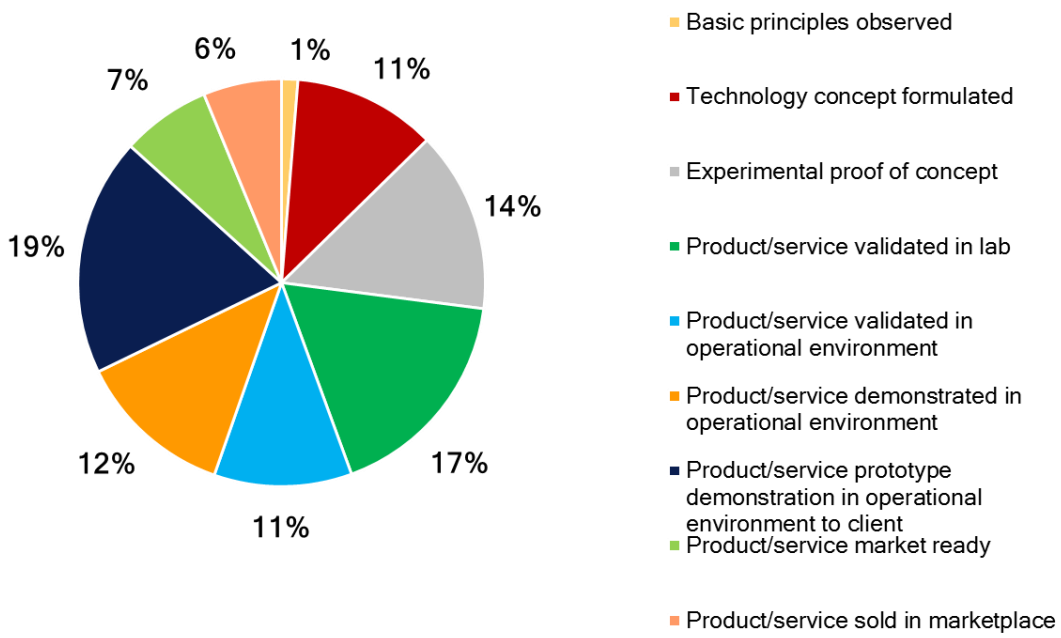
"Does your concept or idea provide an Incremental Improvement or radically change existing products or services?"

The second question "Does your concept or idea provide an Incremental Improvement or radically change existing products or services?" has only two possible solutions. No foreseen improvement was excluded, as no business idea would answer the question in this manner. The incremental effect was expected to be most common as was the case with 56% of respondents claiming they thought they were incrementally expanding the state of the art in their domain, while respondents claiming they thought their application or service would provide disruptive innovation was surprisingly high.

The results of the answers were perhaps due to the large number of smaller organizations proposing projects and services and the fact that (as we see later) they are proposing stand-alone applications, thus they would logically be thinking out of the box where larger organizations with an established product portfolio would be looking to improve existing solutions.

As mentioned innovation is not essential to success and In terms of our market model the effect of the response only slightly affected the overall KPI and the market size. It is however clear that the Optimistic and Superstar scenarios described above are more likely where true innovation is present.

Market readiness: How near is your idea to being commercially exploitable?



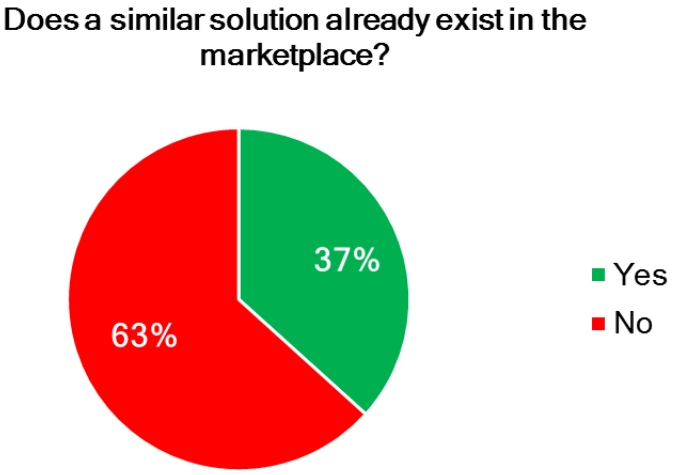
n = 466; respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

Figure 22 KPI Innovation: Percentage of respondents expecting incremental or disruptive innovation

Competition in the marketplace

This question is closely related to the innovation question, that while the previous innovation question relates to a conceptual uniqueness and the technological parameters, this question approaches innovation from the innovation in the economic and market perspective.



n = 466; respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

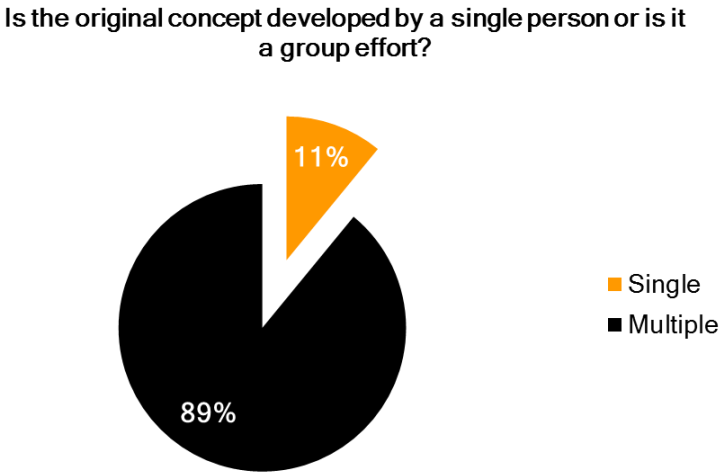
Figure 23 KPI Innovation: Competitors in the marketplace

Again the results are largely in line with the types of smaller "new idea generating" proposals that were received. As part of their strategic pitch styles addressing venture capitalist types of audiences, proposals are largely declaring that they will provide something new and innovative.

In terms of our market model this again will lead to a situation in the Neutral scenario where revenue growth is more gradual as investors are the main sources of revenue in the initial period, it will however lead to a higher failure rate as it is not guaranteed (by the market) that the products and services are really required by the market, where, on the other hand, if a product and service already is sold, someone needs it and is thus buying it, reducing the potential for failure (all other things equal).

Team Effort

The following question "Was the initial concept conceived by a single person? or by two or more people?" is based on the idea that a group of collaborators involved in the conceptual phase is more likely to be objective and identify needs and requirements, where the "lone inventor" will lead by the Pygmalion effect to overlook defects. A group is always more objective. The results are similar to the demographics shown in Figure 7, where we see that the number of one man companies plus those accepted proposals which did not indicate a company size and company name was very similar. Thus the outcome and result of the question was largely predictable as roughly 11% said this was a lone effort while 89% claimed a group effort.



n = 466; respondents to the FI-IMPACT assessment tool

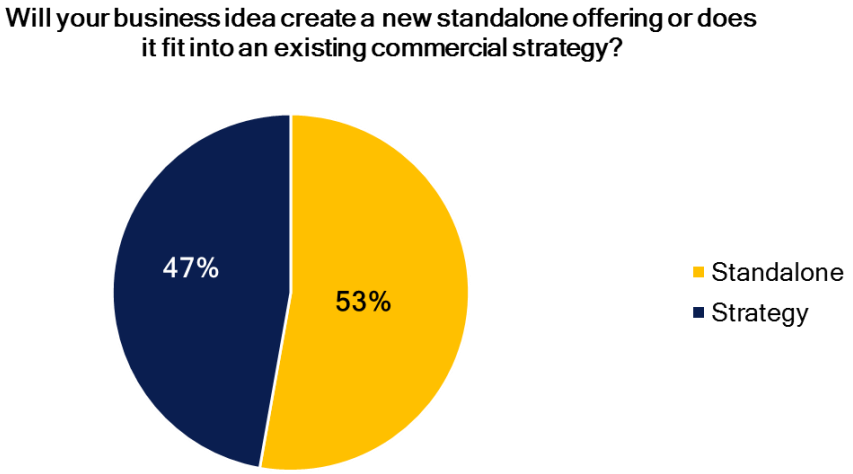
Source: FI-IMPACT 2015

Figure 24 KPI Innovation: Group Effort or Lone Effort

In terms of our market model this is related to the growth rate where based on the company size as described in §5.2. A larger company has a different growth rate than a smaller company. This data also affects the failure potential built into our market model as those initiatives involving the lone inventor start-up will be subject to a higher failure risk due to missing requirements and needs. It is also evident that an innovative initiative could be promoted by a single person in a large organisation, this is however not the case in the data thus far examined.

Innovative or existing strategy

The final innovation parameter examines the single technological ideas and assesses whether they are part of a larger organisational strategy involving existing product lines of similar offerings or whether this it is a new product line for the organisation. Thus this question examines the innovativeness of the organisational strategy. Again this is less relative for the one-man start-up companies that potentially have only one product/service, but where an organisation has other products a standalone "innovative" strategy is not necessarily a positive phenomenon. In good times companies will encourage new innovative investment, but where uncertainty or poor economic performance is expected in the economy in general, the organisational strategy will tend to reduce investment in new ideas in favour of improving existing product services or creating add-ons to existing products and services.



n = 466; respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

Figure 25 KPI Innovation: Standalone Ideas or Strategic Development

As we see in the figure above, the majority of initiatives are new product lines in small companies. In many cases they are "betting" on the idea. This was in fact expected given the nature of the companies. However there are a sizeable number of companies that are using FIWARE to improve their existing product and service offerings.

When this data is correlated to the single vertical markets explored in the following section and the growth of those markets this factor directly affects our market model. Those organisations with a standalone strategy will not affect the Optimistic scenario but given their increased failure rate will negatively affect our Pessimistic scenarios where the market model is sensitive to poor performance of the economy as a whole as less IT spending occurs the failure rate increases.

3.2.1. Innovation KPI: Measurement Results

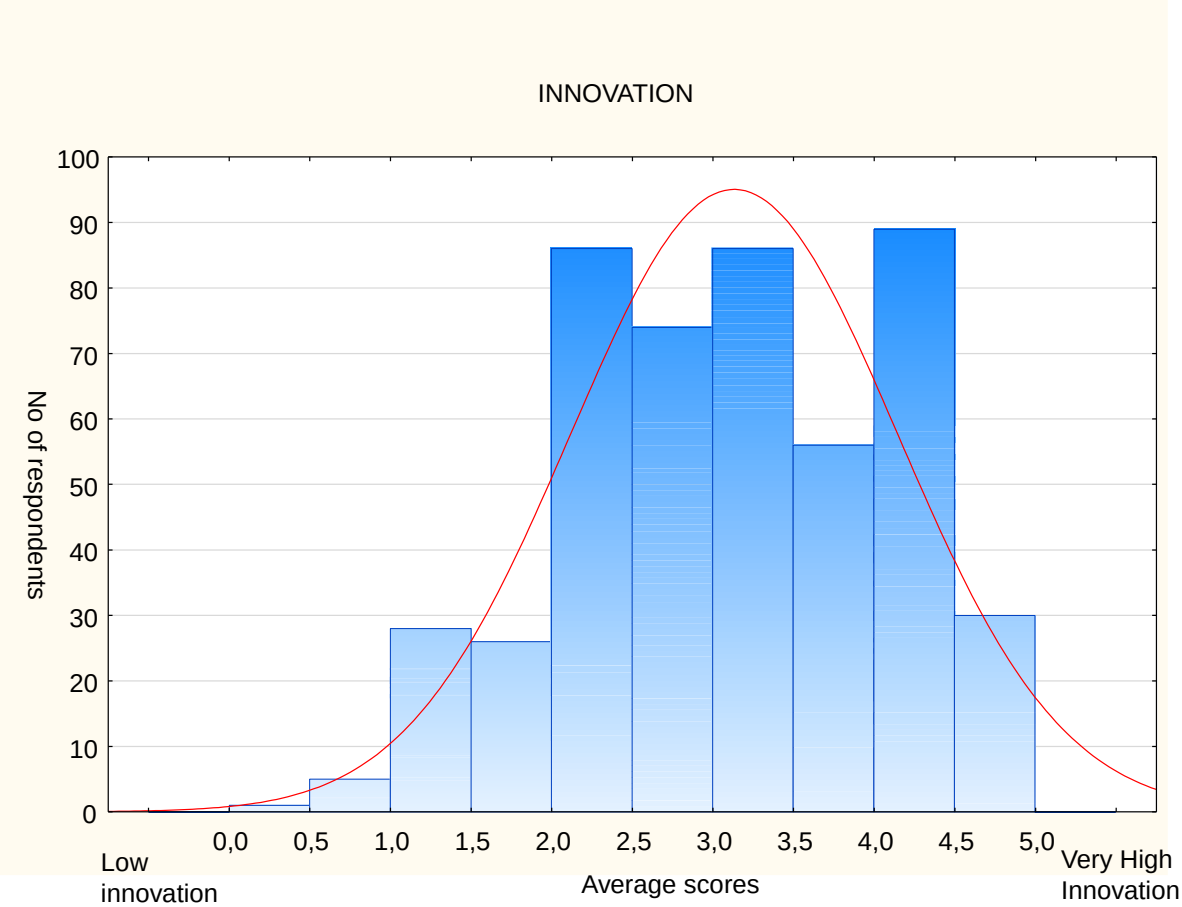
The chart below shows the distribution of Innovation Focus aggregated scores for the 481 respondents of the first round of the Impact Assessment survey, updated at November 3rd 2015. The score is the weighted average of the answers to the innovation questions listed above, combining the two main investigated aspects: the closeness to market and the level of originality and disruption of the business idea (see Annex 7.1 for the calculation details).

The score corresponds to a scale of high, medium or low level of innovation focus as follows:

- Scores from 0 to 1.6 correspond to a low level of innovation;
- Scores from 1.7 to 3.3 correspond to a medium level of innovation;
- Scores from 3.4 to 5 correspond to a high level of innovation.

As the chart shows, most of the respondents are concentrated in the higher part of the scale with a score over 3. Overall, the average score of this group of initiatives is 3.1 which is quite positive and the best result among the 4 KPI indicators.

This result indicates that the level of originality of these solutions is high, and these initiatives are driving innovation in the markets where they compete.



N= 472 respondents to the FI-IMPACT Assessment Tool at November 3rd 2015

Source: FI-IMPACT 2015

Figure 26 Innovation KPI Scores

3.3. Market Focus KPI

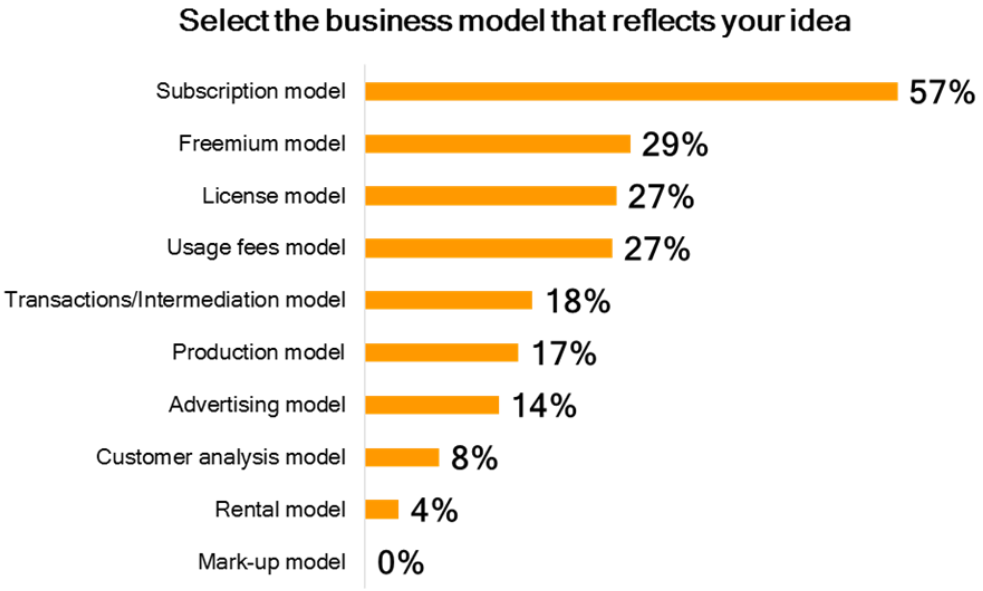
The Market Focus indicator assesses to what extent the sub grantees have gathered knowledge about their target customers, and whether their initiative has a coherent strategy and plan to reach the target market

This indicator measures the completeness level of "customer development"[2] activities: whether customers have already been approached customers to collect validated feedback on the product, and to what extent a strategy has been developed to acquire the target number of customers.

The first question in this area concerns the "business model" choice made by the proposers. The choice among alternative models does not directly impact on revenue

[2] Steve Blank, "The four steps to Epiphany", 2013.

forecast for the selected initiatives, but can provide significant insights on their readiness at this early stage of business development.



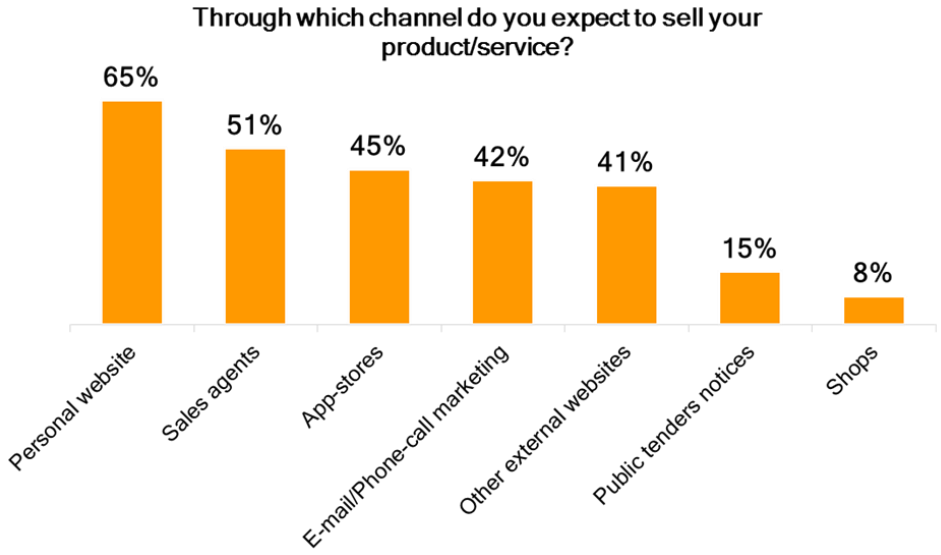
n = 466; respondents to the FI-IMPACT assessment tool, Multiple answers were allowed

Source: FI-IMPACT 2015

Figure 27 KPI Market Focus: Business Model

As shown in the above Figure, the Subscription model is used by more than half of respondents but mostly in combination with other models (only 29% declares to rely at 100% on subscription). This often happens regardless of the type of solution, for example the subscription model is used by 61% of the pure service providers, but also by 65% respondents who have declared a purely software solution. This approach reflects an early stage of customer development activities, where companies have yet to collect validated feedback from the market and try different approaches, often identifying a main model but seeing others as promising and "keeping them open" for potential business.

The sub grantees' readiness, and hence likelihood to contribute to a more optimistic market scenario, will be reflected in a more focused approach to market, where one major model has been identified and is consistently targeted over the others.

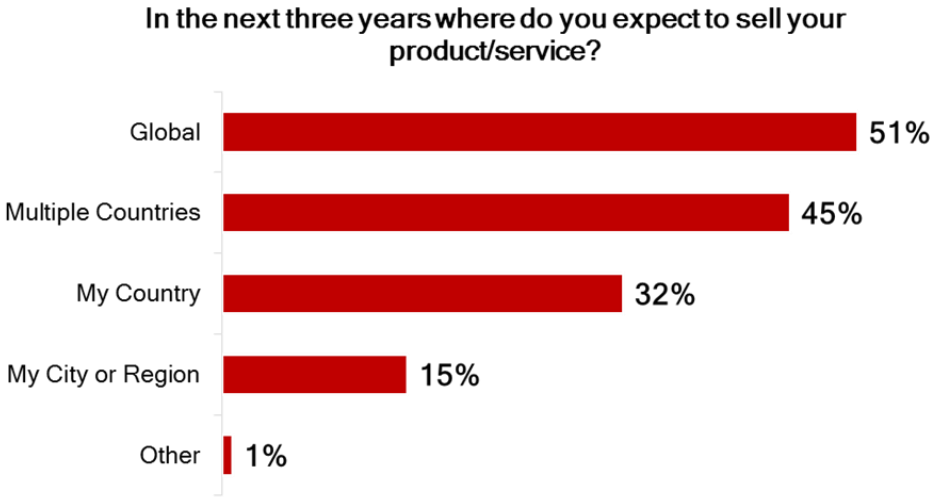


n = 466; respondents to the FI-IMPACT assessment tool, Multiple answers were allowed

Source: FI-IMPACT 2015

Figure 28 KPI Market Focus: Sales channel

A question strictly related to the business model concerns the channels selected by the sub grantees for acquiring and dealing with customers in their target market. Even in this case there is not a direct relation between selection of a certain channel and foreseen revenues estimated in the market model. Nevertheless, sales channels identification and management are an important aspect to gauge a company's readiness to fulfil the above identified market scenarios.



n = 466; respondents to the FI-IMPACT assessment tool, Multiple answers were allowed

Source: FI-IMPACT 2015

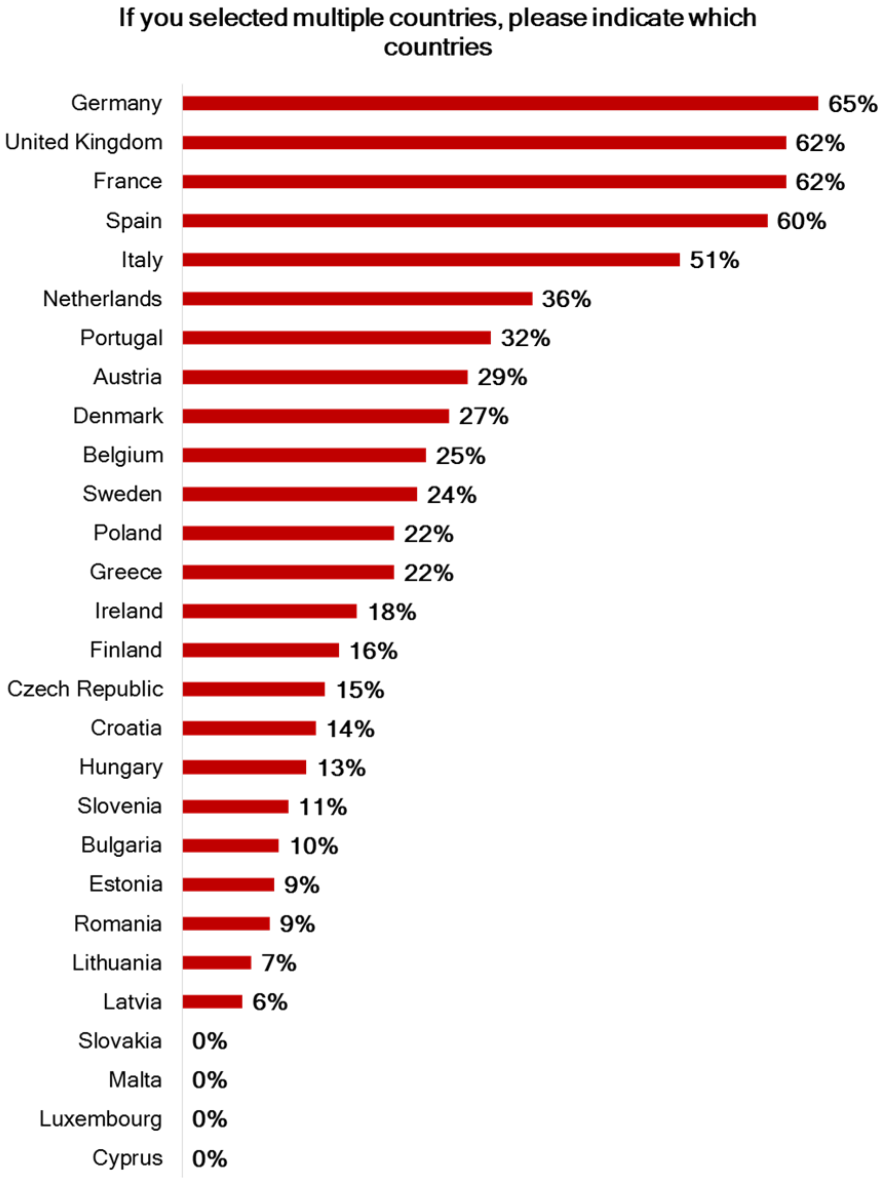
Figure 29 KPI Market Focus: Sales channel

As for the business models, a variety of channels have been selected, in most cases used in combination.

The Personal website is the most used channel by the respondents, but only 7% use it as the only sales channel. Again, the early stage of customer development is testified by the variety of channels selected by most of the sub grantees. It is expected that, as they progress and get validated knowledge of the target market, the sub grantees will have to focus on those channels most frequented by the target customers. Furthermore, for those sub grantees targeting mature markets, it will be mandatory to establish themselves on those channels where existing competitors position themselves, and where customers expect to find relevant providers in the sector. For example, only 54% of respondents who declare to have an incremental innovation list "Sales agents" among their channels.

This happens regardless of the type of product: for example, the percentage is 51% for service providers and 54% for respondents who have a purely software solution. It is expected that many will have to revise this assumption, as software solutions currently are mostly showcased at exhibitions and presented to customers by salespersons. Any incremental innovation in the sector will have at least to be promoted through these same channels.

The question on geographical target (Figure 29) and the detail by country provided in Figure 30 are used directly for revenues estimation in the Market Model described above. More than half of respondents declared to sell the solution globally and the 45% in multiple countries.



n = 466; respondents to the FI-IMPACT assessment tool, Multiple answers were allowed

Source: FI-IMPACT 2015

Figure 30 KPI Market Focus: Target Country

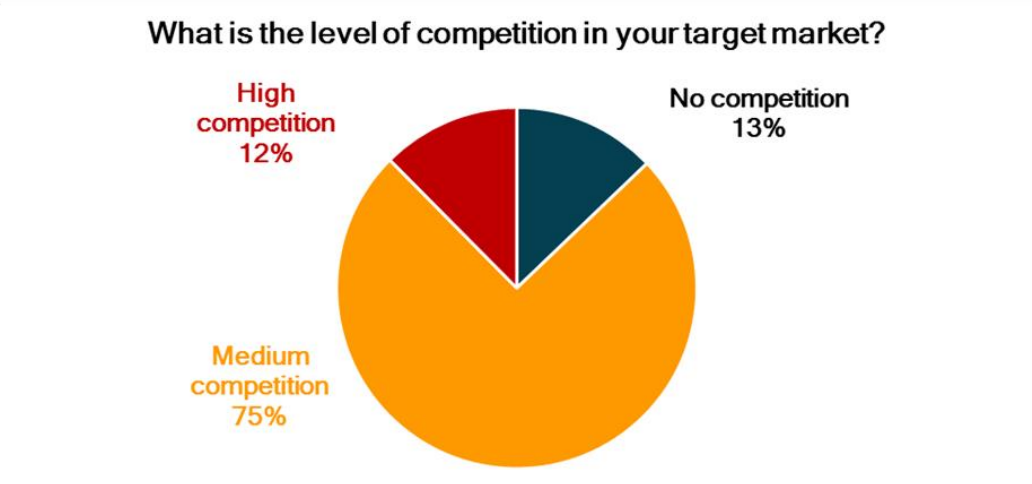
More than half of respondents declared to sell the solution globally and the 45% in multiple countries.

Concerning readiness, the target market dimensions must be carefully checked in relation with the sub grantees' customer acquisition costs, their sales forecasts and marketing plans, and the corresponding required investments. All of these aspects are considered in our Market Focus indicator, taking into account of different requirements placed by different *market types.*

The *type of market* where a start-up can find itself is determined by crossing the question on level of competition (Figure 45), with the question on "type of innovation" introduced

in the Innovation section above. Based on Steve Blank's definition of start-up markets, there are three different situations a sub grantee may find itself in:

- Creating a *new market,* with an entirely new product not yet available to customers; this is identified in our model by no competition and a disruptive innovation;
- Competing with other startups a *starting market,* where some players are already present and customer trends are starting to emerge; this is identified by low-medium competition and disruptive or incremental innovation;
- Competing with established players in a *consolidated market,* where the customers can immediately recognise and judge products and competition is strong; this is identified by incremental innovation and strong competition.



n = 466; respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

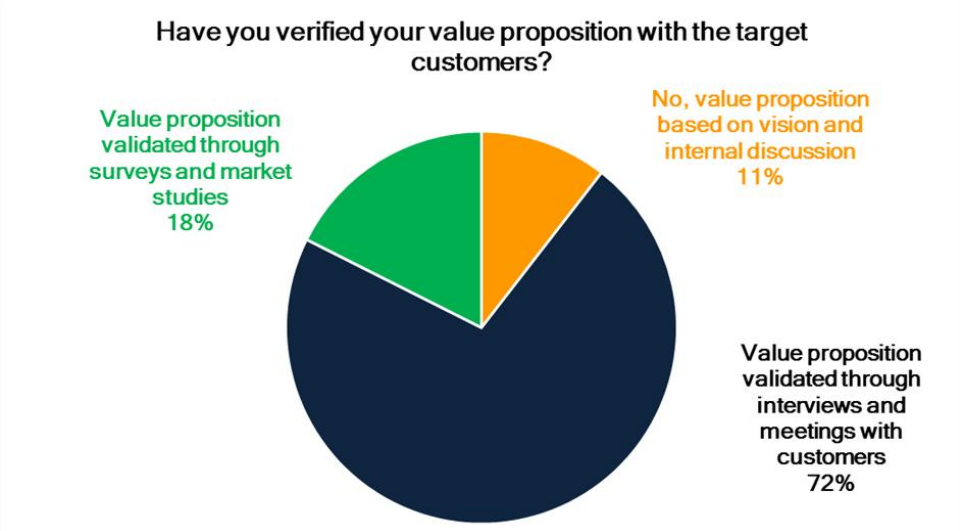
Figure 31 KPI Market Focus: Level of Competition

The three types of market require rather different approaches, and this is taken into account in our Market Model. For example "Unicorn" revenue estimates take into account that this type of startups needs time to "educate" the market and so it will experience little to no growth in the first 3 years, with the potential to grow exponentially afterwards. The situation is different for sub grantees operating in a consolidated market, who will have to get up to speed sooner with marketing and sales activities.

Therefore readiness in this area means understanding the true nature of the company's own product and market, as a basis for product and business development. The current results show that most sub grantees are reaching this understanding. For example 57% of respondents who have declared "No competition" in the target market have a disruptive innovation, while 64% of respondents who have declared "High competition" in the target market have an incremental innovation. There are still several inconsistent or uncertain answers, proving that many still need time to develop knowledge of their market.

The question on value proposition refers to the activities done on the market to validate the sub grantee's value proposition. In terms of readiness, a sub grantee having gone through customer validation will be operating sooner on the market, while an untested

value proposition will probably need to be revised as soon as the first dealings with customers take place, delaying marketing and sales plans.



n = 466; respondents to the FI-IMPACT assessment tool

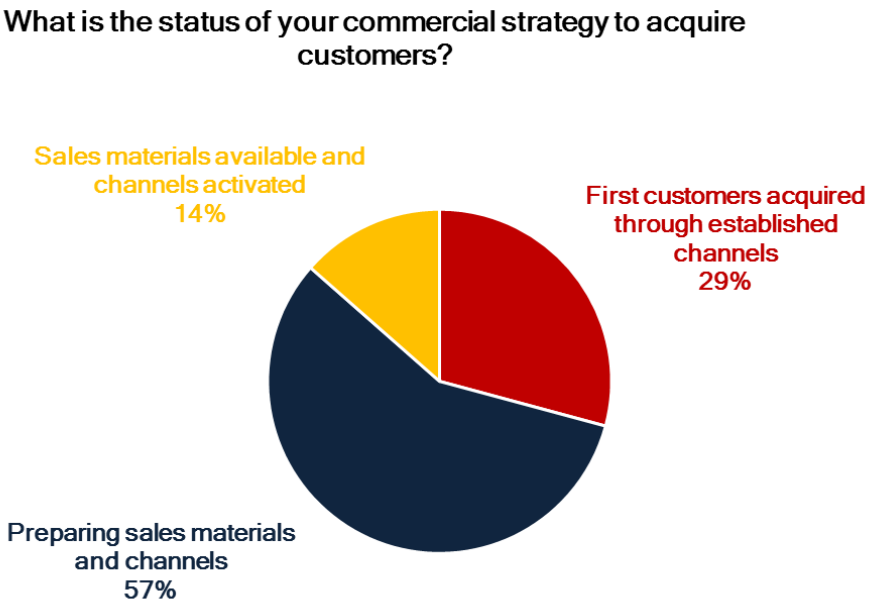
Source: FI-IMPACT 2015

Figure 32 KPI Market Focus: Value Proposition

At this stage, it appears that customer validation mirrors the technology readiness level of the sub grantees:

- 69% of respondents who have declared not having verified the value proposition with the customer, have a TRL between 1 and 4 (Research environment) while only 10% have a TRL between 7 and 9 (Real environment).
- 38% of respondents who have declared having verified the value proposition through interviews and meetings with customers, have a TRL between 1 and 4, while the 39% have a TRL between 7 and 9.
- 56% of respondents who have declared having verified the customer value proposition through surveys and market studies, have a TRL between 1 and 4 while the 20% have a TRL between 7 and 9.

The question on commercial strategy refers to how advanced the company is in defining and executing its marketing and sales strategy. In terms of readiness, a sub grantee having made significant progress in this area is expected to be operating sooner on the market than others who are still mostly focused on product development.



n = 466; respondents to the FI-IMPACT assessment tool

Source: FI-IMPACT 2015

Figure 33 KPI Market Focus: Commercial Strategy

At the present stage, the most advanced in this area appear to be those sub grantees whose idea fits into an existing commercial strategy. 52% of these declare having acquired their first customers through an established channel, while the rest declare that sales materials are available and commercial channels are activated. On the other side, 58% of those who declare they are creating a new standalone offering are still in the process of preparing sales materials and channels.

3.3.1. Market Focus KPI: Measurement Results

The chart below shows the distribution of Market Focus aggregated scores for the 481 respondents of the first round of the Impact Assessment survey, updated at November 3rd 2015.

The score is the weighted average of the answers to the market questions listed above, combining the two main investigated aspects: customer development and market strategy (see Annex 7.1 for the calculation details).

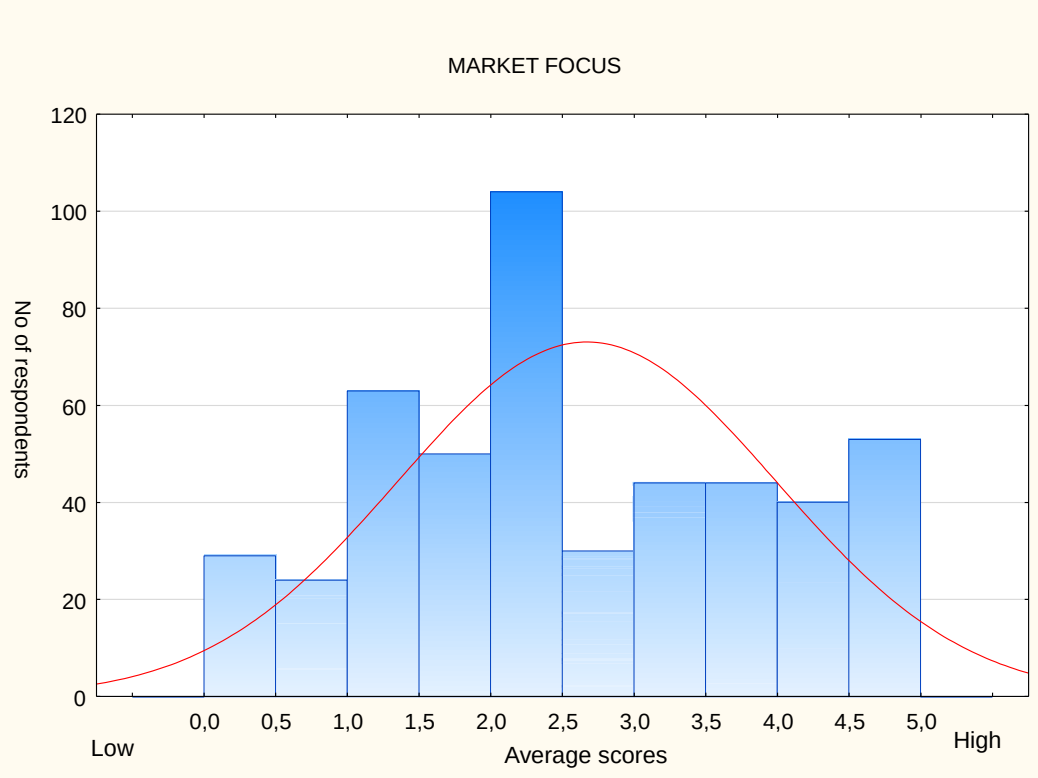
The score corresponds to a scale of high, medium or low level of innovation focus as follows:

- Scores from 0 to 1.6 correspond to a low focus on customer development and market strategy;
- Scores from 1.7 to 3.3 correspond to a medium focus on customer development and market strategy;
- Scores from 3.4 to 5 correspond to a high focus on customer development and market strategy.

The chart below shows the distribution of the sub-grantees scores, which is quite dispersed along the scale, with a peak for the score between 2 and 2.5, corresponding to a medium-low level of market focus. This means that more than half of the respondents demonstrate (according to our survey) a modest knowledge about customers in their target market, and their plans to reach their markets need improvements.

On the other hand, there is also a substantial group of sub-grantees showing a promising approach to their market: about 18% of respondents score between 3 and 4, and another 18% over 4 with a more than satisfactory market focus.

The combination of these results leads to an overall average score of 2.7, corresponding to a medium level of market focus.



N= 472 respondents to the FI-IMPACT Assessment Tool at November 3rd 2015

Source: FI-IMPACT 2015

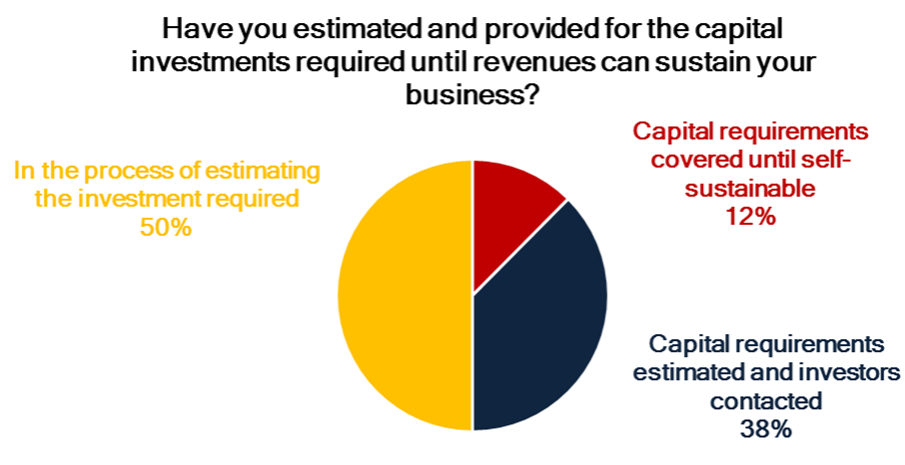
Figure 34 Market Focus KPI Scores

3.4. Feasibility KPI

The Feasibility indicator measures to what extent the sub grantees have assessed the economic viability of their business, and if they have already provided for the necessary funds for the startup phase.

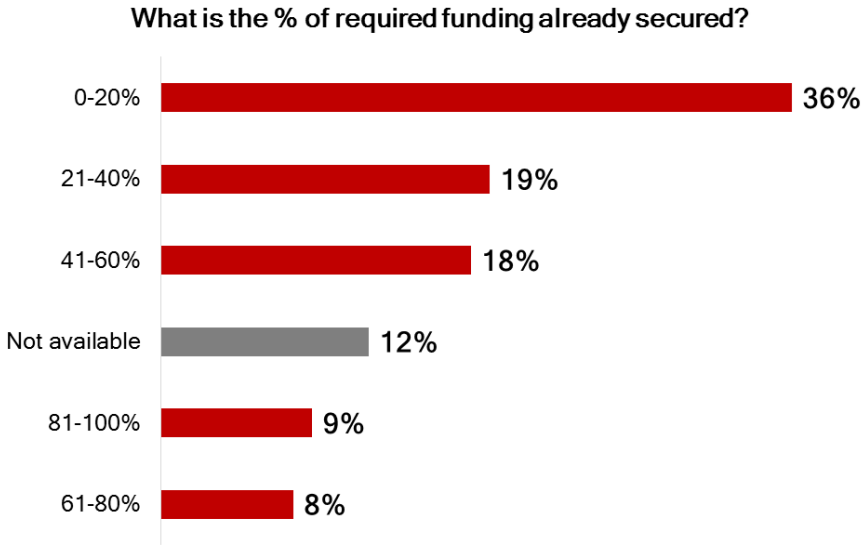
This is relevant for business readiness: those companies who have made themselves aware of the funds required to start and grow the business, and have been securing sources for these funds, are most likely to perform well and avoid failure.

The first two questions on Feasibility concern the sub grantee's estimation of the required capital investments and the company's status in the process of securing these funds.



n = 466; respondents to the FI-IMPACT assessment tool

Figure 35 KPI Feasibility: capital investment estimation



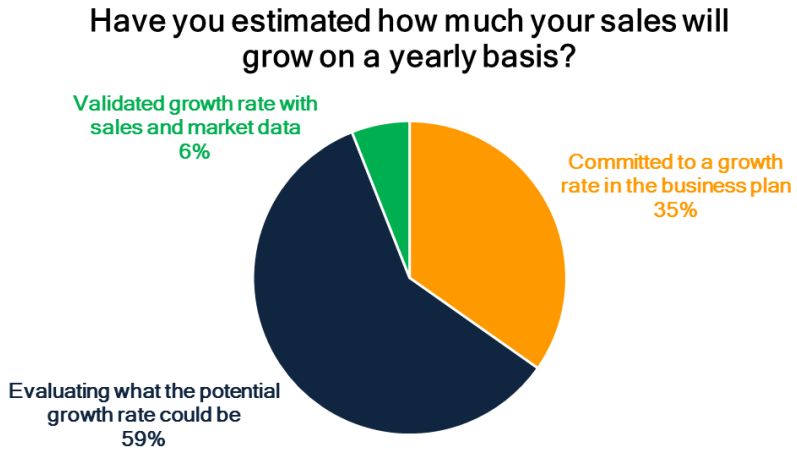
n = 466; respondents to the FI-IMPACT assessment tool

Figure 36 KPI Feasibility: Funds Status

About half of the sub grantees has estimated the investments required to develop their idea and more than half of them (59%) have already secured up to 50% of needed funds. 71% of sub grantees who have already contacted potential investors has secured up to 50% of funds.

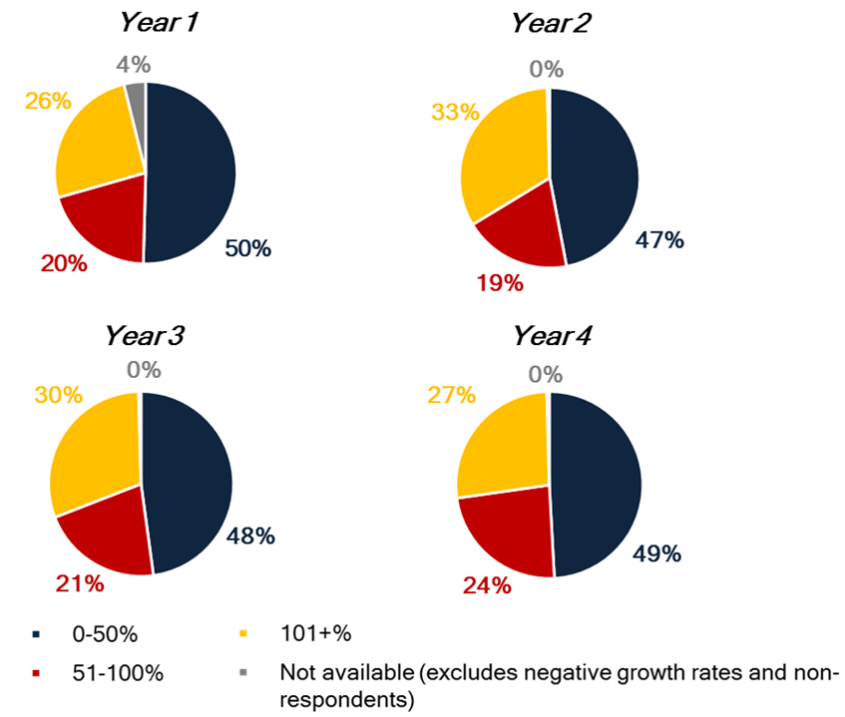
Only a small part of sub grantees (12%) are able to finance themselves to start and grow their business having secured up to 50% of needed funds (33%) or from 50 to 100% (59%).

Sales growth estimations are directly affecting the Market Model, and to this purpose the questions in Figure 50 and Figure 51 have been introduced in the survey.



n = 466; respondents to the FI-IMPACT assessment tool

Figure 37 KPI Feasibility: sales growth estimation



n = 466; respondents to the FI-IMPACT assessment tool

Figure 38 KPI Feasibility: sales growth estimation (year 1, year 2, year 3, year 4)

More than half of sub grantees (59%) is not sure how much the annual sales will grow but the 70% of these has estimated that the sales will not increase annually by more than 100% for the next four years.

Even the majority (65%) of those (35%) who have committed to a growth rate in the Business Plan declare an annual increase of no more than 100%.

On the other hand, 6% of sub grantees, after a first estimate, has validated the growth percentage through sales or market data. About 60% of them declared to expect a sales growth of over 100% in the first two years, and under 100% in the third and fourth years.

A good sales growth estimate or the validation of these, has a positively impact on the sustainability and feasibility of the project.

A further element required for a sound implementation of the business plan, and hence affecting feasibility, is knowledge of the actions and costs required to acquire customers from the target market.

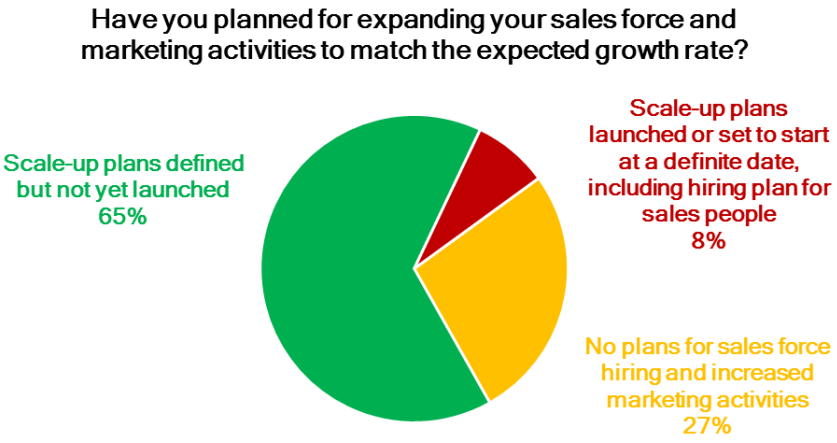
n = 466; respondents to the FI-IMPACT assessment tool

Figure 39 KPI Feasibility: costs of customer acquisition

Generally, the cost and time required to acquire a new customer in the target market are estimated in a bland way in the research stage, more in-depth in the prototyping stage and validated when the product is being made ready for market.

About half of sub grantees (51%) that has not analysed the customer acquisition process are yet in the research environment (TRL 1-4), while more than half of those (61%) who verified and validated the cost and time required to acquire a new customer are in the real environment (TRL 7-9).

Especially for companies operating in mature or starting markets, it is important to have a clear marketing and sales strategy set up since the first year of business. For these companies, readiness is measured also by the level of detail in planning marketing and sales investments.



n = 466; respondents to the FI-IMPACT assessment tool

Figure 40 KPI Feasibility: sales force and marketing activities strategy

The optimal number of salespeople and the marketing activities to achieve the expected growth rate are planned generally after making an accurate estimate of the sales growth. The relation of the figure above and the figure on sales growth estimation, shows that, regardless of the more or less accurate estimate of the sales growth, most of sub grantees have scale up plans but not yet launched.

This was declared by 72% of sub grantees who have defined a growth rate in the business plan, by 61% of sub grantees who have estimated the potential growth rate and by 71% of sub grantees who have validated the growth rate.

The planning of market activities is often related to the technology readiness level of the project: half of sub grantees who have no plans for sales force hiring and increased marketing activities are in the research environment (TRL 1-4) while 61% of sub grantees who have declared that the scale-up plans are launched or set to start at a definite date are in the real environment (TRL 7-9).

3.4.1. Feasibility KPI: Measurement Results

The chart below shows the distribution of Feasibility aggregated scores for the 481 respondents of the first round of the Impact Assessment survey, updated at November 3rd 2015. The score is a weighted average of the answers to the questions described above, focused on the capability to collect the necessary financial resources (see Annex 7.1 for the calculation details).

The score corresponds to a scale of high, medium or low level of Feasibility as follows:

- Scores from 0 to 1.6 correspond to a low level of feasibility;
- Scores from 1.7 to 3.3 correspond to a medium level of feasibility;
- Scores from 3.4 to 5 correspond to a high level of feasibility.

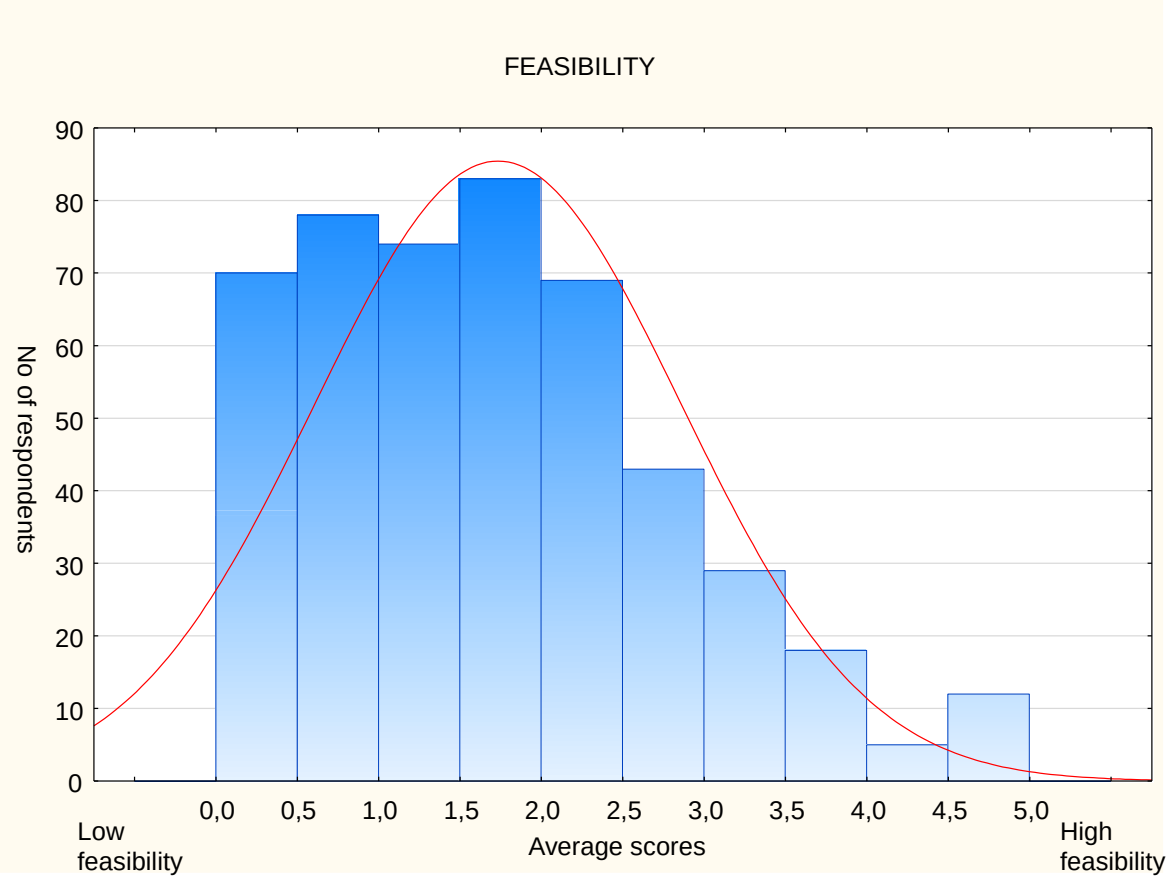
The average score of feasibility is 1.7, and is the lowest of the five KPIs we are measuring.

The chart presented below shows a considerable concentration of the initiatives we are measuring in the lower half of the scale.

We find that nearly 80% of the overall sample is rated under 2.5, and more than 50% of them are below the average.

This may suggest that the majority of these businesses are at an early phase of capital investment, then not self-sustainable yet, and scalability is not their primary target at this stage.

Only 13% is outperforming in this measurement area.



N= 472 respondents to the FI-IMPACT Assessment Tool at November 3rd 2015

Source: FI-IMPACT 2015

Figure 41 Feasibility KPI Scores

3.5. Business market needs KPI

The B2B Market Needs Indicator measures the extent to which the main user benefits generated by the respondent's product or service are aligned with the targeted business sector needs, benchmarked on the basis of IDC data.

A key success factor of funded initiatives is whether their offering will meet the priority needs of their target users. This section analyses the type of potential benefits, as indicated by the sub-grantees in the survey, and to what extent they coincide with B2B or B2G real market needs, based on a benchmark elaborated by IDC.

To simplify the analysis, the questionnaire suggested a pre-defined list of business and public sector potential benefits among which funded initiatives were asked to choose:

- Reducing operational costs
- Improving operational efficiency
- Enhancing customer (citizen for public sector, patient for healthcare) care
- Innovating the product/service companies sell/provide
- Improving sales performance
- Improving marketing effectiveness
- Increasing use and distribution of open data and transparency
- Strengthening multi-channel delivery strategy
- Improving scalability of existing tools
- Simplifying regulatory tasks and complying with regulations
- Improving data protection

The figure below shows the ranking of the business benefits priorities by industry, elaborated on the basis of the IDC Vertical Markets Survey, which was used as the benchmark of comparison with the sub-grantees' answers. The ranking from 1 to 11 in each row of the table reflects the different values given by the companies in a specific industry sector to each of the business needs.

Vertical Markets / Market needs											
Accommodation and food services	2	6	1	9	3	4	11	5	10	8	7
Agriculture	2	4	5	6	3	10	11	8	9	1	7
Arts and Entertainment	3	8	1	6	2	7	10	9	11	4	5
Business Services	4	5	2	8	6	9	11	10	7	3	1
Construction	2	6	3	7	3	9	11	8	10	3	1
Education	2	8	7	5	5	10	4	11	9	1	3
Government	5	6	10	9	4	8	1	7	11	2	3
Healthcare	7	6	2	8	5	10	4	11	9	3	1
Cross-sector Solutions	5	4	6	7	3	8	10	11	9	2	1
Manufacturing	3	2	6	5	7	10	11	9	8	4	1
Wholesale and Retail	3	5	4	8	1	2	11	9	10	7	6
Telecom and Media	8	7	2	5	2	9	10	11	6	4	1
Transport	3	5	4	6	7	9	11	10	8	1	2
Utilities	7	8	6	5	4	2	11	3	10	9	1

Note: in each row numbers from 1 to 11 represent the ranking of the market needs by Vertical Market as per the IDC Vertical Market Survey. 1 = most important need 11= less important need

Source: IDC European Vertical Markets, 2015

Figure 42 KPI Market Needs: Ranking of business needs by industry based on IDC data)

The analysis is based on 466 answers to the following question: "*Which are the main expected benefits your solution will provide for Private and/or Public sector (B2B/B2G)?*" The KPI score is calculated on the basis of the main business market sector selected by

the respondents (identified in the question 3.3 of the Market Focus section of the questionnaire).

In order to rank the main benefits they expect to achieve, the respondents were asked to distribute 6 points (stars) across a list of 11 suggested business benefits. Funded initiatives chose how to distribute the given points, according to how their solutions addresses market needs. They could have put 1 or more points up to 6 to one benefit, or all points in just one answer, assuming that the sum had to be 6 'stars'. They could not score all of the listed benefits. This method obliges the respondents to declare just the main benefits they expect to bring to the market.

Final values are assigned considering the points given to each benefit and the number of successful respondents for each industry sector. In this way, the final score represents the average points each selected proposal targeting that particular industry gave to each business benefit.

Here we compare the answers of the funded initiatives split by industry sector with market needs resulting from the IDC survey. For the funded initiatives, results are presented on the basis of the number of respondents targeting each industry sector. For each industry sector, a table will show which are the top five expected business benefits identified by the funded initiatives and the correspondent top five market needs identified through the IDC survey.

Among the funded initiatives which successfully answered the questionnaire, the most targeted industry sectors are Agriculture, Cross-Sector Solutions, Manufacturing, Healthcare, Business Services, and Government. In these industry sectors, the number of respondents is comprised between 40 and 90. The second group of industry sectors includes Wholesale and Retail, Transport, Arts and Entertainment, Education, Utilities, and Telecom and Media. This group is sought by a number of funded initiatives comprised between 10 and 30. Finally, we find Accommodation and Food Services, with a number of targeting funded initiatives lower than 10.

Agriculture, Forestry and Fishing

Among the 466 respondents, 86 are targeting the agricultural industry.

The top expected business benefits of the funded initiatives addressing the agriculture sector with their solutions deal mostly with the reduction of operational costs and the improvement of data protection.

Agriculture is one of the less advanced sectors in terms of IT spending and technology innovation, and for this reason companies need to adopt new solutions by lowering costs at the same time.

On the other hand, the market needs identified by the IDC survey in this industry give priority to regulatory concerns, to the reduction of operational costs and to the improvement of sales performance.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Reducing operational costs	1. Simplifying regulatory tasks and complying with regulations
2. Improving data protection	2. Reducing operational costs
3. Improving operational efficiency	3. Improving sales performance
4. Increase use and distribution of data transparency	4. Improving operational efficiency
5. Enhancing customer care	5. Enhancing customer care

N= 86 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 2 Agriculture, Forestry and Fishing: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Cross-Sector Solutions

73 startups are developing cross-sector solutions.

Our definition of a Cross-Sector Solution refers to a solution suitable for every industry sector, from marketing applications, to big data/analytics solutions, to content management and back-office applications. In this group, the expected business benefits identified by the funded initiatives are improving data protection and reduction of operational costs. There is a good correspondence with the market need identified through the IDC survey.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving data protection	1. Improving data protection
2. Reducing operational costs	2. Simplifying regulatory tasks and complying with regulations
3. Improving scalability of existing tools	3. Improving sales performance
4. Enhancing customer (citizen for public sector, patient for healthcare) care	4. Reducing operational efficiency
5. Improving sales performance	5. Reducing operational costs

N= 73 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 3 Cross-sector: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Manufacturing

The 55 initiatives targeting this sector are related to a variety of manufacturing sub-sectors, from automotive to white goods, and from textile to plastic. Innovative projects include IoT for supply chain and logistic, 3D printing factories, intelligent transport items, and innovative internet based feature in equipment and machines. In this sector, the expected business benefits are reduction of operational costs and improving data protection. Improving sales performance and operational efficiency are two other key issues that projects targeting this sector want to address.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Reducing operational costs	1. Improving data protection
2. Improving data protection	2. Improving operational efficiency
3. Improving sales performance	3. Reducing operational costs
4. Improving operational efficiency	4. Simplifying regulatory tasks and complying with regulations
5. Enhancing customer care	5. Innovating the product or service companies sell/provide

N= 55 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 4 Manufacturing: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Healthcare

46 initiatives are addressing the healthcare sector with their solutions.

Innovating the product or service the organizations provide is the business benefit to which is assigned the highest value. The second benefit the funded initiatives are expected to deliver is reducing operational costs.

The healthcare sector is requested to reduce costs, especially in the public sector, and selected projects are identifying it as a key issue.

Healthcare is one of those sectors for which correspondence between business benefits and market needs is above the average and so there is a very good match.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Innovating the product or service companies sell/provide	1. Improving data protection
2. Reducing operational costs	2. Enhancing patient care
3. Improving sales performance	3. Simplifying regulatory tasks and complying with regulations
4.Improving data protection	4. Improving sales performance
5. Simplifying regulatory tasks and complying with regulations	5. Increasing use and distribution of open data and transparency

N= 46 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 5 Healthcare: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Business Services

The analyzed 41 funded initiatives targeting Business Services give the highest value to improving sales performance. Among the other business benefits, they similarly expect to enhance customer care, reduce operational costs, improve data protection and improve operational efficiency. Business services industry needs are well addressed by the funded initiatives, as the index is the highest, together with manufacturing.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving sales performance	1. Improving data protection
2. Enhancing customer care	2. Enhancing customer care
3. Reducing operational costs	3. Simplifying regulatory tasks and complying with regulations
4. Improving data protection	4. Reducing operational costs
5. Improving operational efficiency	5. Improving operational efficiency

N= 41 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 6 Business services: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Government

This market is addressed by 41 initiatives.

Funded initiatives valued the innovation of the services they provide and improving data protection as the first and second business benefits to deliver. Among other choices they also valued as important the improvement of scalability of existing tools, the reduction of operational costs and the improvement of performance, following the aim of a better

management of public sector resources. Government business needs are not well aligned to IDC ones, and the resulting index of correspondence is below the average.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Innovating the product or service companies sell/provide	1. Increasing use and distribution of open data and transparency
2. Improving data protection	2. Simplifying regulatory tasks and complying with regulations
3. Improving scalability of existing tools	3. Improving data protection
4. Reducing operational costs	4. Improving performance
5. Improving performance	5. Reducing operational costs

N= 41 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 7 Government: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Wholesale and Retail

28 initiatives are targeting the wholesale and retail industry where "improved operational efficiency" is the number one benefit they expect to deliver. Also reducing operational costs and enhancing customer care are considered of similar importance, highlighting the concentration of answers on the top three points. According to the IDC Data, the funded initiatives targeting the wholesale and retail industry sector should make a sanity check to understand if they are aligned with market needs.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving operational efficiency	1. Improving sales performance
2. Reducing operational costs	2. Improving marketing effectiveness
3. Enhancing customer care	3. Reducing operational costs
4. Improving sales performance	4. Improving operational efficiency
5. Innovating the product or service companies sell/provide	5. Enhancing customer (citizen for public sector, patient for healthcare) care

N= 28 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 8 Wholesale and Retail: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Transport

25 funded initiatives targeting Transport considered reducing operational costs the most important business benefit they can deliver with their projects. Similar values are given to innovating the product or service, improving data protection and sales performance. The IDC data indicates a satisfactory level of alignment.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Reducing operational costs	1. Simplifying regulatory tasks and complying with regulations
2. Innovating the product or service companies sell/provide	2. Improving data protection
3. Improving data protection	3. Reducing operational costs
4. Improving sales performance	4. Enhancing customer care
5. Improving marketing effectiveness	5. Improving operational efficiency

N= 25 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 9 Transport: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Arts and Entertainment

The 17 funded initiatives focused on this industry sector assigned similar values to four business benefit they expect to address. The first in order of importance is enhancing customer care, as the business of companies in this industry sector is directly influenced by customer satisfaction. Other business benefits are improving sales performance and operational efficiency, and reducing operational costs.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Enhancing customer care	1. Enhancing customer care
2. Improving sales performance	2. Improving sales performance
3. Improving operational efficiency	3. Reducing operational costs
4. Reducing operational costs	4. Simplifying regulatory tasks and complying with regulations
5. Improving data protection	5. Improving data protection

N= 17 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 10 Arts and Entertainment: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Education

For Education, multiple business benefits are considered important. This result shows that 16 funded initiatives targeting this market consider that different market needs have to be addressed. Improving sales performance and improving scalability of existing tools are considered of primary importance, followed by reducing operational costs, improving operational efficiency and innovating the product or service. Education, together with agriculture, is the industry in which expected business benefits are not very consistent with IDC ones.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving sales performance	1. Simplifying regulatory tasks and complying with regulations
2. Improving scalability of existing tools	2. Reducing operational costs
3. Reducing operational costs	3. Improving data protection
4. Improving operational efficiency	4. Increasing use and distribution of open data and transparency
5. Innovating the product or service companies sell/provide	5. Innovating the product or service companies sell/provide + 5. Improving sales performance

N= 16 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 11 Education: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Utilities

A little part of the funded initiatives is targeting the utilities market (16).

In this industry sector, reducing operational costs is considered of primary importance, then we find improving sales performance and improving data protection. Improving operational efficiency follows. All the others are valued quite below the top list of benefits.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Reducing operational costs	1. Improving data protection
2. Improving sales performance	2. Improving marketing effectiveness
3. Improving data protection	3. Strengthening multi-channel delivery strategy
4. Improving operational efficiency	4. Improving sales performance
5. Simplifying regulatory tasks and complying with regulations	5. Innovating the product or service companies sell/provide

N= 16 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 12 Utilities: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Telecom and Media

All the benefits identified for Telecom and Media are related with efficiency, as the highest values are assigned to improving sales performance, improving marketing effectiveness and reducing operational costs. Enhancing customer care follows. Funded initiatives targeting this industry sector, and successfully answering the questionnaire, are only 14.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving sales performance	1. Improving data protection
2. Improving marketing effectiveness	2. Enhancing customer care
3. Reducing operational costs	3. Improving sales performance
4. Enhancing customer care	4. Simplifying regulatory tasks and complying with regulations
5. Improving data protection + 5. Simplifying regulatory tasks and complying with regulations	5. Innovating the product or service companies sell/provide

N= 14 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 13 Telecom and Media: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

Accommodation and Food Services

The number of analyzed funded initiatives targeting Accommodation is only 7. These respondents identified improving operational efficiency and enhancing customer care as the main business benefits to deliver with their project. Other benefits deal with the management of costs and sales, as they are identified in reducing operational costs and improving sales performance.

Also data protection can be considered an important market need for the funded initiatives.

Accommodation and food services index of correspondence is positioned in the middle of the classification.

Top five Expected Business Benefits of the funded initiatives	Top five Market Needs from IDC survey
1. Improving operational efficiency	1. Improving operational efficiency **+** 1. Enhancing customer care
2. Enhancing customer care	2. Reducing operational costs
3. Improving sales performance	3. Improving sales performance
4 Reducing operational costs	4. Improving marketing effectiveness
5. Improving data protection	5. Strengthening multi-channel delivery strategy

N= 7 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 14 Accommodation and Food Services: Top five Expected Business Benefits of the funded initiatives compared to Top five Market Needs from IDC survey

3.5.1. Business market needs KPI: Measurement results

This indicator is measured on 466 funded initiatives responding to the IA survey that are targeting at least one of the business markets identified by IDC.

To give better insights we have calculated the aggregated scores separately by sector and for the entire group of initiatives.

Results by industry sector

The table below shows the ranking of aggregated Market Needs KPI scores by industry on a scale of high, medium or low level of alignment with B2B market needs as follows:

- Scores between 6.7 - 10: high level of alignment between the sub-grantees answers and the IDC benchmark of real market needs;
- 3.3 – 6.6: medium level of alignment;

0-3.2: low level of alignment.

This score is calculated from 0 to 10 in order to highlight better the differences between the performance levels by industry sector.

The analysis suggests that initiatives targeting Manufacturing, Business Services and Cross-sectors Solutions show the highest correspondence with the IDC benchmark data, and therefore their potential benefits are well aligned with real market needs.
Interestingly, the results for all the other sectors fall in the medium level of the scale, even if there are clear differences. The expected benefits of Healthcare solutions appear rather coherent with market needs, close to the high performance level of the scale, while respondents targeting the Agriculture and Education sectors appear to be less aligned with real market needs. A positive consideration is that for no sector the score falls in the low level of alignment area of the scale.

Initiatives addressing B2B Market	Index Value	Index Classes	Correspondence with benchmark
Manufacturing	7.3	6.7 - 10	High
Business Services	7.3		
Cross Sectors Solutions	6.6	3.3 - 6.6	Medium
Healthcare	6.1		
Utilities	6		
Accommodation and Food Services	5.6		
Arts and Entertainment	5.5		
Transport	5.5		
Telecom and Media	5.2		
Wholesale and Retail	5.1		
Government	5		
Agriculture	4.5		
Education	4.5		
		0 - 3.2	Low

N = 466 respondents to the FI-IMPACT Assessment Tool

Source: FI-IMPACT elaboration on IDC European Vertical Markets, 2015

Table 15 KPI Market Needs: index of correspondence between business benefits and market needs

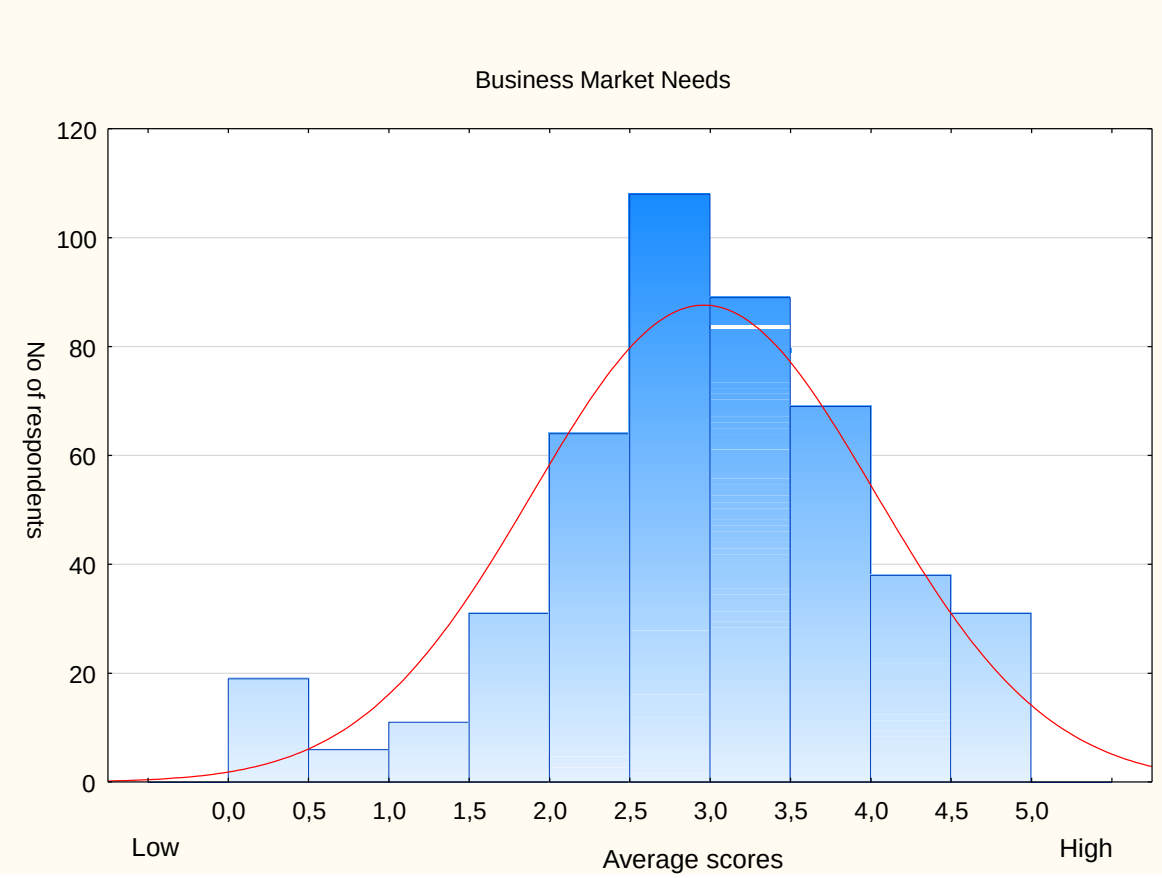
Aggregated results

The measurement of the Market Needs KPI for the whole group of funded initiatives is graded on a 0 to 5 scale to allow comparability with the other KPIs (but the underlying data is the same). The score corresponds to a scale of high, medium or low level of alignment of respondents' answers with B2B market needs as follows:

- Scores from 0 to 1.6 correspond to a low alignment;
- Scores from 1.7 to 3.3 correspond to a medium level of alignment;
- Scores from 3.4 to 5 correspond to a high level of alignment.

The table below shows the distribution of initiatives along the scale. The average score is 2.9 on the 5-points scale and is the second highest among KPIs after the Innovation's one: it corresponds to a medium level of performance in the delivery of benefits aligned with Business Market Needs.

Overall, these initiatives demonstrate to have a good knowledge of the real needs of their target markets as they are mostly positioned in the highest half of the measurement scale. In addition, 52% of the respondents score above the average.



N= 466 respondents to the FI-IMPACT Assessment Tool at November 3rd 2015

Source: FI-IMPACT 2015

Figure 43 B2B Market Needs KPI Score

3.6. Consumer market needs KPI

The B2C Market Needs Indicator measures the extent to which the main user benefits generated by the respondent's product or service are aligned with the targeted consumer market needs, benchmarked on the basis of IDC data.

This section shows the type of benefits respondents expect to deliver to their consumer customers, compared with a benchmark elaborated by IDC based on external sources and expert assessment. The classification by consumer market segment was decided by IDC based on the assessment of the respondents type of solution, and was not based on self-declaration.

The resulting score measures the coherence between the respondent answers and the benchmark, therefore providing an assessment of the respondents' capability to understand the priority needs of their market. The benchmark of this KPI is based on external sources and IDC's expert assessment, identified and applied to calculate the indicator in the same way as the business needs.

Results are based on the answers to the following question: "*Which are the main expected benefits your solution will provide for Consumers (B2C)?*" As in the case of B2B/B2G, the respondents had the possibility to distribute 6 given point (stars) across a list of 7

suggested benefits. The respondents to this question were 174: 172 of them gave incomplete answers that were not elaborated. The elaborations are based on 102 answers.

The list of potential benefits was the following:

- Answering communication/collaboration needs
- Providing better entertainment
- Improving quality of life
- Simplifying daily tasks
- Reducing/Saving time
- Having easier and faster access to information/services
- Saving money

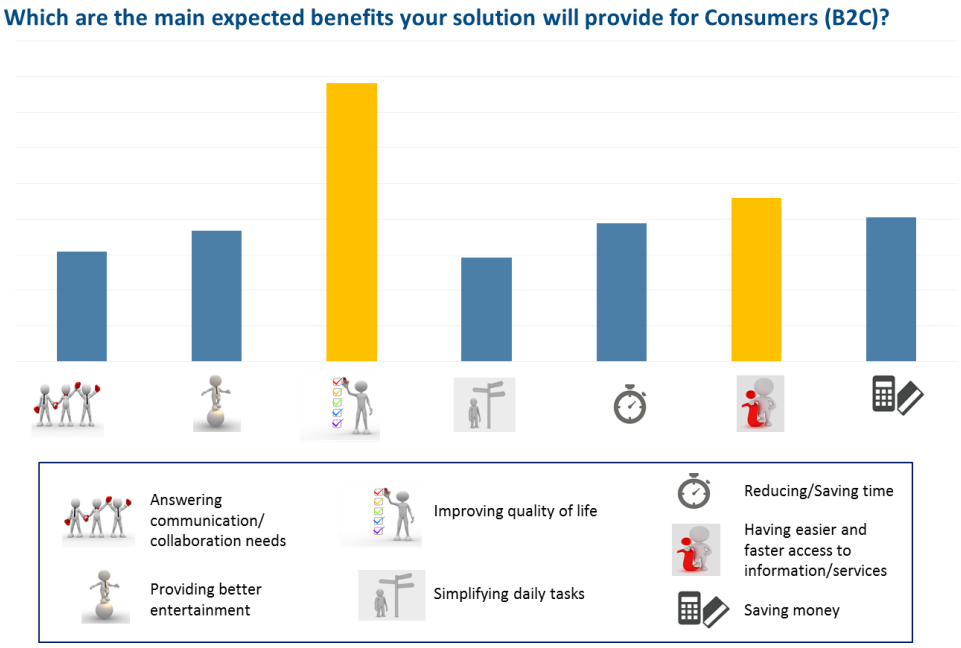
Based on our classification of initiatives, we have grouped the respondents in the following segments:

- **Leisure and gaming (28 initiatives)**: this category includes consumer gaming applications as well all those solutions related to entertainment.
- **Health and wellness (23 initiatives)**: this category is related to those solutions that have the purpose of improving health and wellbeing. They range from solutions for assisting blind and visually impaired people to those to support diets and sport activities.
- **DIY/Design (12 initiatives)**: this category relates to supporting Do It Yourself activities and most initiatives in this segment refer to 3Dprinting (e.g. re-manufacturing of existing objects through 3D scanning and printing, capturing of reality in 3D through smartphones, etc.)
- **Transport and logistics (12 initiatives)**: these initiatives are related to the mobility of people and objects and can therefore be related to applications for parking facilities, for real time traffic information, or for taxi requests among others.
- **Education and culture (8 initiatives)**: education and culture initiatives are related to many areas such as for example applications to learn new languages, solutions for remote coaching over the Internet on different topics including unconventional musical instruments, to mobile apps to guide visitors in 3D around heritage centers.
- **Consumer shopping (6 initiatives)**: This category includes consumer solutions created to improve the shopping experience.
- **Environment and nature (6 initiatives)**: these initiatives can be related to gathering information and data on pollution, or to collect and receive information for wildfire prevention among others.
- **Citizens' engagement (3 initiatives)**: citizens' engagement initiatives refer in most cases to systems for government-citizen interaction.
- **Energy and home automation (0 initiatives)**: these are initiatives such as a virtual social network that enable people to run their home appliances when there is green energy production close to their homes or to automatically lock or unlock all the doors in a building.

- **Other** (4 initiatives): solutions that do not fall into any of the just mentioned categories

As the results show, the majority of funded initiatives expect to deliver to their customers improvements of quality of life and faster access to information and services. Simplifying daily tasks if the benefit least mentioned by respondents.

The figure below shows the overall ranking of B2C benefits based on the votes given by respondents, with the first and second most voted benefits highlighted in yellow.



Base: n = 102 respondents

Source: FI-Impact Impact Assessment Questionnaire 2015

The expected benefits may have a different priority in each of the market segments identified above. The following tables present the ranking of the most voted market needs by market segment compared with the ranking provided by our benchmarks.

Leisure and gaming

We find 28 initiatives in this segment.

Their top expected benefits to consumers concern the entertainment and consequently the improvement of the quality of life, followed by an easier access to information and services.

As the table shows, the rankings are almost identical.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Providing better entertainment	1. Providing better entertainment
2. Improving quality of life	2. Improving quality of life
3. Having easier and faster access to information/services	3. Having easier and faster access to information/services
4. Answering communication/collaboration needs	4. Answering communication/ collaboration needs
5. Reducing/Saving time	5. Saving money

N= 28 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 16 Leisure and gaming: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Health and wellness

The initiatives (23) in this category expect to improve their customers' quality of life and help accessing information and service in an easier way. They are also focused on supporting the collaboration and communication.

Overall, there is a good match between their answers and our benchmark for this market.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Improving quality of life
2. Having easier and faster access to information/services	2. Providing better entertainment
3. Answering communication/collaboration needs	3. Having easier and faster access to information/services
4. Simplifying daily tasks	4. Simplifying daily tasks
5. Reducing/Saving time	5. Answering communication/ collaboration needs

N= 23 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 17 Health and wellness: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Transport and logistics

In this market 12 responses show a high correspondence with the benchmark.

The improvement of the quality of is life is most important need to be addressed by these initiatives.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Simplifying daily tasks
2. Simplifying daily tasks	2. Having easier and faster access to information/services
3. Reducing/Saving time	3. Improving quality of life
4. Answering communication/collaboration needs	4. Saving money
5. Having easier and faster access to information/services	5. Reducing/Saving time

N= 12 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 18 Transport and logistics: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

DIY and design

We found 12 initiatives in this market: they have a clear idea of what are the needs to be addressed through their solutions. Their main concern is about the improvement of their customers' quality of life, followed by their entertainment. The priorities identified by the respondents are consistent with our benchmark.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Providing better entertainment
2. Providing better entertainment	2. Simplifying daily tasks
3. Reducing/Saving time	3. Improving quality of life
4. Having easier and faster access to information/services	4. Saving money
5. Answering communication/collaboration needs	5. Reducing/Saving time

N= 12 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 19 DYI and design: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Education and culture

The results show that 8 initiatives in this market consider improving quality of life as the most important benefits for their customer, besides providing better entertainment.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Having easier and faster access to information/services
2. Providing better entertainment	2. Improving quality of life
3. Answering communication/collaboration needs	3. Saving money
4. Simplifying daily tasks	4. Providing better entertainment
5. Having easier and faster access to information/services	5. Reducing/Saving time

N= 8 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 20 Education and culture: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Shopping

Through their solutions, the 6 initiatives in this market consider time savings and simplifying daily tasks as the most important benefits for their customers. Also time and money savings have high priorities in their ranking.

Overall, there is a good match with the identified benchmark.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Reducing/Saving time	1. Reducing/Saving time
2. Simplifying daily tasks	2. Saving money
3. Having easier and faster access to information/services	3. Having easier and faster access to information/services
4. Improving quality of life	4. Simplifying daily tasks
5. Answering communication/collaboration needs	5. Improving quality of life

N= 6 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 21 Shopping: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Environment and nature

The analysed 6 initiatives in this market give the highest values to improving the quality of life and improving access to information and services. Overall they are consistent with the priorities identified by our benchmark.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Improving quality of life
2. Having easier and faster access to information/services	2. Having easier and faster access to information/services
3. Reducing/Saving time	3. Answering communication/ collaboration needs
4. Simplifying daily tasks	4. Providing better entertainment
5. Answering communication/collaboration needs	5. Simplifying daily tasks

N= 6 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 22 Environment and nature: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

Citizen engagement

We found only 3 initiatives in this market. These initiatives consider improving the quality of life as the top benefit to deliver to their customers. Enhancing communication and collaboration is also important. As the table shows, there is a good match of priorities in the different rankings.

Top five Expected Consumer Benefits of the funded initiatives	Top five Expected Consumer Benefits of the benchmark
1. Improving quality of life	1. Answering communication/ collaboration needs
2. Answering communication/ collaboration needs	2. Having easier and faster access to information/services
3. Reducing/Saving time	3. Improving quality of life
4. Having easier and faster access to information/services	4. Simplifying daily tasks
5. Simplifying daily tasks	5. Reducing/Saving time

N= 3 respondents selecting this market at November 3rd 2015

Source FI-IMPACT 2015

Table 23 Citizen engagement: Top five Expected Consumer Benefits of the funded initiatives compared to Top five Market Needs from the benchmark

3.6.1. Consumer market needs KPI: Measurement results

This indicator is measured on 102 funded initiatives responding to the IA survey who were classified by IDC as addressing the consumer market. To give better insights we have calculated the aggregated scores separately by consumer market segment and for the entire group of initiatives.

Results by Consumer Market segment

The table below shows the ranking of aggregated Consumer Market Needs KPI scores by segment. The scores are classified on a scale of high, medium or low level of alignment with Consumer market needs as follows:

- 6.7 - 10: high level of alignment between the sub-grantees answers and the IDC benchmark of real market needs;
- 3.3 – 6.6: medium level of alignment;
- 0-3.2: low level of alignment.

This score is calculated from 0 to 10 in order to highlight better the differences between the performance levels by market segment.

The findings from our measurement highlight that:

- All consumer markets are positioned in the high or medium part of the scale, meaning that their potential benefits are coherent with their markets' priority needs, even if there are differences between the various market segments;
- Six consumer market segments out of eight are positioned in the higher part of the scale, showing a high level of alignment with market needs;
- Initiatives targeting the citizen engagement, DIY and design, environment and nature segments demonstrate a higher alignment with their customers' needs compared to the others;
- Initiatives targeting the education/culture and consumer shopping segments show a medium level of performance, even though they are still well above the threshold of low alignment with market needs.

Initiatives addressing B2C Market	Index Value	Index Classes	Correspondence with benchmark
Consumer citizen engagement	8.2	6.7 - 10	High
Consumer DIY/design	7.9		
Consumer environment & nature	7.9		
Consumer transport & logistics	7.6		
Consumer health/wellness	7.4		
Consumer leisure/gaming	7.2		
Consumer education/culture	6.6	3.3 - 6.6	Medium
Consumer shopping	5.8		
		0 - 3.2	Low

N = 102 respondents to the FI-IMPACT Assessment Tool

Source: FI-IMPACT elaboration on IDC European Vertical Markets, 2015

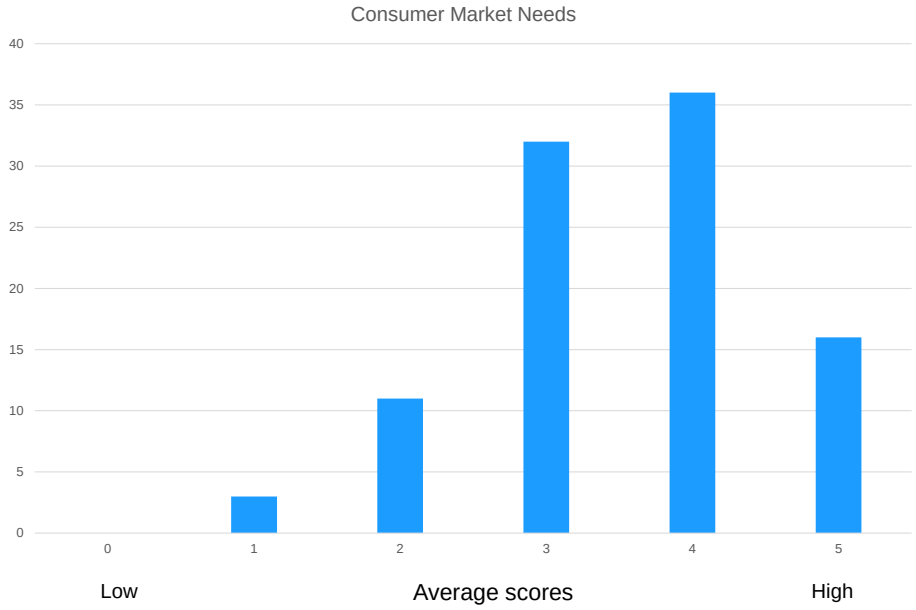
Table 24 KPI Market Needs: index of correspondence between consumer benefits and B2C market needs

Aggregated results

This score is calculated on a 5-point scale, in order to allow for comparability with the other KPIs. As above, the KPI measures the extent to which perceived user benefits associated with a consumer solution are aligned with our benchmark of consumer needs as follows:

- Scores from 0 to 1.6 correspond to a low alignment;
- Scores from 1.7 to 3.3 correspond to a medium level of alignment;
- Scores from 3.4 to 5 correspond to a high level of alignment.

The overall average score is 3.5, corresponding to a high level of alignment, between the consumer benefits provided by the initiatives and the benefits prioritized by users. This score is higher than the average score for business market needs of 2.9.



N= 102 respondents to the FI-IMPACT Assessment Tool at November 3rd 2015

Source: FI-IMPACT 2015

Figure 44 B2B Market Needs KPI Score

3.7. Potential social impacts

FI-IMPACT's potential social impact measurements aims at the definition and approach towards identifying and measuring potential social impacts which arise through the implementation of the FI-PPP Phase III accelerator programme.

The social impact indicators reflect the extent to which sub-grantees have social impact in eleven key areas. They focus on identifying specific social benefits that sub-grantees will support and the contribution to quality of life for specific social groups. It also contextualises the impact of sub-grantees against the average social impact of all surveyed projects in these areas.

A potential social impact is hereby defined as (based upon the most common viewpoints on social impact found in an extensive literature review): "The effect of an activity on the social fabric of the public and well-being of the individuals and community groups.[3]"

The indicators for the social impact are derived from the main focus areas within the FI-PPP programme, the societal challenges of the Horizon 2020 programme, and the FI-PPP Phase II. For FI-PPP Phase II we analysed the described use cases, which were used to test the developed technologies in real world scenarios[4].

The measurement of readiness of projects of FI-PPP Phase III was conducted with two key questions regarding potential social impacts. After careful consideration the list of questions regarding social impacts was limited to the two following questions to keep the questionnaires short enough. Including more questions might have resulted in decreased return rates of sub-grantees answering the questionnaires, mainly as it might have been considered as too overwhelming.

The measurement of readiness addresses the following key social benefits of the FI-PPP Phase III:

- Perceived security of communities, neighbourhoods and housing
- Protection of privacy and security of personal digital data
- Citizens involvement and participation in open government
- E-inclusion
- Fitness and well-being
- Health
- Quality of life in urban areas
- Quality of life as a result of better access to information and data
- Social inclusion
- Access and use of e-learning and innovative learning methodologies
- Demand and use of sustainable transport solutions

Additionally, the readiness measurement asks specifically for the contributions for the following social groups:

[3] Compare with IAIA's (International Association for Impact Assessment) KEY CITATIONS list for social impact assessment (http://www.iaia.org)

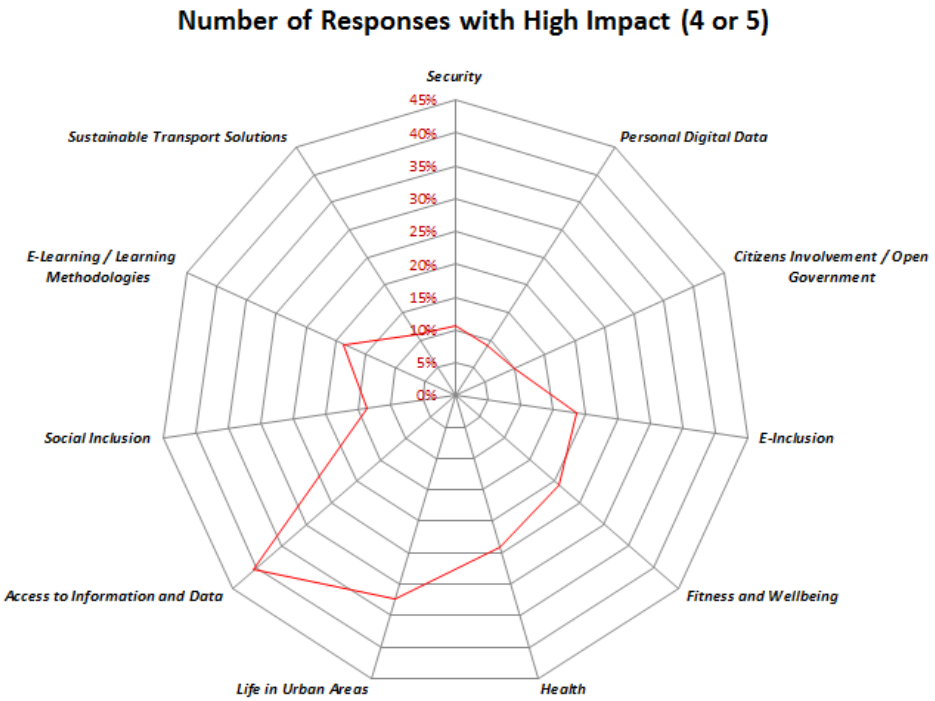
[4] See project list for FI-PPP Phase 2 on https://www.fi-ppp.eu/

- Unemployed
- Socially excluded groups (e.g. homeless, immigrants, etc.)
- Low income (e.g. unemployed single parents)
- Ethnic or cultural minorities
- Elderly (over 65 years old)
- Disabled

The questions were answered in a range from 1 to 5, whereas 1 is the lowest value, i.e. no impact, and 5 is the highest. For the key social benefits the above average (i.e. high impact), highest scoring answers are ease of data access and quality of life in urban areas. Through this indicator we deduce that the sub-grantees of the FI-Accelerator programmes are taking their roles in including EU citizens and end-user seriously, especially in the particular thematic accelerators which target Smart Cities and social inclusion. Another key social benefit clearly highlighted by the sub-grantees responses is health, fitness and well-being, which is a rather surprising result, especially consider that most of the FI accelerators do not directly feature this topic. Whether this fact resulted from the Zeitgeist of the European society or concrete business demands remains open to future FI-IMPACT assessments.

The highest scoring groups are elderly and disabled people. The lowest scoring are socially excluded citizens. The strong focus on elderly and disabled people can be seen as a direct result from the focus on health topics, as portrayed in the key social benefits above. The lack of sub-grantees targeting solutions for socially excluded citizens seems to be directly linked to a missing market potential for this groups. This is, however, by no means as obvious as it may seems, as sub-grantees working on solutions for the Smart City realm or health topics, might have taken up on working on interesting innovations for socially excluded. This is also a stark contrast to the social group of ethnic or cultural minorities, which scores average. One would expect these two groups to be strongly correlated and achieve similar results. With a more detailed analysis and question sets, FI-IMPACT will be able to shed some light upon these questions in up-coming investigations on social impact.

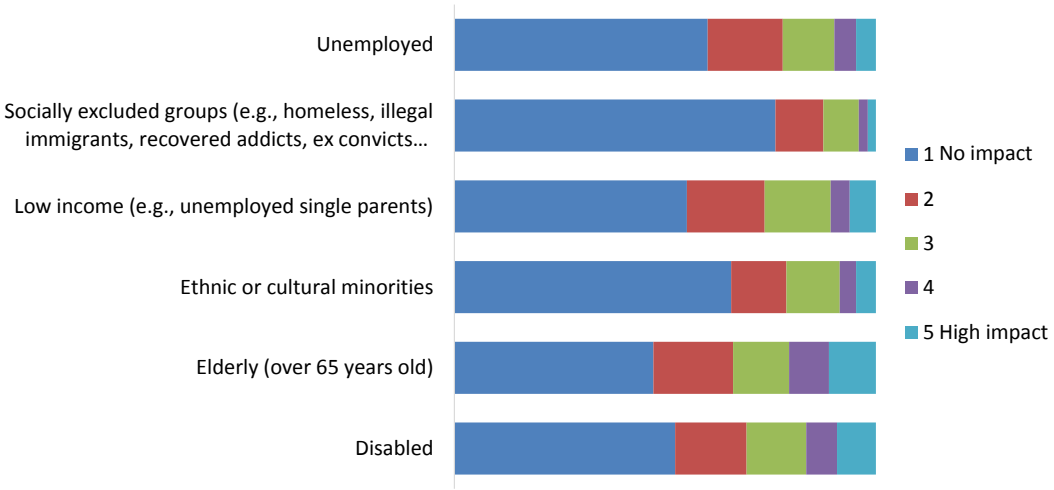
For both the social key benefits and for the targeted social groups a more holistic analysis, combining the limited data with additional dimensions will allow for more detailed and complete conclusions.



N= 466 respondents to the FI-IMPACT Assessment Tool

Source: FI-IMPACT 2015

Figure 45 Overview results social benefits and benefits with high impact



N= 466 respondents to the FI-IMPACT Assessment Tool

Source: FI-IMPACT 2015

Figure 46 Averages and overview for answers to social groups

3.8. Key Findings

3.8.1. Key Performance Indicators

Overall, the KPIs fall in the medium performance area of our evaluation scale, but they present relevant differences.

The **Consumer Market Needs KPI** shows an average score of 3.5, corresponding to a high average performance. This is excellent, since B2C initiatives have a potentially high demand and chances of success. However, the indicator is based on a small number of respondents (102), which may have been a factor. Also, the coherence between projected benefits and real consumer needs is particularly high for the citizen engagement, DIY and design, environment and nature segments.

With an average score of 3.1 **the Innovation KPI** is the next highest in our measurement: these initiatives are developing solutions with high potential of innovation, and they generally are also well positioned in terms of closeness to the market.

The Business Market Needs KPI is a little lower with an average score of 2.9. The initiatives with a focus on B2B and B2G markets aim at delivering benefits broadly aligned with their customers' needs. The results by sector underline some differences: initiatives targeting the Manufacturing, Business Services and Cross-sectors Solutions show a good alignment with market needs, while those targeting Agriculture and Education appear further from customer priorities.

The Market Focus KPI has an average score of 2.7, corresponding to a medium level of performance. This indicator presents a polarization of respondents between a group of with low scores (under 2) and a substantial group (about 30%) with high scores (over 3.3). In other words, there is a group of initiatives who would need to spend more time in developing their market plans in order to succeed in the market.

Finally, the **Feasibility indicator** has the lowest score of all KPIs, 1.7, at the threshold marking the low level of performance. These initiatives appear to be on average at a very initial phase of development of their solution and of their process of securing funds.

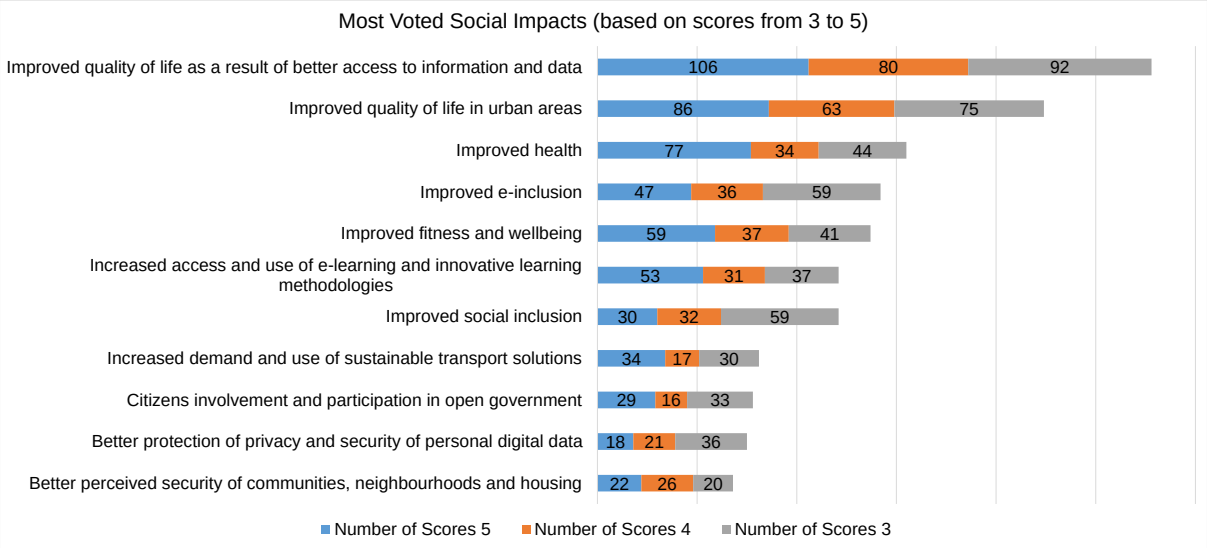
3.8.2. Potential social impacts

In our assessment we also consider whether these initiatives are focusing on the achievement of social impacts through their solutions: the results show that for many of them this topic is not their "number one" priority.

However, among the topics we proposed in our questionnaire, the respondents' main social concerns are the following:

- Improving the quality of life
- Improve access to information and data
- Improve general wellbeing (health and fitness) and e-inclusions

Also, improving fitness and wellbeing, and increasing access to e-learning tools were perceived important as they were scored with the maximum values by a high number of respondents.



N= 466 respondents to FI-IMPACT Assessment Tool, considering only scores from 3 to 5 in a scale from 1 (no impact) to 5 (high impact)

Source: FI-IMPACT 2015

Figure 47 The most addressed social impacts by the respondents of FI-IMPACT Assessment Tool

4. Phase 3 Projects - Market Model: Potential Demand, Revenues and Users Estimate

4.1. Introduction

Once concluded the mapping phase, IDC developed an analysis of the market which can be divided into 3 main steps:

1. **Analysis of potential demand**. A top-down market model, which estimates the potential demand of each of the target market of the funded initiatives. This includes the market context for the funded initiatives, analyzing the size of the markets and the growth trends for the areas where the funded initiatives aim to compete. This is based on IDC market forecasts and provides assumptions feeding into the forecast revenues model.
2. **Estimate of funded initiatives' revenues**. A bottom-up model that calculates the estimated revenues of funded initiatives segmented into coherent groups of initiatives. This model projects the revenues to 2020 under three alternative scenarios (optimistic/neutral/pessimistic).
3. **Estimate of funded initiatives user population**. This part of the quantitative analysis estimate the number of users of funded initiatives.

For all these 3 models, data are presented both at the overall level and segmented by industry and by category type (software/ hardware and software/ non-IT services). The analysis starts with the year 2014 and forecasts are provided up to 2020.

4.2. Market Context: Sizing the Opportunity

IDC analyzed funded initiatives dividing them in homogeneous groups. In order to do this, we interlocked the type of proposal and the target industry sector.

In order to create groups of homogeneous proposals the first step has been to split the proposals into the following three groups:

1. **Pure software solutions.** The first groups of proposals is characterized by the fact that initiatives are purely software ones. These initiatives have been further split in 9 software categories:
   Operations and Manufacturing Applications,
   - Data Access, Analysis, and Delivery Software,
   - Content Applications,
   - Consumer Applications,
   - CRM Applications,
   - Engineering Applications,
   - SCM Applications,
   - ERM Applications,
   - Collaborative Applications

For each of these categories, the definition is available in the Annex. Each of those 9 groups has been further analyzed by industry sector.

2. **Hardware and software solutions**. The second subset of funded initiatives refers to solutions that include hardware and software. They have also been split by top industry sectors**.**
3. **Non IT services.** The third subset of funded initiatives is the one referred to non-IT related initiatives (such as marketplaces etc.).

4.2.1. Pure software solutions

IDC analyzed in more detail each software market in which there are at least 10 funded initiatives. This means that IDC sized the market opportunity for the 9 software markets listed above, developing an approach which breaks each of them by industry sector.

They are summarized in the following table and analyzed in more detail in the following pages.

	EU28 Size (2014)	EU28 Size (2020)	CAGR 2014-2020	N. of FI Funded Initiatives
Operations and Manufacturing Applications	€ 7.0 Billion	€ 9.0 Billion	4.4%	86
Data access, analysis, and delivery software	€ 3.9 Billion	€ 5.8 Billion	6.8%	60
Content applications	€ 6.3 Billion	€ 7.6 Billion	3.2%	47
Consumer applications	€ 1.7 Billion	€ 1.5 Billion	-1.3%	33
CRM applications	€ 5.2 Billion	€ 7.7 Billion	6.6%	29
Engineering applications	€ 5.0 Billion	€ 6.8 Billion	5.1%	21
SCM Applications	€ 2.0 Billion	€ 2.4 Billion	3.6%	19
ERM applications	€ 11.9 Billion	€ 15.9 Billion	5.0%	15
Collaborative Applications	€ 2.4 Billion	€ 6.2 Billion	17.0%	10

Source: IDC elaboration of FI-IMPACT data 2015

Figure 48 IDC Size and growth by software market and related number of funded initiatives

Operations and Manufacturing Applications

The operations and manufacturing applications market in EU will reach €11 billion in 2020, growing at a 4.4% CAGR for the years from 2014 to 2020. The Operations and Manufacturing Applications market is, according to IDC, the second biggest in terms of size, among the 9 analyzed.

IDC segments it into 3 sub-technologies: manufacturing, other back-office and services operations management. The last one counts for more than 80% of the operations and manufacturing applications and is also growing slightly faster than the other two sub-

technologies and it includes a broad range of industry-specific applications. From the analysis of funded initiatives we find that 87 offer operations and manufacturing applications and 86 of those work in the services operations management market: they have understood that customers are increasingly demanding industry-specific enterprise applications that are purpose built.

The following points will drive the operations and manufacturing applications market growth:

- Customers are increasingly demanding industry-specific enterprise applications that are purpose built.
- Even in the SMEs marketspace, industry-specific applications are under strong request, as they more and more compete in a globalized market and need the most sophisticated tools, which are increasingly often developed on purpose to address the needs of a particular sector

IDC expects vendors willing to tackle this space will need to concentrate efforts on:

- Focusing on solutions delivered via the public cloud, is a good idea especially if targeting SMEs, which do not have money for huge initial investments;
- Providing also support services maybe a good way to address also more skeptical companies towards technological innovation.

From the analysis of funded initiatives we find 86 initiatives addressing this market space.

According to IDC, the industries that will increase most their spending by 2020 in services operations management are: utilities, manufacturing, business services, finance, and telecom and media, where growth rates are higher than in the average market.

In terms of size, the biggest industries according to IDC are: finance, government and telecom and media. On the other hand the funded initiatives in this technology market address agriculture, healthcare and consumer sectors the most.

Data access, analysis, and delivery software

The data access, analysis, and delivery software market in EU will reach €5.8 billion in 2020, growing at a 6.8% CAGR for the years from 2014 to 2020. The Data Access, Analysis, and Delivery Software is a relatively smaller market (it is the sixth among the 9).

IDC segments it into 3 sub-technologies: advanced and predictive analytics software, end-user query, reporting, and analysis and spatial information management. The advanced and predictive analytics software is the segment growing at a faster rate (CAGR 2014-2020 is forecast to be 8.1%); end-user query, reporting, and analysis will grow by 6.7% while spatial information management will grow by 5.5%.

The data access, analysis, and delivery software market growth will be driven by the following trends:

- The increased awareness around how business intelligence technologies can help users generate insight from data has been present for decades but now IDC observes a more practical approach as advantages are clearer and cost of BI solutions has decreased, thus adoption is spurring across a wider range of companies

- However, IDC expects that revenue will rise more slowly than the number of users of this technology, as prices per user continue to fall. This is due to the fact that access to formerly big-ticket business analytics technologies will become democratized due to consumerization and the cloud.

IDC expects vendors willing to tackle this space will need to concentrate efforts on:

- Recognize the range of use cases and invest in fit-for-purpose technology, while reflecting the need for common platforms that are open to a wide range of data types.
- Deliver the required level of self-service data access and analysis.
- Enable rapid experimentation across bid data and analytics processes, promoting agile development and project management techniques.

Also, in this competitive area, IDC believes that there is a potential market for start-ups that can rapidly develop applications to replace processes that historically have been done manually, on spreadsheets, or through the use of custom applications.

From the analysis of funded initiatives we find 60 initiatives addressing this market space. This is a healthily growing market as, especially with the advent of BI cloud solutions, a wider range of companies is now approaching this type of solutions, which were previously territory of big organizations only.

The industries that, according to IDC show the highest growth potential as they will increase the most their spending to 2020 in data access, analysis, and delivery software are: utilities, business services, finance, wholesale and retail, and agriculture, where growth rates are higher than in the average market.

In terms of size, according to IDC, the biggest markets are: manufacturing, finance, and wholesale and retail. The funded initiatives in this technology market address the most the agriculture, consumer and healthcare sectors.

Content applications

The content applications market in EU will reach €7.6 billion in 2020, growing at a 3.2% CAGR for the years from 2014 to 2020. The Content Applications market is quite big but also on average quite mature.

IDC segments it into 4 sub-technologies: Authoring and Publishing Software, Content Analytics, Discovery, and Cognitive Software, Content Management and Enterprise Portals:

- The Content Analytics, Discovery, and Cognitive Software segment will grow at a 7.1% CAGR in the reference period.
- The content management segment will grow at a 5.4% CAGR as it will continue to consolidate over the forecast period. This will increase pressure on many of the small content management vendors that serve narrow niches (whether based on geography, industry, or customer company size). Growth in the market will be driven also by the continued shift to digital business.

IDC expects vendors working in this space will need to concentrate efforts on:

- Ease of use, ease of implementation, and ease of deployment to appeal to business users that will become increasingly important in purchase decisions
- Cloud, as cloud adoption in the content management market will begin to inflect during the forecast period
- As the market consolidates, the winners will be the vendors that establish big partner ecosystems; for large vendors, that includes global systems integrators and/or large software and services players, while for smaller vendors, it means vertically oriented integrators or VARs or more specialized services vendors in general.

From the analysis of funded initiatives we find 47 initiatives addressing this on average mature market space. IDC believes that in this marketspace there will be consolidation but there will be also space for smaller often niche players able to provide specialized offerings.

According to IDC, the industries that will increase the most their spending to 2020 in content applications are: utilities, business services, finance, manufacturing, telecom and media and healthcare, where growth rates are higher than in the average market.

In terms of size, the biggest markets are: manufacturing, wholesale and retail and finance. On the other hand FI funded initiatives in this technology market address the most the consumer, healthcare and telecom and media sectors. There is also a group of initiates that target all industry sectors horizontally.

Consumer applications

The EU28 consumer applications market opportunity, according to IDC, in 2014 is worth € 1.7 billion. The market is expected to decline by a CAGR of -1.3% in the period 2014 to 2020. Consumer Applications is the smallest market and it shows negative growth rates: new companies in this market need therefore to carefully consider their strategic positioning and be able to compete in a tough arena.

Consumer applications are software products for recreation, education, and/or personal productivity enhancement.

The consumer software market includes home education/edutainment products sold to homes for specific educational purposes (for either adults or children) or reference (e.g., dictionaries and encyclopedias); games and entertainment (sports, adventure/role playing, arcade/action, strategy, and family entertainment applications); and home productivity that covers the software categories of home creativity, including all help, how-to, and lifestyle applications (e.g., cookbooks); personal productivity products, including resume writers, standalone calendars, expense records, will makers, and family-tree makers; and personal finance and tax preparation programs.

From the analysis of funded initiatives we find 33 initiatives delivering consumer applications.

Customer relationship management (CRM) applications

The customer relationship management (CRM) applications market in EU will reach €7.7 billion in 2020, growing at a 6.6% CAGR for the years from 2014 to 2020. The CRM

Applications market is the fourth in terms of size and it shows slightly above average growth rates.

Marketing and customer service applications in particular are anticipated to experience solid growth in the next 5 years, while sales applications will grow at a slower pace, and contact center applications will be the slowest ones.

The CRM applications growth will be driven by the following trends:

- Key growth drivers include cloud-based CRM applications (because it implies new adoption from new types of customers), customer experience management (because the CRM application is the cornerstone of the customer experience foundation), the shift to digital marketing (because it creates an enormous need for packaged software to manage the complexities and potential), collaborative CRM applications, social networks in a CRM context, mobile CRM applications, and increased demand from midsize organizations.
- According to IDC CRM applications remain among the top IT investment priorities. Furthermore, midmarket and large organizations remain most vibrant in terms of CRM investment indications. However, IDC believes that the current customer experience and digital marketing agenda are taking the resources and attention away from sales applications and toward marketing and customer service applications.
- Software-as-a-service-based (SaaS-based) CRM is mainstream and makes up 27% of total market value. Also IDC forecasts a CAGR for SaaS-based CRM close to 20%, which will bring the size of SaaS-based CRM applications market to be in the range of 50% of its total size. On-premises-deployed CRM applications will decline in low single digits annually during the forecast period.

From the analysis of funded initiatives we find 29 initiatives addressing this market space, which, according to IDC, remain among the top IT investment priorities of European companies.

The industries that will increase the most their spending to 2020 in CRM applications are: utilities, business services, finance, manufacturing, and wholesale and retail, where growth rates are higher than in the average market.

According to IDC, the biggest industry sectors are: finance, manufacturing, and telecom and media. On the other hand FI funded initiatives in this technology market address the most the consumer, wholesale and retail, business services and government sectors. Also in this case there is a group of initiates that target all industry sectors horizontally. This might be appropriate as some CRM modules or functionalities do not necessarily need to be customized as they are for their very nature horizontal tools.

Engineering applications

IDC expects the engineering applications market to grow between 2014 and 2020 at a CAGR of 5.1% in the EU- The market, by 2020 will reach the size of € 6.8 billion. The Engineering Applications market is the fifth market in terms of size of the opportunity and it shows average growth rates.

This market is composed by the following sub-technologies: Collaborative Product Data Management, Mechanical Computer-Aided Design (MCAD), Mechanical Computer-Aided Engineering (MCAE), Mechanical Computer-Aided Manufacturing (MCAM) and MCAE is forecast to be the fastest growing segment.

The engineering applications market, together with operations and manufacturing, and supply chain management markets continue to be primarily on-premises/other software based, and IDC forecasts that less than 3% of this market is today delivered via the cloud.

The engineering applications market growth will be driven by the following points:

- The overall wealth of the EU manufacturing industry that, by itself, buys the 60% of the engineering applications in the EU
- The ability to sell also to small companies for example in the business services sector, such as architecture and engineering companies, that being a very fragmented sub-industry, may be very difficult to target but it has also a huge number of potential users.

From the analysis of funded initiatives we find 21 initiatives addressing this market space: some of which are 3D printing and/or robotics solutions which are very dynamic emerging markets where good opportunities might exist and where the first mover advantage can materialize.

The industries that will increase the most their spending to 2020 in the engineering applications are: utilities, business services, manufacturing, and telecom and media, where growth rates are higher than in the average market.

According to IDC, the biggest markets are: manufacturing, business services and wholesale and retail. The funded initiatives in this technology market address the most manufacturing companies, consumers and business services organizations. Some of them are 3D printing and/or robotics solutions which are very dynamic emerging markets where good opportunities might exist and where the first mover advantage can materialize for FI projects.

Supply Chain Management (SCM) Applications

IDC anticipates the SCM applications market to grow over the period 2014 to 2020 at a CAGR of 3.6% in the EU- The market, by 2020 will reach the size of € 2.4 billion. The SCM Applications market is small and growing below average.

This market is composed by the following sub-technologies: Inventory Management, Logistics, and Production Planning. Production planning is the biggest of the three (45% of the total SCM market) while production planning is growing more than the other two sub-technologies.

The supply chain management markets continue to be primarily as the cloud delivery mode has not taken ground.

The SCM applications market growth will be driven by the following points:

- The overall wealth of the EU manufacturing and retail/wholesale industries that buy the 68% of SCM applications in the EU

- Successful SCM applications systems will be those that easily and efficiently integrate with other systems in order to improve management, planning and execution.

From the analysis of funded initiatives we find 19 initiatives addressing this market space, where they will find high competition and also barriers to entrance. Opportunities might materialize especially for niche specialized offerings.

The industries that will increase the most their spending to 2020 in SCM applications are: utilities, business services, finance, telecom and media, and manufacturing where growth rates are higher than in the average market.

According to IDC, the biggest markets are: manufacturing, wholesale and retail, and government. FI funded initiatives in this technology market address two out of the three biggest markets (manufacturing, and wholesale and retail) and there is also a big group of initiatives in the agriculture sector.

Enterprise resource management (ERM) applications

The EU28 enterprise resource management (ERM) applications market is expected to grow by a 5.0% in the 2014-2020 timeframe and to reach the size of € 15.9 b in the EU28. The ERM Applications market is the biggest market and it shows average growth rates.

Market growth in the year is primarily driven by cloud-based ERM applications and modules and the increased impact of 3rd Platform technologies on the market.

New drivers for investments in ERM applications include:

- The main market drivers for the next years are the increased presence of software as a service (SaaS), the continued transition to a more consumer-like ERM applications market (more emphasis on intuitive end-user experience, mobile, and cloud-oriented solutions), as well as the increased emergence of social and collaborative elements in ERM applications.
- The spread of smart mobile devices, the integration of mobile and social/collaborative elements in ERM applications, and the embedding of analytics is making first-time investments in ERM applications more attractive for many midsize businesses and organizations that wish to replace manual, Excel-based, or custom-built applications.
- The markets in the ERM domain are highly mature. The level of maturity each functional market has a significant bearing on future forecast growth rates. Order management and financial applications have slower growth rates compared with other mature functional markets.
- The human capital management (HCM) applications market is expected see the strongest growth and forecast to grow with a 9.2% CAGR over the period to 2020. Other fast-growth markets include procurement (5.8%) as well as financial planning and strategic management (FPSM) applications (5.4%).
- The SaaS ERM segment represented around 17% of the total market in 2014, growing 28%. In addition, IDC forecasts a CAGR to 2020 of around 23% for this segment of the market.

From the analysis of funded initiatives we find 15 initiatives addressing this market space.

The industries that will increase the most their spending to 2020 in ERM applications are: utilities, business services, finance, telecom and media, manufacturing, and healthcare, where growth rates are higher than in the average market.

According to IDC, the biggest markets are: manufacturing, wholesale and retail and finance. The biggest group of funded initiatives in this technology market are cross-sector solutions. This can be appropriate as typically ERM software require less sector-specific capabilities if compared to other solution areas and therefore IDC believes that it is a good choice to develop ERM solutions or modules with no industry specificities.

Collaborative Applications

Many European organizations are looking for new opportunities to introduce modernized collaboration solutions across the organization as part of their digital business strategies. IDC is seeing collaboration and productivity becoming a top business priority for many organizations.

Together with the drive for cloud applications and high demand for single modular experiences, IDC expects strong growth in the European collaborative applications software market.

Data shows that:

- The EU collaborative applications market is expected to increase to €6.2 billion by 2020, representing a 17.0% compound annual growth rate (CAGR) in revenue for 2014–2020.
- The functional markets with growth prospects are file synchronization and sharing software (38.7% CAGR), enterprise social networks (39.6% CAGR), team collaborative applications (14.6% CAGR), and both email and conferencing applications (6.0% CAGR).

IDC expects that public cloud will outgrow all other cloud and on-premises deployment models due to the ease of implementation, adoption, and integration across applications. Over the next five years, public cloud will accelerate the demand for collaborative applications because it allows organizations to move to a new generation of applications with little efforts, while improving the access across devices and platforms via a web-based experience.

From the analysis of funded initiatives we find 10 initiatives addressing this healthily growing market space. The industries that will increase the most their spending to 2020 in collaborative applications are: utilities, business services, finance, manufacturing and telecom and media, where growth rates are higher than in the average market. According to IDC, the biggest industry sectors are: manufacturing, finance and wholesale and retail. This technology space is addressed by few initiatives, and most of them are either cross-sector solutions, or targeting the consumer market.

4.2.2. Hardware and software solutions

The second analyzed subset of funded initiatives refers to solutions that include hardware and software.

23% of funded initiatives are hardware and software solutions.

They address primarily consumers (24%), followed by solutions addressing the healthcare sector (17%). The third most targeted sector is agriculture with 14% of selected initiatives. Most of the hardware and software funded initiatives (78%) are IoT solutions, therefore it is worth understanding the total IoT spending estimate in EU 28 in order to understand the dimension of addressable market for these funded initiatives.

IDC defines the Internet of Things as an aggregation of endpoints — or "things" — that are uniquely identifiable and that communicate over a network without human interaction using some form of automated connectivity, be it local or global. Objects become interconnected, make themselves recognizable, and acquire intelligence in the sense that they can communicate information about themselves and access information that has been provided by other sources.

IDC estimates that the EU 28 IoT market is worth € 94 billion in 2015 and will grow to € 244 billion by 2019, at a 27% compound annual growth rate (CAGR). Top 5 countries in Western Europe (France, Germany, Italy, Spain, UK) count for 70% of the total EU IoT market. Restricting our analysis to the Top 5 European countries, we can see how Germany and UK take the largest shares of the European market, while Italy emerges for the second highest (among TOP 5) expected 2015-2019 CAGR.

Country	2015	2016	2017	2018	2019	2015 Share	2015-2019 CAGR
France	14,296	18,834	24,088	31,014	38,603	21.6%	28.2%
Germany	17,874	23,873	31,416	40,075	49,371	27.0%	28.9%
Italy	9,535	12,499	16,491	20,586	26,183	14.4%	28.7%
Spain	7,957	10,239	12,800	15,947	19,385	12.0%	24.9%
UK	16,416	21,446	27,189	34,505	42,695	24.8%	27.0%
TOP 5 WE	**66,078**	**86,890**	**111,985**	**142,126**	**176,237**		**26.3%**

Source: IDC European Internet of Things Ecosystem and Trends, 2015

Table 25 European TOP 5 WE Countries IoT Market Revenue Forecast, 2015-2019 (€M)

Among IT vendors, IoT does not just represent a significant opportunity for their business, but it is also leading to a new concept of the usual operating way and market approach. The ecosystem that makes up the IoT market is both vast and complex, including modules/devices, connectivity, IoT purpose-built platforms, storage, servers, security, analytics software, IT services from consulting to on-going management of the solutions, and of course security. For this reason it is vital for any company to be part of an ecosystem of partners that can provide a comprehensive solution. No vendor can do it all: partnerships and collaborations are essential for overcoming the spread of skills required by the IoT scenario and the road to be followed from players that claim a dominant or leadership position within this market.

From the buyers' side, IoT is completely reshaping working daily life dynamics in addition to represent a game changer for the usual service offered to clients. Main benefits coming from the adoption of IoT solutions are: reduced downtime and cost efficiency, increased

productivity, better service and new customer experience, complete automation, more reliable and faster decision making, and market differentiation leading to new business models.

While many IoT applications are very much siloed by industry sector, calling for advanced industry-specific skills from vendors, on the other side there might be cross-industry initiatives. For example concepts like the Smart Cities or Smart Agrifood ones, are scenarios that group and interface different industrial sectors (e.g. government, utilities, transportation for Smart Cities and food manufacturing, agriculture, and food-related retail for Smart Agrifood).

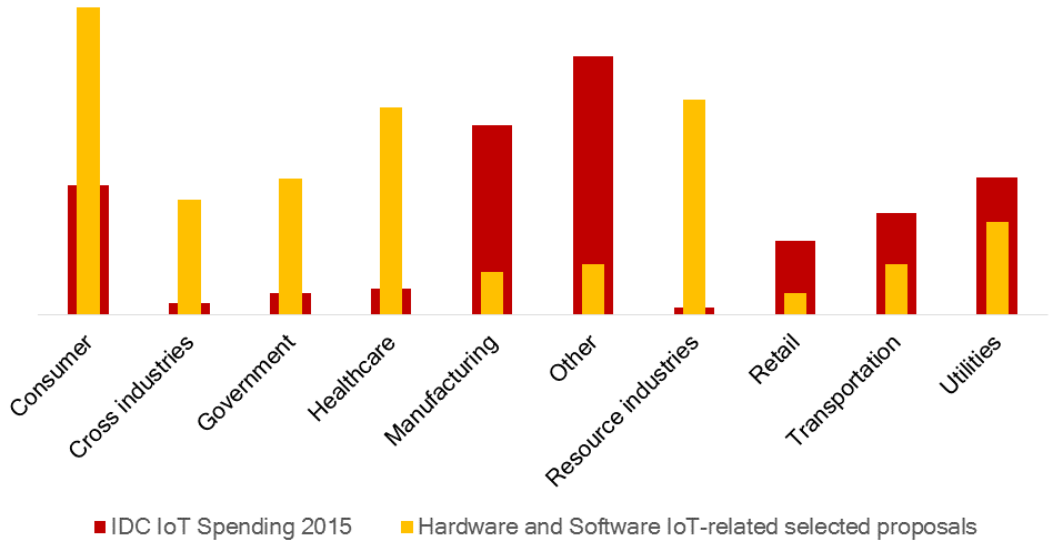


Figure 49 IDC IoT spending estimate in EU 28 in 2015 (%), compared with the N. of FI Hardware and Software IoT-related Selected Initiatives (%), By Industry Sector

Manufacturing and utilities represent the two dominating vertical markets in terms of 2015 IoT market share.

Utilities can be considered the real IoT forerunner industry.

IoT is not a completely new concept for the sector, with companies that are used to monitor their gridlines through sensors since many years, although a new IoT wave for the sector is represented by the deployment of smart meters in the downstream market that is taking place in many European countries.

Manufacturing instead, driven by a large demography and the Industry 4.0 German revolution, takes the largest share of the IoT market in 2015 and it will still represent more than 15% of the overall market in 2019. IoT is radically transforming factories' production and machine maintenance operations, with larger European companies that are making of IoT their power and innovation source.

Next years' spotlight will also be on the Consumer market. With the advent of connected personal wellness devices and wearables, the sector will be one of the fastest growing sector and it will represent the largest sector in terms of 2019 IoT spending (19%).

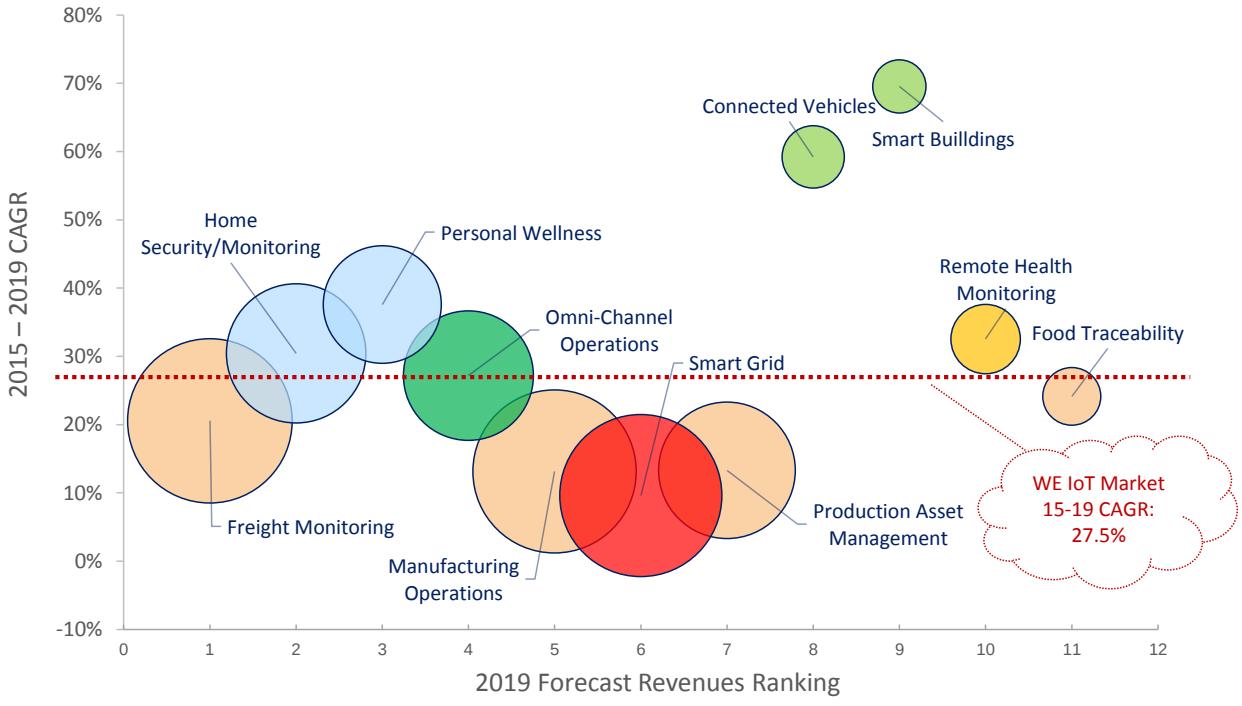
Government and healthcare have smaller and very similar market shares in 2014 (2.3% and 2.5%, respectively). Nevertheless, government growth rate will be hampered by the fact that at least in this early stage medium-large municipalities will be just focused on sporadic IoT pilots, while a global IoT concept and revolution that will reshape city life will is likely to happen only in very large European metropolis. Contrarily, healthcare growth rate will be significant, driven by the remote health monitoring and telemedicine deployment that will characterize the coming years for the sector.

Retail is an outstanding industrial sector in terms of expected growth in the next years, new IoT industry-specific applications are radically re-shaping the inventory operation and in-store customer experience.

Transportation, together with utilities, are other very advanced industries in IoT adoption, with IoT fleet tracking solutions that exist since many years.

"Other" refers to all other industrial sectors. Telecom companies drive this sector and represent a large portion of this category, but we are including here also banking, education, media, and professional services.

As highlighted above, the majority of IoT solutions are very industry-specific. Here below a snapshot highlighting the main IoT use cases (in terms of spending) among Western European countries.



Source: IDC European Internet of Things Ecosystem and Trends, August 2015

Notes:

- *Bubble size represents 2015 Western Europe Market Revenue Opportunities.*
- *The (color-based) categorization by industrial sector identifies the final buyer/investor of the considered IoT use case. Cross Industries refer to those use cases that apply to all industrial sectors: smart buildings projects concern education for schools, government for public buildings, professional services for offices, etc.. The same for*

connected vehicles: not just consumers will be the final buyers of IoT solutions, but also transport companies, professional services for their employees, etc..

Figure 50 Western Europe Internet of Things Market Revenues by Selected Use Cases, 2015-2019

4.2.3. Non-IT Services

The third analyzed subset of funded initiatives refers to non-IT services.

Projects categorized as non-IT services do not offer or sell a technology but instead use technology to provide a service. Most of them are marketplaces where companies or consumers can find information, purchase goods, look for specific services, and so on. Here below a categorization of non-IT services with the most famous and successful examples on the market nowadays:

- **Social Media:** web tools and platforms that allow people to create, share or exchange information, pictures, text, and videos. Facebook, Twitter, Linkedin, Instagram represent just some of the most famous example in this category.
- **Online Shopping Marketplace:** online auction places that put in contact buyers and sellers for goods exchange such as E-bay, Groupon, Subito.it, Etsy, Pricefalls.com.
- **Online Accommodation and Food Services:** online platforms where people can review and book hotels or restaurants in order to plan their travels and spare time. Some famous examples are: Booking.com, Tripadvisor, Expedia, Lastminute.com, Trivago (Expedia owned), JustEat, DeliveryHero.
- **Crowdfunding:** online platforms used to propose new solutions and projects that need financing and raise funds among web users. The most famous example here is represented by Kickstarter.
- **Sharing platforms:** it includes all online platforms at the base of the sharing economy, where people can share their goods or find available vehicles/seats/rooms/etc. The most successful examples can be found in the transport sphere such as BlaBlaCar, Uber, Lyft, BlackLane, Drivy, and Koolicar, but also in the accommodation sphere we find the famous Airbnb example.
- **Online Education:** online platforms where people can learn languages or attend professional education courses. Openclassrooms is an example of these platforms.

Non-IT services providers can address very specific niche markets or offer their services to a wide range of potential clients. Their target market/s can include the B2B, B2C, or B2B and B2C spheres.

While for the other two categories of funded initiatives analysed above (pure software solutions and hardware and software solutions) revenues mainly come from sales, for non-IT services many different business models contribute to revenue generation: advertising (revenues generated by advertisements appearing on the online platform), usage fees (you pay for the amount of service you use), transactions/intermediation (revenues generated from being the intermediate in a transaction between two parties), rental model, and external financing.

Most of these companies are or are trying to enter markets where competition is high and, therefore, we expect that they need to exploit several factors to gain the largest market share (first mover advantage, product differentiation, pricing strategy, etc.).

25% of funded initiatives are non-IT service providers. Most of them (or the 37%) address consumers, then we find 11% addressing agriculture, forestry and fishing organizations, followed by an 8% addressing the manufacturing industry sector.

4.2.4. Key Findings

In summary, the potential market opportunities for Phase 3 initiatives appear relevant.

Technologies under the spotlight are industry-specific IT solutions and big data/analytics software tools. In these two areas we find the biggest groups of funded initiatives. The Operations and Manufacturing Applications market (where IDC categorizes industry-specific applications) is, according to IDC, the second biggest in terms of size, among the 9 analyzed. Its growth rate is slightly below the average of the considered markets but it represents a good opportunity especially in some industry sectors. It is addressed by the biggest group of FI funded initiatives (87) as they have understood that customers are increasingly demanding industry-specific enterprise applications that are purpose built. The Data Access, Analysis, and Delivery Software (where IDC categorizes analytic applications) is a relatively smaller market (it is the sixth among the 9) and it is addressed by the second biggest group of proposals (60). This is a healthily growing market as, especially with the advent of BI cloud solutions, a wider range of companies is now approaching this type of solutions, which were previously territory of big organizations only.

Industries under the spotlight are agriculture and health. In these two industries we find the biggest groups of funded initiatives. According to IDC, the agriculture industry has a low IT intensity and also its IT spending is expected to show below average growth rates. However, IDC recognizes that there is room for new projects, such as the projects encompassed in IoT solutions, as they are interesting business initiatives in agriculture that are aimed to provide solutions or services to enhance cultivation of products, crop management, and other activities related to this sector. The healthcare sector is instead expected to have a high potential growth even if resources are limited. The purposes of new projects in this sector are multiple: provide tools to shrink the distance between patients and doctors, facilitate real-time communication and information exchange between doctors, and also reduce costs and save time. Guaranteeing a quality care is a strong need in the sector, this is why some accelerators are targeting this market. Moreover, there are sectors with a high level of IT spending and good future growth rates, such as financial services, that are underrepresented. But it is worth highlighting that in this sector typically IT innovation continues even without the help of external funding.

The initiatives providing non-IT services will not draw revenues from the IT market but are focused on experimenting with emerging business models, leveraging social media channels, crowdfunding and sharing platforms and the like. They will face the markets with the highest risks of failure but also the highest growth potential if successful.

4.3. Revenue Forecast Model of Funded Initiatives

4.3.1. Methodology

In this section we explain the assumptions behind our Market Revenue Forecast Model and the methodological approach IDC followed to estimate the total revenue that will be generated by Phase 3 funded initiatives up to 2020.

Estimating the total revenue generated by Phase 3 funded initiatives is very complex as many variables have to be considered both in terms of proposals nature (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 method behind the model split into two parts:

- Understanding the nature of funded initiatives (part 1);
- Estimating their future trends and success (part 2)

Part 1: understanding the nature of funded initiatives

As a starting point for our Market Revenue Forecast we have to understand who these funded initiatives are and what they do. A precious help on this come from the mapping chapter (See Chapter 2) and from the results of the Impact Assessment Questionnaire. In particular our methodological approach moves from the following inputs:

- Number of funded initiatives at the end of Phase 3
- Market Entry year
- Distribution of funded initiatives by tech category, target industry sector, number of team members, and geographical target
- Average revenue generated by a single proposal during its first year on the market

Number of Phase 3 funded initiatives

Up to now Accelerators selected 725 proposals, which is the sample for the mapping analysis contained in Chapter 2. Nevertheless, the total number of funded initiatives at the end of Phase 3 is estimated to be **1,000**. Therefore, to correctly estimate the revenue generated by Phase 3 projects, we considered this number as a starting point.

Understanding the nature of the 275 proposals that will be selected in the next months is impossible. The only assumption that can be taken for describing the 1,000 is that the 725 already funded initiatives represents a valid sample and what we see in terms distribution for them apply also to the "missing " 275 proposals.

Market Entry Year

Not all funded initiatives are already on the market. Contrarily to what appeared from the results of the Impact Assessment Questionnaire, many of them will enter the market during 2015, while most of them in 2016. Just a few of them will enter the market after 2016, although possible business delays or unforeseen difficulties could lead us to slightly increase the percentage of proposals that will enter the market in 2017-2020. There is also a bucket of proposals that have been already on the market.

This does not contradict the spirit of the FIWARE funding process but the percentage of proposals already on the market is represented by those participants that already have a solution and count of FIWARE funding opportunity to enhance their product and boost their business.

Here below the distribution of proposals by Market Entry Year considered as an assumption in the model.

Already on the market	2015	2016	2017	2018	2019	2020
8.1%	32.7%	51.2%	6.3%	0.7%	0.6%	0.4%

Source: Impact Assessment Questionnaire results and IDC assumptions.

Table 26 Phase 3 funded initiatives market entry year

Distribution of funded initiatives

Another fundamental input for the model is the understanding of what the funded initiatives will offer in terms of tech solutions, how many members compose the team and which market they will address both in terms of target industry sector and geographical destination.

As seen above (§ 2.7 Comparative analysis by type of technology), we distinguished the proposals in three categories depending on the **type of solutions they offer**: purely software solutions, hardware and software solutions, and non-IT services. This distinction is extremely important for an appropriate estimate of the revenue funded initiatives will generate in the next years.

Purely software solutions do not require high capital expenses. On the contrary, companies offering hardware and software solutions usually do not have manufacturing capabilities to build in house hardware components (sensors, devices, screens, etc.) but they have to buy these from other companies. This requires from them 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, funded initiatives offering hardware and software solutions are expected to have higher revenues at least in the first years. Non-IT services have different characteristics with respect to the other two categories. Examples from the past in this sector underline that many of the non-IT services have low revenues in their first years (with a focus on increasing the volume of users, despite revenue) and they measure their success in terms of revenues just in the longer term.

Similarly, **the number of team members** is a fundamental value to understand the possible revenue generation: smaller teams will have lower 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). At the same time team dimension could also give some indication on success rates, with 1-person team that are expected to struggle more to emerge.

The industry sector target has also its importance in our estimate. Each industry sector has its business needs and IT investments attitude. For example, the banking sector has usually a high IT investment propensity, although a risk management software will be more welcomed that an IoT solution that sends offers and promotions to clients passing by a bank branch. An IoT solution of that kind will certainly generate more appetite among retail companies.

Moreover, each industry sector differs in its approach to IT investment. If successful proposals address the consumer market, they will generate revenues in a shorter period, compared to successful proposals targeting the public sector. Municipalities and public

institutions usually go through tenders that require proposals to wait more time to be selected as an IT provider. Also offers targeting the B2B world in general usually experience higher berries to entrance in the market than in the B2C world.

Lastly (but not least), the **geographical target** has to be considered. It is clear that successful proposals addressing more countries at the same time will have higher average revenues compared with those addressing a single country or region (as the product is just in a particular language or the team have no capabilities to go abroad).

Therefore, it is clear that understanding how funded initiatives will distribute among these categories is an essential input for our Market Revenue Forecast Model.

Average 1st year revenue

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. IDC analyzed results emerging from the Impact Assessment Questionnaire and from desk research on startups revenues during their first year of life. We estimated that on average a 1-person selected proposal could generate around €10,000 in its first year of life. This under the assumption that for many funded initiatives the main source of money will be external funds obtained from investors.

This value partially changes with respect to the tech category we consider and the geographical target, 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 are). 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 years (see next section).

Table below collect the 1st year average revenue assumption we considered.

		0-1	From 2 to 5	From 6 to 10	More than 10
Pure software	**National**	10,032 €	35,112 €	80,256 €	150,480 €
	Multiple Countries	15,180 €	53,130 €	121,440 €	227,700 €
Non-IT services	**National**	8,208 €	28,728 €	65,664 €	123,120 €
	Multiple Countries	12,420 €	43,470 €	99,360 €	186,300 €
Hardware & software	**National**	11,856 €	41,496 €	94,848 €	177,840 €
	Multiple Countries	17,940 €	62,790 €	143,520 €	269,100 €

Source: FI-IMPACT elaboration on IDC data, 2015

Table 27 First year average revenues

Part 2: Estimating future trends and success

When forecasting the revenue generated by Phase 3 funded initiatives we have to take into account the fact that not all projects will have the same success and evolution throughout the years.

First of all, some of them will be unsuccessful and will not overcome their first years of life. Death rate is extremely high among startups, in particular in a dynamic and competitive sector such as the digital one. More than half new IT startups fail and disappear after five years from their market entry, impaired by a high competition,

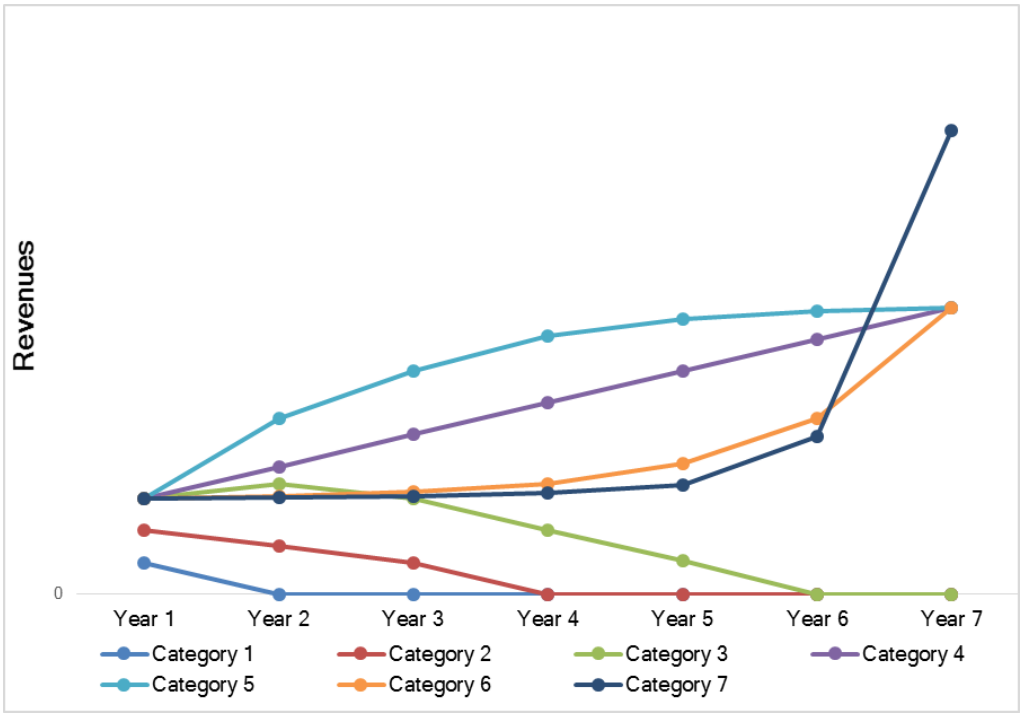
market trends, and inadequate business plans. This appears even more evident among very small companies, as the ones considered in our case.

The survivors are those proposals that will have a positive impact on the market and whose revenues will grow across the years. The majority of them will have a regular trend across the years both in terms of yearly revenues increase and new hired employees. While there will be a minor percentage of proposals, called the unicorns, whose revenues will be quite flat during the first years and will experience a real boom just in the long-term. Unicorns can be found more often in the category of funded initiatives that we named Non-IT services.

Many non-IT 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 private investors. Just in a second moment, once that the number of users was considerable, the business model moved to a transaction fees approach (the service takes a percentage of the transactions done on the service platform) creating a revenue explosion.

Therefore, to take into consideration the possible growth paths that funded initiatives could take in the first years after their entry on the market, we considered the following seven categories:

- **Category 1 – Failing in Y1**: proposals that will die after 1 year;
- **Category 2 – Failing in Y3**: proposals (not in Category 1) that will die after 3 years;
- **Category 3 – Failing in Y5**: proposals (not in Categories 1 and 2) that will die after 5 years;
- **Category 4 – Stably growing**: proposals whose revenues progressively expand over time;
- **Category 5 – Growing and then stabilizing**: proposals whose revenues will peak in the first years and then stabilize;
- **Category 6 – Peaking after a while:** proposals whose revenues' growth will not be immediate but will peak at later stages;
- **Category 7 - Unicorns**: unicorns, proposals whose revenues are flat during the first years with a considerable revenue explosion just in the longer term.



Source: FI-IMPACT elaboration on IDC data, 2015

Figure 51 Revenues trends and the 7 grow path categories

The three scenarios

Assumptions on the distribution of Phase 3 funded initiatives across the seven revenues trends categories depend on many factors that go beyond funded initiatives' merits and business strategies. Economics factors but also the emergence of revolutionary technologies could influence the success or failure of Phase 3 funded initiatives. Exploring the likely or possible interactions between the main trends allows building alternative scenarios presenting the main paths opening in front of us.

Within the context of this study, we are not so much exploring wildly different scenarios, rather our objective is to project the potential funded initiatives' revenues. The time horizon of our forecast is in fact the medium term (5 years ahead), which reduces the range of uncertainties affecting the socio-economic context. Also the major macroeconomic expected trends, such as GDP growth, employment, and demographics, are likely to produce a reasonably small range of variation (unfortunately for Europe, since low growth is currently the most likely scenario). "Wild card" innovations are always possible, but in reality even disruptive changes take time to develop and penetrate deeply into the socio-economic system, especially in Europe where there is still a conservative bias. For these reasons, we believe that it will be possible to develop a neutral scenario, contrasted with alternative optimistic and pessimistic scenarios, making assumptions behind the growth trends of the different categories of funded initiatives as outlined in the table below.

Therefore, in order to consider the spectrum of possible future trends, we considered 3 scenarios in our Market Revenue Forecast Model:

- **Pessimistic**: this represents the worst case scenario, characterized by hurdles slowing down growth, such as hard economic times and an inadequate fit of funded initiatives to meet market demand and to be flexible enough to adapt to changing market conditions.
- **Neutral**: this scenario is based on historical data on failure and success rates of startups in the IT sector.
- **Optimistic**: this represents the best case scenario, characterized by positive factors accelerating growth, such as positive economic times and an adequate fit of funded initiatives to meet market demand.

Several sources are available on death rate estimate of startups in the IT sector, although with different percentages it emerges that around half of new digital companies fail after their first 4/5 years of life. Among the successful examples, the majority is represented by companies with stable growth rates, while unicorns represent just a minor portion of this bucket.

Based on these assumptions and with a differentiation according to the 3 possible scenarios, we split Phase 3 funded initiatives across the seven revenues trends categories as follow.

	OPTIMISTIC	NEUTRAL	PESSIMISTIC
CATEGORY 1 - Failing in Y1	8%	12%	15%
CATEGORY 2 - Failing in Y3	17%	21%	25%
CATEGORY 3 - Failing in Y5	8%	13%	20%
CATEGORY 4 - Stably growing	36%	22%	14%
CATEGORY 5 - Growing and then stabilizing	14%	7%	3%
CATEGORY 6 - Peaking after a while	11%	15%	18%
CATEGORY 7 - Unicorns	6%	10%	5%
Total	**100%**	**100%**	**100%**

Source: FI-IMPACT elaboration on IDC data, 2015

Note: These percentages are used to spit the number of funded initiatives in each scenario under the assumption that the more positive categories (e. g. category 4) will be more balanced towards the Optimistic scenario, while the more negative ones (e. g. category 3) will be more skewed towards the Pessimistic scenario.

Table 28 The 3 scenarios and distribution of funded initiatives among the seven grow path categories

Average growth rates

The final ingredient to estimate the total amount of revenues generated by Phase 3 funded initiatives up to 2020 is an assumption on the average growth rates that successful funded initiatives will experience in their first six years on the market (we consider the timeframe 2014-2020 as a reference). Of course these growth values will differ from IT market growths, as we are just considering proposals whose initial revenues are very low or inexistent and are just entering the market right now.

Many aspects could influence successful proposals' average 6 years compound annual growth rate (CAGR):

- **The team dimension**: as we are just considering the first 6 years on the market and initial revenues are lower for smaller companies, the average 6-years CAGR

for successful proposals will be higher for smaller companies. This is also driven by the fact that new hiring will have a higher impact on companies that starts with 1 or 2 members than realities that already consider more than 10 components.

- **The tech category**: also the type of solutions will slightly influence average 6-years CAGR. Hardware and software solutions (mainly IoT) will often approach a new and not consolidated market, while purely software solutions will reach markets where the competition is already high. Non-IT services instead will usually show their potential just in the longer term, showing lower average growths in a short period of years.
- **The target industry sector**: answering industry sectors' specific business needs and investment plans is essential for conquering the target industry sector. Not all sectors will welcome similar solutions in the same way (e.g. an IoT solution will be more welcomed by the government sector, where the smart city concept is bang on trend, with respect to the banking sector where IoT still lags behind). Average growth rates have been modified by industry sector target, looking at IDC IT Market Forecast Data by Vertical Market.
- **The business model and innovation level**: lastly, also the innovation level of the proposed solutions and their business model will influence the revenue trends in the first years. As an example, proposals addressing a consolidated market could struggle in their first years, while innovative proposals opening a completely new market could explode in their first years in the market, grasping the opportunities given by a low competition level.

Comparing IDC IT Market Forecast Data with several sources on the expansion of digital startups in their first years of life and based on the assumptions above, represented below are the average 6-years CAGR considered in the model.

	0-1	From 2 to 5	From 6 to 10	More than 10
Pure software	74.6%	57.6%	49.4%	46.7%
Non-IT services	71.5%	55.2%	47.4%	44.7%
Hardware & software	77.4%	59.8%	51.2%	48.4%

Source: FI-IMPACT elaboration on IDC data, 2015

Table 29 Average 6-years CAGR by size and tech category

The average 6-years CAGRs considered have been modified by target industry sector and business model/innovation level.

This step, together with the inputs coming from the previous section (number of funded initiatives, their nature, and first year average revenue), completes the assumptions' table behind our Market Revenue Forecast Model. Putting all this data together and computing revenues trends across the years, we forecast the revenue generated by Phase 3 funded initiatives under the 3 considered scenarios. Results are shown in the next section.

4.3.2. Results of Phase 3 Funded Initiatives Revenue Forecast

Considering the main assumptions explained in the previous section:

- Nature of Phase 3 funded initiatives (total number, market entry year, first year average revenue, and distribution by number of team members, tech category, target industry sector, and geographical target)
- Average growth trends and death/success rates

IDC forecasted the revenues that will be generated by Phase 3 funded initiatives (1,000) in 2014-2020.

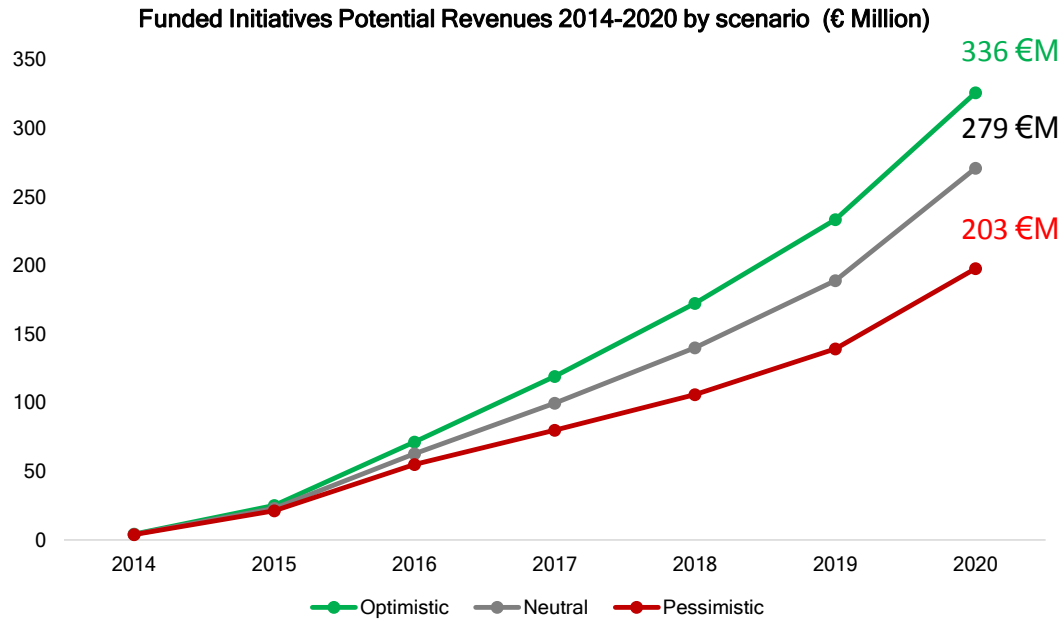
(€)	2014	2020	2014-2020 CAGR
Optimistic	4,200,000	336,000,000	107%
Neutral	4,100,000	278,900,000	102%
Pessimistic	3,900,000	203,100,000	93%

Source: FI-IMPACT elaboration on IDC data, 2015

Table 30 Phase 3 Selected Proposal Generated Revenues – The 3 Scenarios

In the Neutral scenario, Phase 3 funded initiatives are expected to generate € 279 million in 2020, with a 102% compound annual growth rate (CAGR) in 2014-2020. Highest growth rates appear in 2015 and 2016 due to a low initial revenues generation and to the entry on the market of the majority of Phase 3 funded initiatives.

Under the Pessimistic scenario, characterized by a higher failure rate among funded initiatives, IDC forecasts that Phase 3 funded initiatives will generate € 203 million in 2020, with a 93% 2014-2020 CAGR. On the contrary, lower death rates lead to the Optimistic forecast of € 336 million generated in 2020 with a 107% 2014-2020 CAGR.



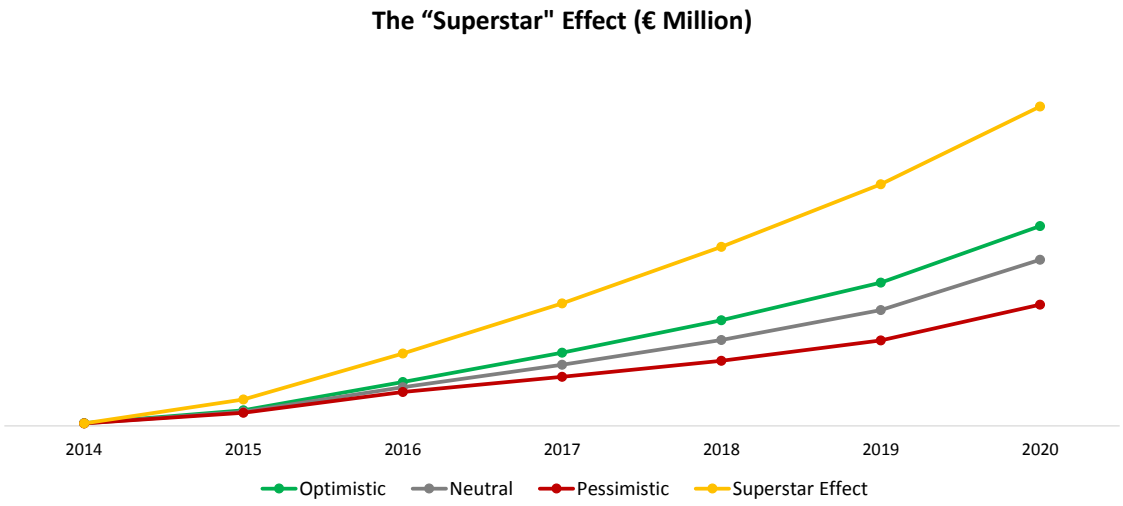
Source: FI-IMPACT elaboration on IDC data, 2015

Figure 52 The 3 scenarios revenues

4.3.3. The Superstar Effect

There could be another scenario that has to be considered. What could happen if among the Phase 3 funded initiatives there is a very successful proposal that will "rock the world", like it happened with Facebook, TripAdvisor, booking.com, or WhatsApp? If we call this game changer the "Superstar ", what could be the Superstar effect?

Looking at similar examples from the past, we estimate that the Superstar could be able to reach € 100 million after 3 years on the market and €250 after 6 years. Assuming 2015 as the market entry year for this hypothetical Superstar, the generated revenues scenario could drastically change. This could potentially lead to more than € 500 million of revenue generated by Phase 3 proposals, with an extraordinary 125% CAGR in 2014-2020.



Source: IDC, 2015

Figure 53 The fourth scenario: the "Superstar" effect

4.3.4. The Neutral Scenario: Revenue Market Forecast Split by Tech and Industry Sector

The split by tech category and industry sector of the Neutral Scenario reflects the distribution of Phase 3 funded initiatives and assumptions on market trends highlighted in the previous part.

The largest share of revenues will come from purely software solutions. Purely software solutions revenue share will go from 55% in 2014 to 41% in 2020, with this category expected to generate 112 € million in 2020 at a 93% 2014-2020 CAGR.

Hardware and software solutions, driven by the IoT wave that is revolutionizing all industry sectors, will be the fastest growing sector in terms of expected generated revenues (115% 2014-2020 CAGR). Funded initiatives offering this kind of solutions are expected to generate € 100 million in 2020.

Non-IT services, that represent one fourth of Phase 3 funded initiatives, will count for around 21% of the total revenues expected in the Neutral scenario. Revenues will be lower in the short term, while the "unicorn-attitude" of this bucket will lead to a 104% 2014-2020 CAGR.

€ Million	2014	2020	2014-2020 CAGR
Pure software	2.2	114.6	93%
Non-IT services	0.8	60.7	104%
Hardware & software	1.0	103.6	116%
Total	**4.1**	**278.9**	**102%**

Source: IDC, 2015

Table 31 The Revenues of the Neutral scenario split by tech type

The split of the Neutral scenario revenue forecast by target industry sector gives us an idea of which industry sector will contribute more to revenues generation.

The highest percentage of revenues in the Neutral scenario will come from the Consumer sector. Mobile apps among purely software solutions, home IoT tools in the hardware & software bucket, and Non-IT services targeting the consumer market will drive this trend. Solutions targeting the consumer sector are expected to generate € 74 million in 2020, at 101% 2014-2020 CAGR.

Among business sectors, the "top 3 spenders" overlap with those industry sectors that are the most targeted ones (see Chapter 2.2.3. Comparative analysis market focus): agriculture, cross-sector, and healthcare. Agriculture and cross-sector solutions will generate almost the same revenues in 2020, counting together for 29% of 2020 generated revenues.

Utilities and wholesale/retail will be the two fastest growing industry sectors (119% and 112% 2014-2020 CAGR, respectively), although they will represent just 8% of the 2020 expected revenues.

Funded initiatives addressing the public sectors will find some challenges due to budget cuts that characterized these sectors in the last years. Education will be the slowest growing sector (90% 2014-2020 CAGR), although it represents less than 1% of the expected revenues. Also public administration will be among the slowest growing sectors (98% 2014-2020 CAGR), representing 5% of expected revenues in 2020.

€ Million	2014	2020	2014-2020 CAGR
Accommodation and food services	0.0	1.4	97%
Agriculture	0.6	41.2	100%
Arts and entertainment	0.1	4.7	97%
Business Services	0.1	11.4	110%
Consumer	1.1	73.8	101%
Education	0.0	1.7	90%
Cross-sector solutions	0.5	40.7	105%
Healthcare	0.6	33.5	98%
Manufacturing	0.3	20.9	106%
Government	0.2	15.0	98%
Telecom and Media	0.1	5.1	103%
Transport	0.1	7.7	102%

Utilities	0.1	12.0	119%
Wholesale and retail	0.1	9.8	112%
Total	**4.1**	**278.9**	**102%**

Source: IDC, 2015

Table 32 The Revenues of the Neutral scenario split by industry sector

4.3.5. Key findings

Based on the results of our market model, by the year 2020 we expect that Phase 3 will have helped to create 500 new or newly grown small and medium enterprises who should generate 279 €Million of revenues under the Neutral scenario (with a 46% death rate on the initial sample).

If many of these companies match well demand needs, the death rate could decrease to 33% on the initial sample with total revenues in 2020 of 336 €Million. If instead many of these companies are unable to succeed, death rates could reach 60% with total revenues in 2020 of 203 €Million.

There is also another potential scenario that we called the Superstar effect, which may happen if one of the funded initiatives has an extraordinary success and becomes a high flying company such as Airbnb or Uber, achieving up to €250 Million revenues in 2020. The total potential revenues in this scenario would be more than € 500 million, with an extraordinary 125% CAGR in the period 2014-2020. Compared with the initial €80 Million invested by Phase 3 this would be an unparalleled achievement of an EU Programme.

4.4. Estimate of Potential Users

This section estimates the number of potential users of the funded initiatives. With the term "user" we are considering the buyer of the solution, which may coincide or not with the actor (person or organization) actually using the solution.

We can have different examples:

A. A selected proposal that targets the healthcare sector sells a software solution to hospitals which allows also private consultation giving the chance to patients to access information on their medical records. Even if patients are also using the software, the user is the hospital, which bought the solution.
B. A manufacturing company adopts an IoT solution, which is provided to and used by all the employees. Also in this case the user is the manufacturing company which bought the solution.

For consumer applications, we consider the number of users, not to be confused with the number of downloads: the download is just the installation of the application on a device, while the active use of the application makes the customer a user. Please note that there is a huge difference between the number of users and the number of downloads, which is difficult to estimate on average but that, according to available data and literature can vary from 1 to 5%, meaning that on average only something like 3% of the downloads actually convert into users.

The aim of this chapter is to estimate how many users will be adopting the funded initiatives by the end of 2020. In theory a user can adopt more than one of the funded

initiatives, still, for the sake of this estimate, we count the users of each solution separately, and therefore the same user can be counted more than once if he is using more than one solution. Example: consumer X is downloading an app which provides the service of learning a new language. At the same time, the same consumer X is buying a game. Even if this should be counted as one user, we count it twice, under the assumption that this situation is quite rare.

4.4.1. Methodology

The methodology we developed is based on the results on revenues obtained from the market model. Estimations are made considering all the funded initiatives (1,000 projects selected at the end of FI-PPP Phase 3). Methodology implies different steps:

1. **Estimate of average spending per user** based on elaboration on IDC data for each type of solution: Pure software, Hardware and Software, and Non-IT Services. The growth rates of average spending are differentiated by type of solution and target industry over the forecast period. This took into account the different business models (e.g. subscription/freemium/license/usage fees/advertising, among others)
2. Use of the different **market entry year** of the funded initiatives (see section 4.3.1).
3. Use of the **failure's rate** of proposals on the market (see section 4.3.1).
4. **Estimate of the user population** by dividing total revenues by the average spending per business or consumer user.

The assumptions used in the model on average spending per user follow:

- Pure software: average spending ranges from € 8 to € 400
- Hardware & software: average spending ranges from € 100 to € 4,000
- Non-IT services: average spending ranges from € 4 to € 330

4.4.2. Number of Users

The table below shows the potential number of users of the funded initiatives in 2014 and their projected increase to 2020 for the 3 main groups of initiatives.

Units	2014	2020	CAGR (2014-2020)
Pure software	82,000	3,600,000	88%
Non-IT services	80,000	18,000,000	147%
Hardware & software	3,000	700,000	147%
TOTAL	**165,000**	**22,300,000**	**127%**

Source: IDC European Vertical Markets, 2015

Table 33 Number of Users by Tech Type (Neutral Scenario)

The first group includes all the projects categorized as **pure software** solutions. This group is the first in terms of number of users in 2014 but it becomes the second by 2020 (moving from a share of 50% among the three categories to a share of 16%). The estimated users at 2020 are around 3.6 million, the 74% of which will be consumers (estimated at 2020). This category shows a slower growth with respect to the other two, with a 2014-2020 CAGR of 88%, which is the lowest one, leading to the mentioned users' share of only 16% by 2020. The other spaces, besides the consumer one, which show a

relatively higher users' share, are the cross-sector solution (8% of users estimated at 2020), followed Agriculture (4%), Business Services, Healthcare and Wholesale and Retail (3%). In particular, Healthcare and Agriculture show a high number of users because the specific focus of some accelerators led to more investments on these sectors. This effort is also confirmed by the revenues generated by these sectors, which are among the highest.

The second group refers to **non-IT related initiatives**. Non-IT services do not provide a technology but instead use a technology to provide a service. This is the market on which there is the largest number of users among the three categories, showing a share of 81% by 2020, growing at a 2014-2020 CAGR of 147%. Most of these services are marketplaces where companies or consumers can buy or exchange goods, look for specific services, find information, and so on. Their target market can include B2B and B2C, and because of their specific features (they offer useful services, they are easy to access, most often they are free, or at least cheap) they turn out to be potentially appealing to a wide audience.

The third group refers to **hardware and software solutions**. As highlighted before in this delivery, it is worth noting that most of the hardware and software solutions are IoT solutions. Because of the specific way in which these solutions are modeled, the presence of the hardware part make these solutions more expensive for users. This can be translated in a smaller number of potential buyers, and therefore data shows that for this category we estimate a lower number of users among the three groups (3% of users in 2020). However, these solutions are expected to grow healthily in the period under consideration. This trend is supported also by the expansion, for example, of IoT solutions. Also for these solutions, Consumers, Cross-sector solutions, Agriculture and Healthcare show the highest number of users. For Consumers, these solutions include intelligent devices, such as "smart" homes, cars, wearables, or consumer electronics. As before, solutions for Healthcare and Agriculture are supported by accelerators' investments.

	2014	2020	CAGR (2014-2020)
Accommodation and food services	500	60,000	125%
Agriculture	4,000	270,000	100%
Arts and entertainment	1,000	56,000	99%
Business Services	1,000	160,000	118%
Consumer	144,000	20,800,000	129%
Education	300	18,000	95%
Cross-sector solutions	4,000	400,000	113%
Healthcare	3,000	180,000	94%
Manufacturing	2,000	91,000	96%
Government	1,000	38,000	84%
Telecom and Media	200	18,000	104%
Transport	1,000	40,000	99%
Utilities	200	13,000	105%
Wholesale and retail	2,000	200,000	124%
Total	**165,000**	**22,300,000**	**127%**

Source: IDC European Vertical Markets, 2015

Table 34 Number of users by industry sector (Neutral Scenario)

The segmentation by industry sector confirms that consumers are the leading subject of the increase in the number of users. Also the role of accelerators in the financial support of some industry sectors is confirmed by the relative high percentage of users in Agriculture and Healthcare, even if they still hold a very small percentage of the total users (between 1% and 2%). Clearly, there is also a correspondence between revenues and users' growth among industry sectors.

4.4.3. Key findings

- By 2020, according to the Neutral scenario, Phase 3 companies still on the market are expected to reach the following user population:
  - Pure software companies: approximately 3,6 Million users
  - Hardware and Software companies: approximately 700,000 users
  - Non-IT services: approximately 18 Million users
- Consumer users will be approximately 20.8 Million, while business users are expected to be 1.5 Million.
- The number of consumer users increases faster than the number of business users, while revenues generated by the consumer sector grow slightly less than revenues generated in the B2B market, especially in the more dynamic industry sectors (e. g. utilities or business services). In fact, it is very difficult to extract revenues out of the consumer market where competition is high and willingness to spend by final users is low.
- In the consumer market there are lower entry barriers and success may arrive quickly. On the contrary, in the B2B world the time to gain acceptance by main clients is usually longer. B2B companies need at least 3 years lead time to build their reputation, while B2C companies can take off in a few months: if they don't show momentum quickly they are considered a failure.
- B2B companies have a smaller number of users than B2C ones by definition, since we count each business organization as a single user, even it includes thousands of employees using the application.

5. Identification of Potential Success Stories

5.1. Context

The European Commission wishes to promote stronger awareness of the successful outputs of the FI-PPP Phase 3 Accelerator projects (sub-grantees) as well as awareness of the FIWARE Brand with the objective of encouraging wider international market adoption of FIWARE Enablers.

A key part of this strategy is to identify "FIWARE Success Stories" from those sub-grantees funded by the FI-PPP Phase 3 Accelerators. FI-IMPACT is responsible for researching and authoring a number of FIWARE Success Stories as part of the FI-PPP Programme level impact assessment being undertaken. This will provide content for exploitation by the FIWARE Accelerators, FIWARE Press Office and FI-IMPACT, inform the programme level work of FI-IMPACT and complement the FIWARE branding activities of the Press Office.

To develop these Success Stories, it is important to take into account current thinking within the European Commission and the FIWARE Ecosystem as a whole. This includes current activities being carried out by FICORE and the FIWARE Press Office and the criteria that are evolving to identify prospective Success Stories.

This section provides an overview of the current thinking from FIWARE community stakeholders that FI-IMPACT is taking into account while undertaking its work in related areas. It then presents the methodological approach being undertaken by FI-IMPACT, and the target audiences and beneficiaries of this work. Based on nominations from Accelerators, project profiles are being created. A smaller number of case studies will then be researched and made available for dissemination between now and the end of FI-IMPACT.

5.2. Current Thinking about Success Stories within the FIWARE Community

During the recent meeting of the FIWARE 16 Accelerators (A16) and Coordination and Support Actions (CSAs) hosted by the FIWARE Press Office in Madrid on 07 July 2015, the European Commission reiterated the proposed common approach to identifying Success Stories agreed at a previous A16 Accelerator meeting in Paris (11 – 12 June 2015).

While it was clear that there was some divergence of views amongst the FIWARE 16 Accelerators in terms of what they felt constituted a Success Story, the Press Office clearly articulated that their mandate was to promote the FIWARE Brand. FICORE reiterated the importance placed by the European Commission on short-listing those sub-grantees that were most successful in integrating and exploiting FIWARE enablers.

FI-CORE circulated a questionnaire (Annex 7.5.1) to gather necessary data to inform technical assessment of FIWARE adoption by sub-grantees. The scoring methodology appears to be primarily driven by the number of enablers being used in a specific project.

During the Paris A16 Accelerator meeting (11 – 12 June), the key messages from the European Commission was that Success Stories were defined as successful adoption of FIWARE enablers and that FIWARE is the brand. These messages were reiterated during the Madrid meeting.

Figure 54 positions the relative responsibilities of FICORE and A16, and a definition of success that could constitute high business success and low use of FIWARE (with FICORE responsible for providing mentoring and coaching), high use of FIWARE and low business success (with A16 Accelerators responsible for providing mentoring and coaching) with the target outcome being high use of FIWARE and high business success. During the Madrid meeting, it was clear that some A16 Accelerators have a broader definition of what constitutes a FIWARE Success Story, with a greater emphasis on having a credible prototype, being able to communicate what market needs are being addressed, a compelling business model and securing reference clients and funding.

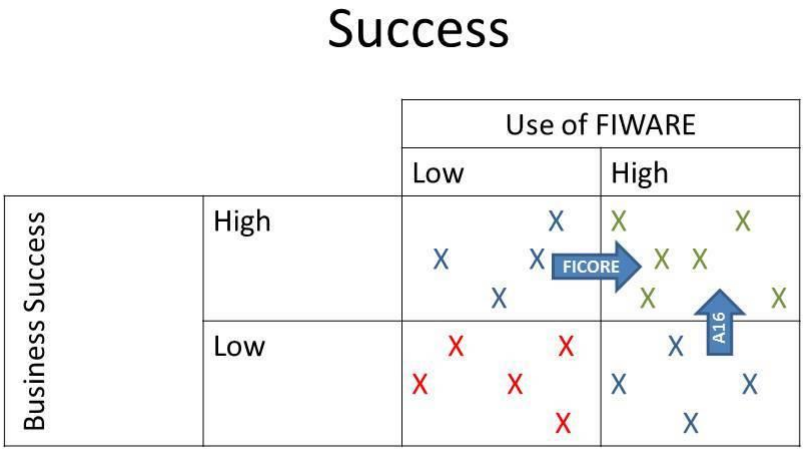


Figure 54 Definition and Responsibility for FIWARE Success Stories

Source: Materials presented during Paris meeting (11 – 12 June)

- **FIWARE:** Excellence in the usage of FIWARE technology – to be assessed by FIWARE Experts
- **SUCCESS:** Business Success, based on Business KPIs – to be assessed by A16 (and CSAs where applicable –FI-IMPACT is playing a role in this area)
- **STORY:** The way in which the selected companies will be marketed – to be performed by the FIWARE Press Office.

FICORE and FIWARE Press Office proposed a three stage process:

- Stage 1 – candidates selected by accelerators (business criteria, August)
- Stage 2 – candidates selected by FICORE (FIWARE Usage Criteria, Sept)
- Stage 3 – building up and marketing the FIWARE story by FIWARE Press Office.

5.3. FI-IMPACT Methodological Approach

With its focus on impact assessment at a FI-PPP programme level, FI-IMPACT is adopting a multi-phase approach to qualifying, short-listing and profiling FIWARE project profiles and subsequently a limited number of more detailed case studies will be written for wider dissemination.

In this context FI-IMPACT has adopted a multi-stage strategy to information gathering, analysis and assessment.

- Stage 1 focused on engaging with sub-grantees funded under Call 1 during June and July 2015 to complete a comprehensive impact assessment survey. This engagement was successful with more than 73% of Call 1 funded projects voluntarily completing the survey by mid-July (472 respondents). This provided insight into FIWARE usage, innovation focus, the feasibility of their idea, market needs being addressed and potential for social impact of the respondents.
- Stage 2 commenced in June 2015 and focused on requesting A16 Accelerators to nominate a ranked list of their most promising sub-grantees in terms of business and market potential, to be targeted to complete the project profile template in Annex 7.5.3. A prerequisite during this nomination process was successful integration of FIWARE technology. This will produce a set of up to 160 high potential project profiles, thus showcasing the breadth and depth of promising activities leveraging FIWARE technology. These will be grouped both geographically and thematically to facilitate targeted dissemination to relevant communities.
- Stage 3 involves FI-IMPACT: we will apply the KPI scores as the results of our impact assessment survey on the A16 Accelerators' ranked list of their most promising sub-grantees, and compare their list of top performers with ours. The aim is to agree on a shortlist of about 5 initiatives;
- FI-IMPACT has developed a structured questionnaire for the interview to the shortlisted initiatives, the questionnaire will be improved and finalized on the basis of the outcomes of the first interviews. FI-IMPACT will interview the shortlisted initiatives to produce a much more detailed description than in our current questionnaires. Some of them has been already contacted and interviewed.
- In parallel, FI-IMPACT is taking up invitations received from A16 Accelerators to participate in events where the progress of sub-grantees is being evaluated in Q4 2015, to share expertise and carry out semi-structured interviews of projects short listed by A16 Accelerators based on their achievements to date. During September 2015 for example, FI-IMPACT met SmartAgriFood's and FI-C3's sub grantees for face to face interviews FI-IMPACT will take advantage of similar events organised by other Accelerators to gather high quality information through face-to-face engagement with nominated projects.
- Stage 4 will take account of the FIWARE usage assessment process that FICORE has currently underway, with the objective of consolidating business and technical appraisal of sub-grantee projects, for use by the FIWARE Press Office, FI-IMPACT and Accelerators. These will complement communication pieces being developed by the Press Office and will also be made available for international dissemination.

While the FIWARE Press Office communication pieces will be more focused on developing the credibility and sustainability of the FIWARE brand, the project profiles and case studies researched and authored by FI-IMPACT will have a broader business and market driven focus to complement the work carried out by the FIWARE Press Office.

- Stage 5 will analyse commonalities and differences between the projects profiled to synthesise FIWARE good practices that will complement the project profiles and

case studies. This is only feasible after a critical mass of project profiles have been developed.

5.4. Landscape of Projects with high Business Potential

During August and September 2015 the A16 Accelerators started to rank their project portfolios to identify projects that were successfully using FIWARE and are addressing market needs with a business solution that has high potential.

To date 12 A16 Accelerators have nominated 117 projects primarily from the first Call of sub-grantees to be considered for the researching and production of project profiles and a smaller sub-set of potential case studies. The remaining four Accelerators are working through a ranking of their projects based on upcoming evaluations.

FI-IMPACT has undertaken an initial analysis of the activity focus of the 117 nominated projects. The following thematic areas have emerged: Smart Cities (41 projects); Media and Content (26 projects); Agrifood (20 projects); Health (13 projects); Clean Tech, Energy and Environment (9 projects); Learning (7 projects) and mobile application security (1 project). The sections below provide a short overview of the application and market focus of these nominated projects.

5.4.1. Smart Cities

Forty-one of the short-listed projects are undertaking activities related to Smart Cities. Four projects are focused on ***parking solutions.*** These projects range in focus from mobile payments, identification of parking slots, booking parking in advance, to a cloud-based parking solution.

Twelve projects are focused on a range of ***transport solutions***. Three projects are focused on bicycles, ranging from integrating public transport with rented bicycles (1 project), GPS-based anti-theft device to locate bicycles (1 project) and an online marketplace to rent bicycles from bicycle shops and micro-entrepreneurs (1 project). Five projects are focused on cars as a means of transport: integrating taxis with public transport (1 project), car pooling for intercity travel (1 project), car sharing for a fee (1 project), an aggregation site for car sharing (1 project) and a platform for car fleet management (1 project). One project is focused on optimising bus line systems. Two projects are focused on addressing communities with special needs, with one project focused on providing an indoor navigation system for visually impaired and the other project focused on managing transportation services for disabled children. One project is focused on automatic analysis of video streams re traffic flows.

Three projects are focused on ***package delivery***. One project focuses on delivery and return of goods purchased by online shoppers, the second project provides a marketplace for local delivery needs and the third project focused on cross-border deliveries and cross-carrier shipments.

Five projects are focused on ***tourism/travel solutions***, ranging from finding and hiring a local guide (1 project), apps to learn about city points of interest, shops and restaurants (1 project), platform to find travel experts (1 project), app to manage yachting marinas (1 project) and a geo-popularity algorithm to identify and visually represent popular areas (1 project).

Four projects are focused on ***air quality.*** One project focuses on leveraging an IoT platform to collect air pollution levels via city fleet vehicles and the second combines data acquired from sensors installed in moving vehicles and satellite images to issue alerts. The third project simulates real-time air pollution based on traffic emissions to make predictions on future scenarios, while the fourth project provides an indoor and outdoor air quality monitoring solutions for smart offices and cities based on sensors.

Four projects are focused on ***building related solutions***. One is focused on building automation (remote control access over KNX, a building automation standard), while the second on remote building security (IoT based security access and communication solution for homes and hotels), The third project focuses on city management (unified platform to manage large scale infrastructure and support crowd source driven issue reporting), while the fourth focused on issues related to maintenance of urban facilities and networks.

Two projects focused on ***Customer Relationship Management*** (CRM). One is focused on delivering a SAAS CRM integration solution (identifies churning customers and helps deliver superior customer support through existing CRMs) and the other is focused on providing a integrated shared loyalty card (supporting multiple local merchants) and CRM solution for SMEs.

Two projects are primarily focused on ***sport***, with one project providing an online marketplace for sport sponsorship and the other project providing apps and tools to support individuals to manage their sport activities.

Four projects are ***societal in focus***: proving a game for family and friends (1 project); an app to find skills in a specific area based on geo-located users (1 project); a database for missing children alerts connected with the National Home Office (1 project) and a location-based network focused on personal safety (1 project). The final project is focused on a service to request and access ***sustainability performance data*** on a company.

5.4.2. Media and Content

Twenty-six of the short-listed projects are focused on activities related to Media and Content.

Nine projects address ***content broadcasting.*** These projects range in focus from the perspective of broadcasters pushing content to the mobile phone of TV viewers (1 project), news publishing (1 project), event discovery and promotion of cultural events (1 project), live communication and interaction with large audiences during live performances (1 project), real-time broadcasting of content in a stadium (1 project), to a marketplace for web videos (1 project) and a B2B content broker for fashion (1 project). Two projects are primarily focused on tools for media companies - one to send real-time text-based notifications from streaming data and the other to identify content relevant to specific customers.

Four projects are focused on web-based ***multimedia,*** ranging from linking relevant sound, music and stories to a site (1 project), using geo-located interactive 3D scenes to tell stories (1 project), educational games for museums and cultural institutions (1 project) and light management (1 project).

Three projects are focused on addressing the needs of ***creative industry*** professionals by offering an application to generate digital content more efficiently, an online platform to allow fans to indicate where they would like bands to hold concerts and the third connecting creative minds with 3D modellers who can create the artefact.

Two projects are focused on ***cinemas*** with one project enabling cinemas to better engage with customers and the other providing an app that identifies the film you are watching and play dubbing in the language of your choice.

Four projects are focused on ***digital content*** from the perspective of providing a service to manage digital content from different sources, text creation, a gamified platform for the literature ecosystem and a website that collects tech product reviews from the press.

Two projects are focused on ***applications for visually impaired people***: a braille tablet and a 3D tactile map generator. The other two projects are focused on 3D audio sense virtual sound stage reconstruction and a marketing and analytics platform.

5.4.3. AgriFood

Twenty of the short-listed projects are focused on activities related to the Agrifood domain.

Four projects address ***crop management*** including monitoring of insect traps (1 project), disease awareness (1 project), disease prediction management (1 project) and smart chemical integration for spraying (1 project).

Twelve projects address ***farm management.*** Projects focus on farm management (2 projects), financial management (1 project), maintenance of agricultural assets (1 project), irrigation management (1 project), IoT automation system (1 project), field monitoring (1 project), IoT monitoring of feed stocks (1 project), remote monitoring of green houses and fields (1 project), light management in greenhouses (1 project), a tool to address New Common Agricultural Policy on permanent grasslands (1 project) and a service to connect farmers and professional machinery contractors (1 project).

Four projects address ***urban farming*** including a smart gardening box (1 project), app to support vegetable growing for novices (1 project), beehive management (1 project) and a marketplace to order locally products food-related products (1 project).

5.4.4. Health

Thirteen of the short-listed projects are focused on Health related issues. These project address a broad range of health related issues and conditions.

Three projects focus on addressing specific ***diseases*** such as Alzheimer (pre-diagnosis tool) and cancer (one focused on patient referrals between hospitals to clinical trials, with the other is focused on mobile personalised medical support). Two projects focus on m***ental health*** (platform for the elderly) and phobias and anxiety disorders (applying mobile-based virtual reality techniques).

Three projects are focused on encouraging ***fitness*** (one focused on healthy eating, one sharing physical activity with certified personal trainers, the third combining interactive workouts and meal plans for use at home). Two projects are focused on ***healthcare***

related training (one focused on TEL and workshop for dentistry, the other focused on visualisation of facial surgery outcomes).

Finally two projects focus on ***computer aided diagnostics*** (one focused on diagnostic analysis of medical images, the other focused on Diagnostic support for radiologists) and one project on ***telemedicine*** (communication platform supporting pre and post hospital treatment).

5.4.5. Clean Tech, Energy and Environment

Nine of the short-listed projects are focused on activities related to the Clean Tech, Energy and Environment.

Three projects focus on ***waste management*** including a smart bin for safe disposal of electronics (1 project), *an* app to gamify waste separation (1 project) and a sensor to measure the fill level of a waste container to determine collection schedules (1 project).

Five projects are related to energy with activities focused on ***grid monitoring*** for the distribution system operator (1 project), ***energy efficiency*** modelling (1 project), ***remote control of 3D printers farms*** (1 project), platform related to ***solar rooftops*** as a Solar as a Service business model (1 project) and the ability to manage appliances to ***adjust energy demand to energy consumption at household level*** (1 project).

The final project is focused on ***document management of field reports*** related to onsite inspections of structural elements (1 project).

5.4.6. Learning

Seven projects are focused on activities related to Learning. These projects include an app to source teachers nearby, facilitating connections with native speakers to support language learning, live streaming of coding, kits to build IoT and electronic projects and HTML5 Virtual Desktop, with two projects focused on interactive toys.

6. Conclusions

The previous chapters presented a comprehensive overview of the profile and perspectives of the initiatives funded by Phase 3, building on the data collected in the past year by FIMPACT, Here we wish to review briefly the key findings and draw some considerations from their combined results and interplay. There are three main strands of analysis in the report answering to the following key questions:

- **Who are the funded initiatives?** The mapping analysis details the profiles of 725 funded initiatives out of 6,571 proposals presented to the 16 accelerators, as of the 31st of August 2015.
- **How well are they performing?** This answer is based on the first measurement of the 4 KPIs on innovation focus, market focus, feasibility, and understanding of business or consumer market needs, for a group of 472 funded initiatives (out of the original 725) who responded to the impact assessment online survey, as of the 3rd November, 2015.
- **What is the potential market impact of the business ideas funded by Phase 3**? The results of the market model provide an estimate of the potential forecast revenues in 2020 of all the initiatives funded by the Programme, which are expected to be as many as 1000 by the end of Phase 3.

The main answers to these questions are reported below.

6.1. Who are the funded initiatives?

The 725 initiatives examined were selected by 15 accelerators (Frontier Cities had not yet completed its selection at the time of writing this deliverable), of which 3 accelerators (16% for Soul-FI, 12% for Speed-up Europe and 11% for FICHe) have a large percentage of total selected initiatives. The distribution of funded initiatives by Accelerator influences their geographic location. We found that accelerators tended to collect more proposals in their home countries. We also found that Accelerators generally financed projects pertaining to the specific market focus in which they consortium members were already active. This is one of the reasons why so many initiatives in our sample are focused, for example, on agribusiness (one the priorities of Speed-up Europe) or healthcare (targeted by FICHe).

In terms of geography, 95% of the funded initiatives come from the EU, while the others come mostly from Serbia, Israel, Ukraine, Turkey and Switzerland. Within the EU, Spain, Germany, and Italy are the top three countries with the largest number of successful applications and together account for almost half of the funded initiatives, followed by the Netherlands and Greece. Several factors influenced this geographical distribution: simple country size leading to more proposals; the location of the Accelerators; better quality of proposals in some countries, leading to higher success rates (this is the case of Sweden, Greece, Serbia and the Netherlands). However, the number of funded initiatives compared to the country population is particularly high in Spain and low in the UK and France. An additional potential explanation is that the Accelerator programmes were particularly attractive for potential entrepreneurs in the countries where there is limited access to seed capital for new business ideas, which is the case for Southern European countries. This means that the FI-PPP Phase 3 helped to fill a gap in innovation funding across the EU.

Start-ups and young companies. The majority of sub-grantees are very small companies (67% have less than 5 team members) or start-ups (38% have no or less than 1 year business experience, another 24% have less than 4 years' experience). The size of teams is correlated with the years of experience, with the smaller teams having less experience. This shows that Phase 3 achieved its objective to find and select new or very small innovative enterprises.

The majority develop technology solutions for the business market. The funded initiatives can be classified in 3 main groups: pure software solutions (50%), hardware/software solutions (24%, mostly offering IoT solutions with sensors or other hardware components) and non-IT services (25% of total), who leverage the technology to offer services. Most funded initiatives are addressed to the B2B market (62%) or B2B2C (20%); only 17% focus solely on the consumer market.

The initiatives address a wide range of vertical markets, with the exception of finance. The top ranking targeted sectors are agriculture (21% of initiatives), healthcare (19%), manufacturing (13%) and government (11%). There is also a relevant group of initiatives developing cross-sectors solutions (17%), with no specific vertical market focus. A group of 123 initiatives are focused on the Smart cities market: 41% of them develop applications for government, 29% for transport, 13% for energy and 10% for healthcare. The identification of target markets was done by IDC on the basis of each initiative's type of solution, because in some cases their self-assessment was not aligned with IDC's sector classification criteria.

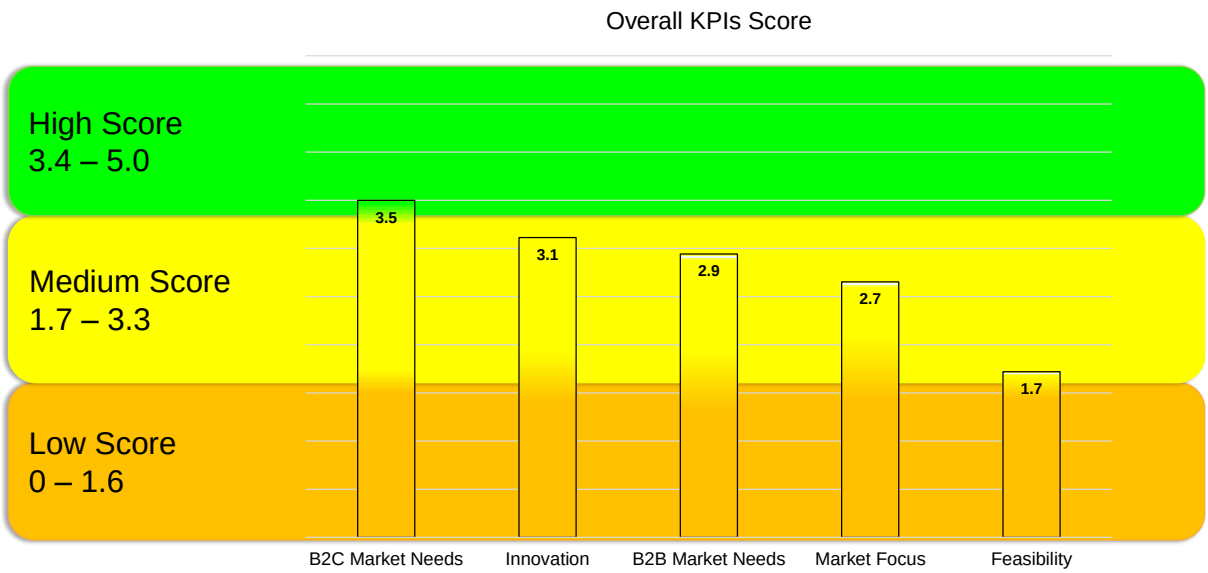
Fiware use. Fiware's enablers most often employed by the funded initiatives belong to the Data/Context Management (53% of initiatives), Security (52%), and Advanced Web-based User Interface chapters (45%). Making delivery and usage of services trustworthy by meeting security and privacy requirements is also a strong focus. Interface to Networks and Devices remains marginal and only a couple of selected business ideas focus on it.

6.2. How well are they performing?

The 472 sub-grantees who responded to the Impact Assessment Survey perform moderately well on average for the Innovation Focus, Market Focus and Market Needs KPIs, while the level of performance for the Feasibility KPI is lower and could indicate a potential weak point in their path towards commercial success.

It should be noticed that the Impact Assessment survey was carried out after the initiatives were selected, but while they were undergoing the training and support activities designed by Accelerators. Therefore it generally reflects the early phase of development of their plans and business ideas. A repetition of the survey in a later stage may well lead to different results.

The figure below presents a comparative view of the average scores of the Key Performance Indicators. This view of all the KPI scores shows a better performance of the sub-grantees for the aspects concerned with the development of their business idea and their vision of the market (innovation and business needs indicator) rather than the practical go-to-market activities (feasibility).



N= 472 respondents to the FI-IMPACT Assessment Tool (Innovation, Market Focus, Feasibility)

N= 466 respondents to the FI-IMPACT Assessment Tool (B2C and B2B Market Needs)

Source: FI-IMPACT 2015

Figure 55 FI-IMPACT Overall KPI Scores

More specifically the KPI scores by indicator are the following:

- The **Consumer Market Needs KPI** shows an average score of 3.5, corresponding to a high performance level. This is an excellent result, since B2C initiatives have a potentially high demand and chances of success. However, the indicator is based on a small number of respondents (102), which may have been a factor. The coherence between projected benefits and real consumer needs is particularly high for some market segments such as the citizen engagement, DIY and design, environment and nature segments.
- **Innovation Focus**: measures the level of innovation and positioning in the go-to-market process of the suggested solution. **The average score is 3.1**, corresponding to a medium-high level of performance. This indicates that most funded initiatives show a good level of originality and innovation in their offerings.
- **Market Focus**: measures the level of knowledge of target customers and of development of an appropriate market strategy. **The average score is 2.7**, corresponding to a medium level of performance. This score is the result of a polarisation in the sample, between a group of initiatives with very low scores and a group with high scores demonstrating a satisfactory knowledge of their target markets. This means that about a third of the funded initiatives already have a potentially strong market strategy, but another third needs to improve their market plans to have a better chance of success.
- **The Business Market Needs KPI** measures performance in the potential satisfaction of targeted customers' needs, measured as the level of alignment between the solutions' promised benefits and real market needs. **The average**

score is 2.9 corresponding to a medium-high level of performance. The results by sector underline some differences: initiatives targeting the Manufacturing, Business Services and Cross-sectors Solutions show a good alignment with market needs, while those targeting Agriculture and Education appear less aligned with customer priorities. These last sectors tend to have less sophisticated IT users, who may have lower awareness of the potential benefits to be gained from innovative products. Success in these markets will in any case require important efforts to stimulate potential demand.

- **Feasibility**: measures the performance in the development of the business and financial plan of the funded initiatives. The average score is 1.7, corresponding to a medium-low level of sustainability and feasibility. Only 13% of initiatives have a good performance in this KPI. This points to the very early phase of development of most of these initiatives, but underlines a potential weakness in their go-to-market path: unless they find quickly additional financial resources and support they may have difficulty achieving their business plans.

6.3. What is their potential market impact?

We have examined the potential market impact of Phase 3 initiatives from 3 points of view: the market opportunity, based on the market space where they will launch their services; the estimate of their potential revenues; the estimate of their potential users.

6.3.1. The Market opportunity

By 2020, the value of the European IT market is projected to reach €B 439, while the total forecast revenues of the initiatives funded by Phase 3 may reach at best a few hundreds of millions in the same year (Figure 56). There is in fact no possible comparison in terms of pure size. Even the smallest sectors by value, such as Agriculture, which is expected to represent only 1% of the total IT market in 2020, will generate sufficient IT spending to potentially sustain all the Phase 3 initiatives. **So there will be plenty of opportunity for our innovative enterprises.**

More specifically:

- **Pure software solutions** will face a market with growth rates ranging between 3.2% (Content applications) and 17% (Collaborative Applications) in the period 2014-2020. Only the Consumer segment is expected to decrease in value because of the growth of free applications. Phase 3 initiatives falling in this group are distributed across the 9 identified application areas, with a concentration in the Operations and Manufacturing Applications segment and the Data access, analysis, and delivery software segment. It will be a highly competitive market but with plenty of opportunity.
- **Hardware and Software solutions** will face a highly promising market driven by the diffusion of IoT, with double-digit spending growth to 2020. The funded initiatives of this group appear well aligned with the fastest growing segments.
- **The initiatives providing non-IT services** will not draw revenues from the IT market but are focused on experimenting with emerging business models, leveraging social media channels, crowdfunding and sharing platforms and the like. They will face the markets with the highest risks of failure but also the highest growth potential if successful.

It is also relevant to examine to what extent Phase 3 funded initiatives are addressing the most promising market segments, those with the fastest growth rates and the most attractive potential opportunities (Figure 57).

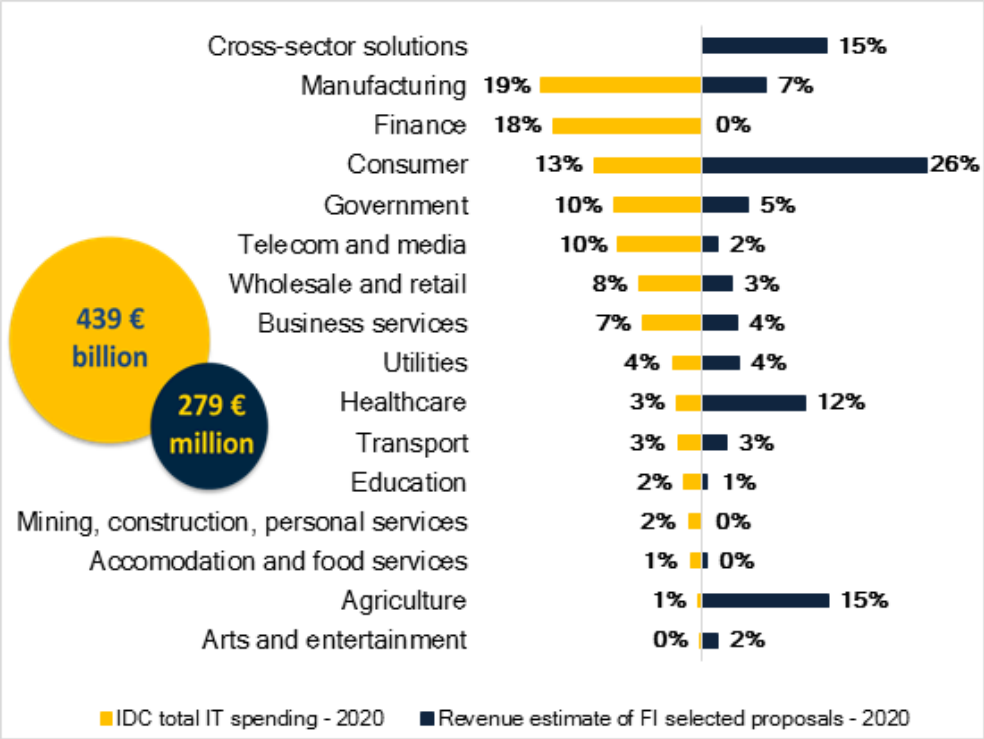


Figure 56 Comparison of IT spending and Phase 3 funded initiatives forecast revenues, % by industry, 2020

Source: IDC 2015

The Consumer market is a special case. IT spending in the consumer market is relevant (13% of total in 2020) but is expected to decrease by 2020 (because of the large quantity of free or freemium software business models); however the main source of revenues for B2C initiatives in our sample should be non-IT services which have a great potential.

Concerning the other market sectors, Phase 3 initiatives are concentrated first of all in the Healthcare market, whose IT spending is expected to have a healthy growth rate to 2020; in the agriculture sector, whose IT spending growth rate is about average; and in the manufacturing sector, which is not only the largest by size, but will have a medium to high growth rate to 2020. These sectors are characterized by high potential for digital innovation, ranging from e-health to smart manufacturing, to precision farming. There are also small groups of initiatives targeting the business services and utilities markets, which enjoy the fastest growth rates, and the retail market which has average growth rates (but the e-commerce segment instead grows fast). The other initiatives address sectors with medium to low growth rates, because of their high inertia and organizational barriers: this is the case of the government and education sectors. However, many of the Phase 3 sub-grantees addressing the government market do so within the context of smart cities projects, one of the few areas with good growth potential in the public sector. Particularly surprising instead is the lack of projects addressing the finance sector which is a highly attractive opportunity.

Overall, Phase 3 initiatives are distributed across all the economy sectors and most of them are addressing market opportunities with good or excellent potential, particularly where the Fiware technologies are combined with Big Data and IoT innovation.

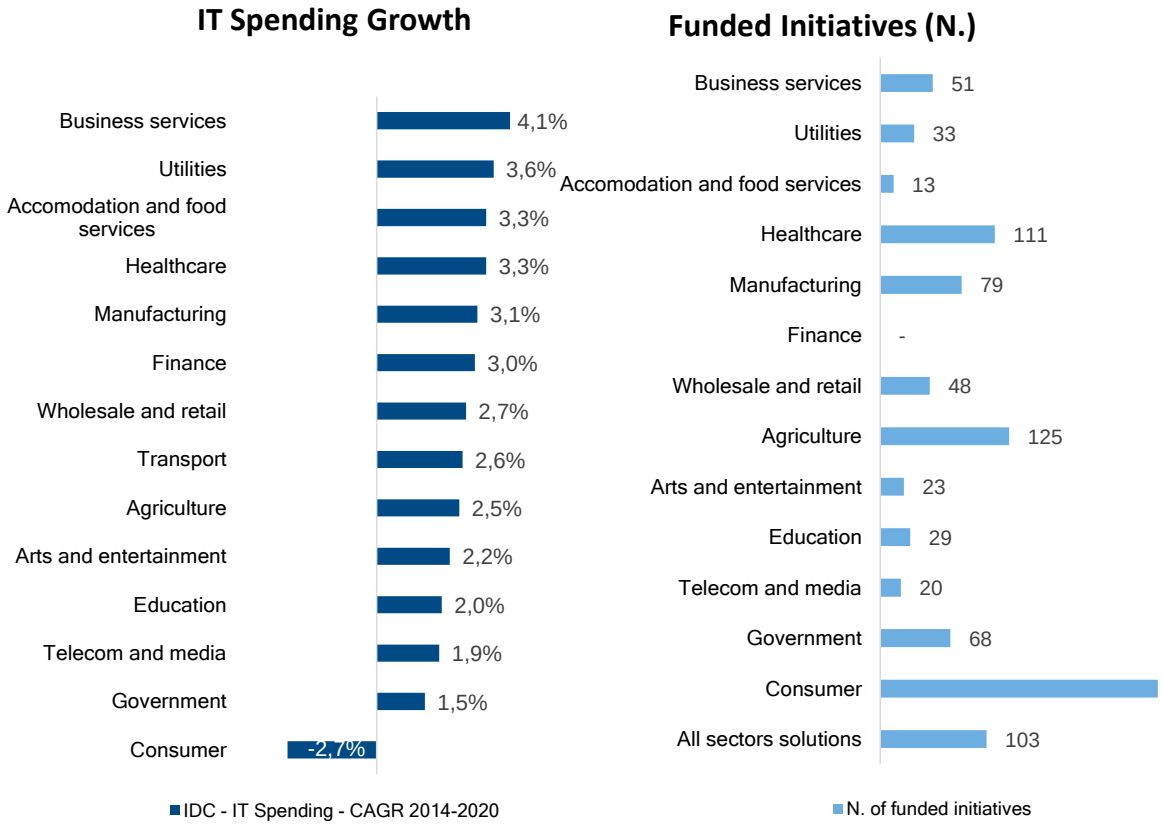


Figure 57 EU IT spending growth trends 2014-2020 vs Number of Funded Initiatives by Vertical Market, 2015

Source: Elaboration on IDC data 2015

6.3.2. The potential revenues and users

In summary, these could be the potential market impacts of Phase 3:

- From an initial group of about 1000 funded initiatives, we expect that by 2020 approximately 500 new or newly grown small and medium enterprises will be active in the EU market.
- In the year 2020, these new companies will generate 279 €Million of revenues under the Neutral scenario (with a 46% death rate on the initial sample).
- If many of these companies match well demand needs, the death rate could decrease to 33% on the initial sample with total revenues in 2020 of 336 €Million;
- If instead many of these companies are unable to succeed, death rates could reach 60% with total revenues in 2020 of 203 €Million.
- However, if even one of these new companies took off like Uber or Airbnb becoming a Superstar, it could generate up to 250 €Million of revenues in 2020 increasing dramatically the total market impact.

By 2020, according to the Neutral scenario, Phase 3 companies still on the market are expected to reach the following user population:

- Pure software companies: approximately 3,6 Million users
- Hardware and Software companies: approximately 700,000 users
- Non-IT services: approximately 18 Million users

Consumer users will be approximately 20.8 Million, while business users are expected to be 1.5 Million.

In terms of revenues by market sector, the 279 €Million of the Neutral Scenario are expected to be segmented as shown in the following picture. The markets generating the highest value should be:

- Consumer (26% of total)
- Agriculture (15% of total)
- Cross-sector solutions (15% of total)
- Healthcare (12% of total).

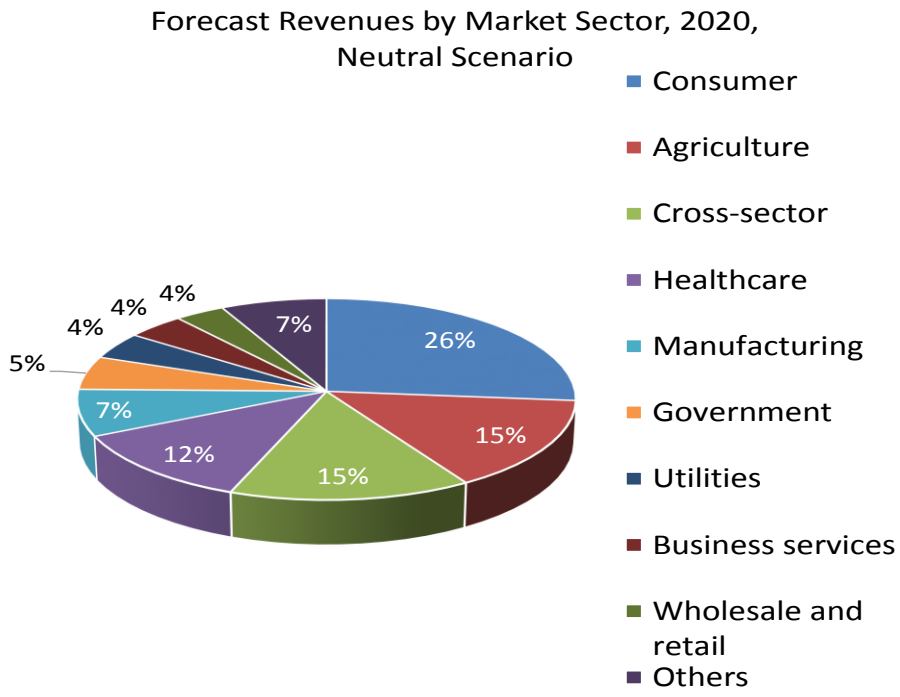


Figure 58 Forecast revenues of Phase 3 initiatives by sector, 2020, Neutral Scenario (% of value)

Overall, the creation of up to 500 new profitable SMEs by 2020 with expected revenues ranging between 500 and 200 €Million and over 22 million of users represents a good return on investment compared to the original 80 €Million invested in Phase 3 by the EC.

This is only the first round of estimates of potential market impacts. As we monitor the evolution of the funded initiatives we will update these estimates.

6.4. Which initiatives have the highest business potential?

During August and September 2015 the A16 Accelerators started to rank their project portfolios to identify projects that were successfully using FIWARE and are addressing market needs with a business solution that has high potential.

FI-IMPACT has undertaken an initial analysis of the activity focus of the 117 nominated projects. The following thematic areas have emerged: Smart Cities (41 projects); Media and Content (26 projects); Agrifood (20 projects); Health (13 projects); Clean Tech, Energy and Environment (9 projects); Learning (7 projects) and mobile application security (1 project).

We are now in the process to compare these nominated projects with the list of those achieving high KPI scores in our assessment and to collect feedback from the A16 on these lists.

6.5. Next steps

6.5.1. Mapping

- During the upcoming months FI-IMPACT will continue the data collection on the Accelerators' call results and analysis of selected and funded initiatives:
    - The mapping analysis will be undertaken for the sub-grantees of Calls 2 and 3 and for the FrontierCities' sub-grantees from Call 1.

6.5.1. KPI Measurement

- FI-IMPACT will implement a new round of measurement for the new funded initiatives and the missing respondents from Call 1;
- FI-IMPACT has already started the identification and analysis of the top performers, also as an input for the identification of potential success stories:
    - FI-IMPACT has shared with the Accelerators the ranking of their sub-grantees' scores and has started discussing with them the results.
- FI-IMPACT is also analyzing the scores of the projects eliminated from the Accelerators' program and is sharing the results with the A16.

6.5.2. High Business Potential Projects

- As a first step, FI-IMPACT is collecting the Accelerators' candidate initiatives based on the document available on Basecamp and direct feedback from A16;
- FI-IMPACT will apply the KPI score on the Accelerators' candidates these, and compare their list of top performers with ours. The aim is to agree on a shortlist of about 5 initiatives;
- FI-IMPACT has developed a structured questionnaire for the interview to the shortlisted initiatives, the questionnaire will be improved and finalized on the basis of the outcomes of the first interviews;
- FI-IMPACT will interview the shortlisted initiatives to produce a much more detailed description than in our current questionnaires. Some of them have already been contacted and interviewed.

This process will allow us:

- To explain the "why" they can be considered success stories by looking at empirical evidence supporting their success potential;
- To document the success story for the dissemination through a project template.

Other activities that will be implemented for this task include:

- Participating in relevant meetings to engage with sub-grantees is an ongoing activity based on when Accelerators have evaluation meetings that FI-IMPACT can productively participate in and undertake face-to-face interviews with sub-grantees short listed by the Accelerator;
- The project profiles and case studies will be published in the FI-IMPACT Library after the final content has been validated by the sub-grantees. This content will also be made available to relevant Accelerators and FIWARE Press Office to disseminate.

6.5.3. Market Modeling and revenue forecasting

- The new data from the mapping and KPI measurement will feed into the market model and revenue model for future updates
- As suggested at the review meeting, FI-IMPACT will implement a sensitivity analysis to test the assumptions of the market model
- For the revenue estimate FI-IMPACT will examine how to consider the established companies and reflect this data in the model

7. Annex

7.1. KPIs Algorithms

The KPIs algorithms used to compute aggregated scores were presented in D.2.2 but have been revised and updated in this Deliverable, based on the actual data results. The algorithms are reported below. The main changes were the following.

The detailed questionnaire is provided in Annex 7.4.

Innovation KPI:

- The initial approach described in D.2.2 was based on using the answer to the 1st question (TRL Technology Readiness Level) as a baseline and then multiplying it by the answers to the following questions, using different weights. This resulted in uniformly low results and underestimated the assessment of the level of innovation.
- The revised algorithm calculates separately the questions related with the closeness to the market and those related with the level of innovation as two main components of the indicator, and averages the final results. This reflects better the nature and positioning of the initiatives in terms of innovation as defined by our approach.

Innovation Algorithm = (@Q2_1 +@Q2_4)*@Q2_2 *@Q2_3 *@Q2_5

Market Focus KPI:

- This indicator is still calculated as the weighted average of two main components: Customer focus and Market attractiveness.
- We have sterilized the answers to Q.3.3 (targeted market sector) and Q.3.4 (targeted distribution channel) in terms of scoring because the answers here should be equal in terms of potential impact on success. They provide valuable information to be used for the analysis of initiatives only.
- We have revised the weights used to score Q.3.5 (targeted market scope in terms of geography), giving a lower score to initiatives targeting a local market (because of too little ambition) and a higher score to initiatives targeting multinational or global markets, but with a smaller gap between scores (score 1 for local, score 2.5 for global instead of 5). This was done because the maximum score weighted too much, influencing excessively the aggregated score of the whole indicator.

Market Focus Algorithm =
(@W1*(@Q3_8+@Q3_9)/2) + (@W2*(@Q3_10 +@Q3_11+@Q3_5+G35)/2)/2

Feasibility KPI:

- no change

Feasibility Algorithm =
[@W3*(@Q4_1 + (Q4_6' / 100)*5)/2 + @W4*(@Q4_2 +@Q4_4 +@Q4_5)/3]/2

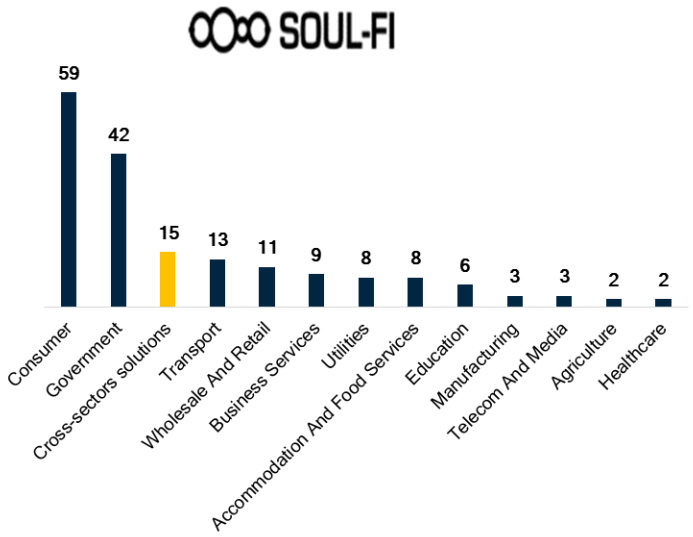
Market Business Needs KPI:

- no change, but the results were normalized from a range from 1 to 10 to a range from 1 to 5.

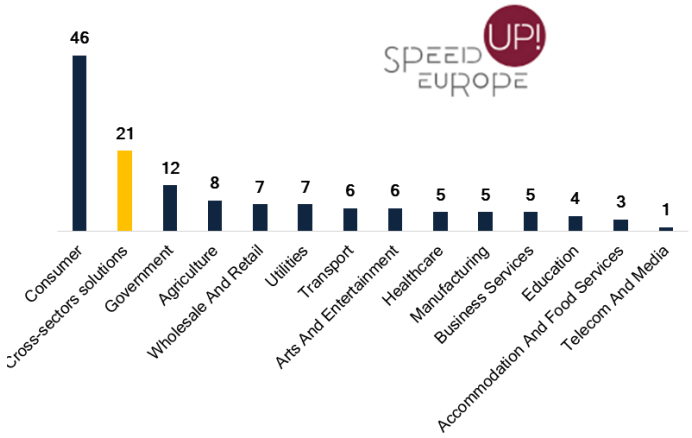
Consumer Needs KPI:

- A benchmark based on external sources and IDC's expert assessment was identified and applied to calculate the indicator in the same way as the business needs.

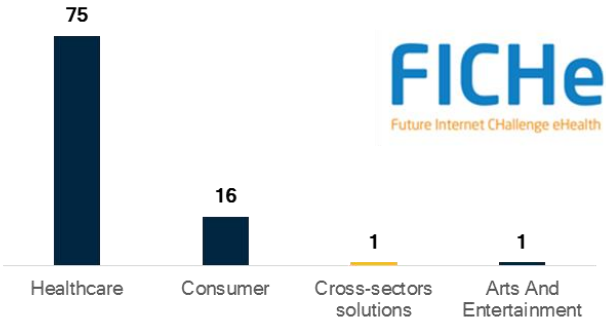
7.2. Additional figures related to Chapter 2 Mapping of FI-PPP Phase III Funded initiatives



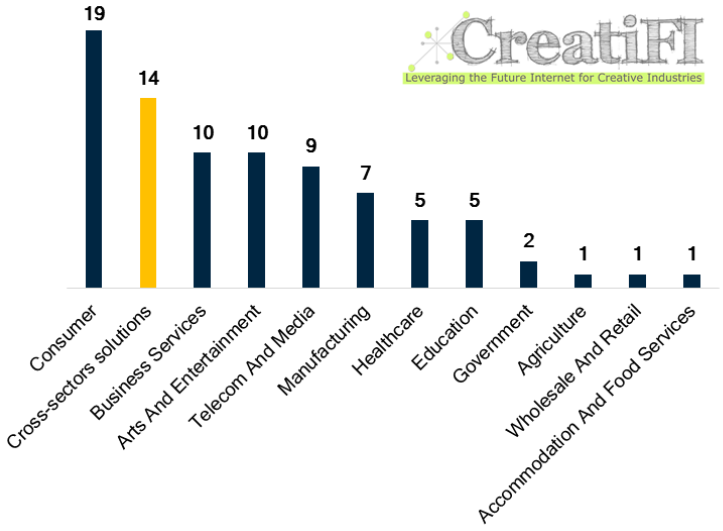
Accelerator: SOUL-FI
n = 119 selected projects
Multiple answers allowed



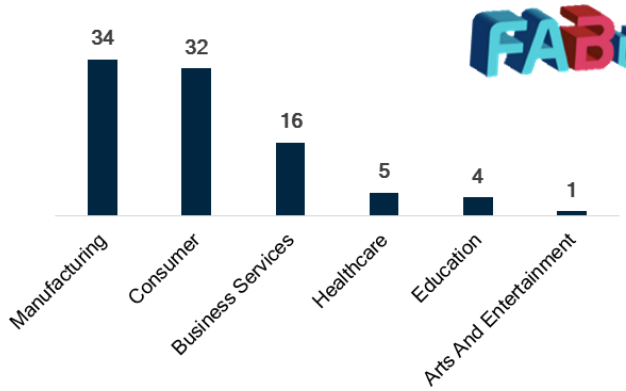
Accelerator: SpeedUp Europe
n = 90 selected projects
Multiple answers allowed



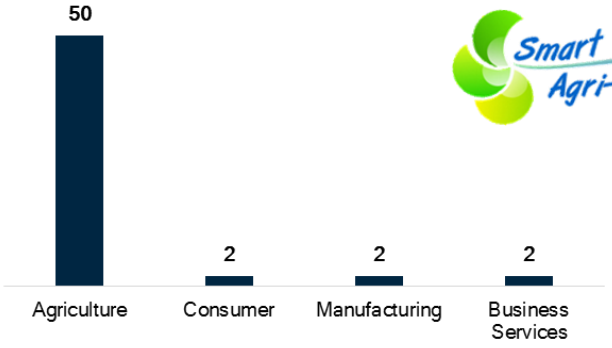
Accelerator: FICHe
n = 80 selected projects
Multiple answers allowed



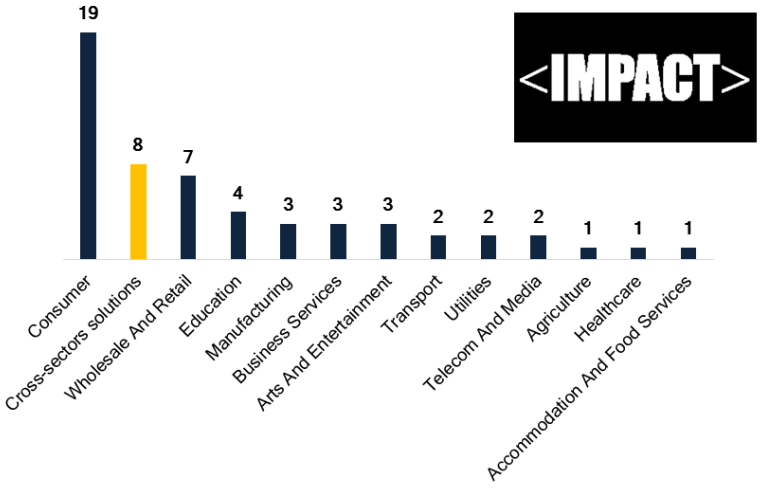
Accelerator: Creati-FI
n = 59 selected projects
Multiple answers allowed



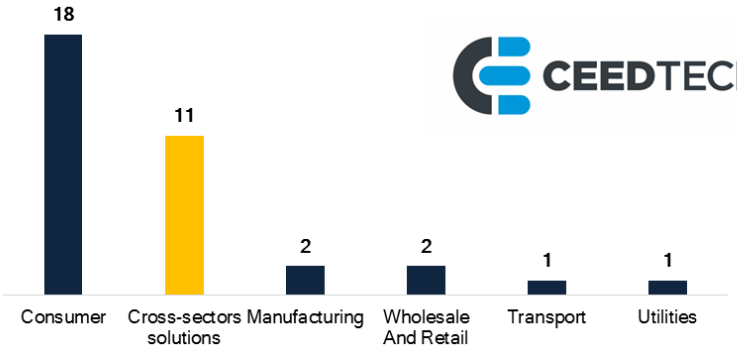
Accelerator: FABulous
n = 53 selected projects
Multiple answers allowed



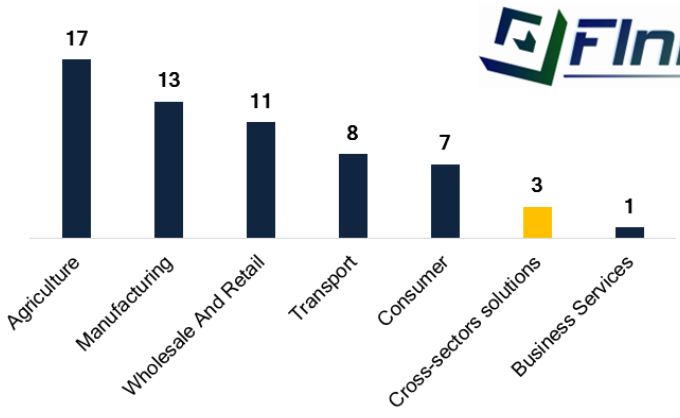
Accelerator: Smart AgriFood
n = 50 selected projects
Multiple answers allowed



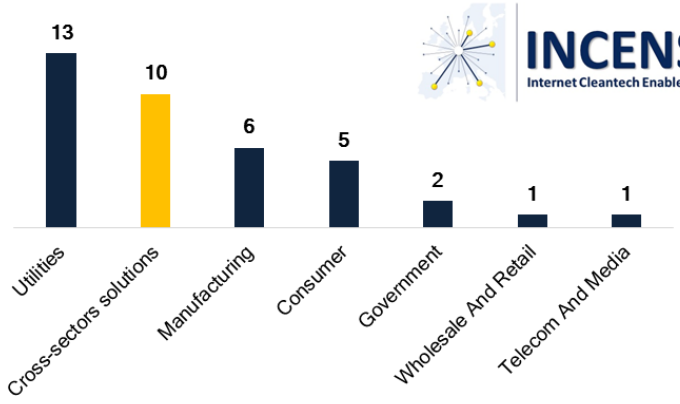
Accelerator: IMPACT
n = 42 selected projects
Multiple answers allowed



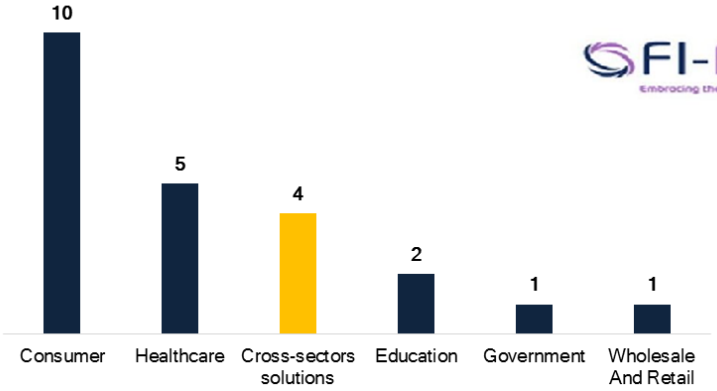
Accelerator: CEED-Tech
n = 34 selected projects
Multiple answers allowed



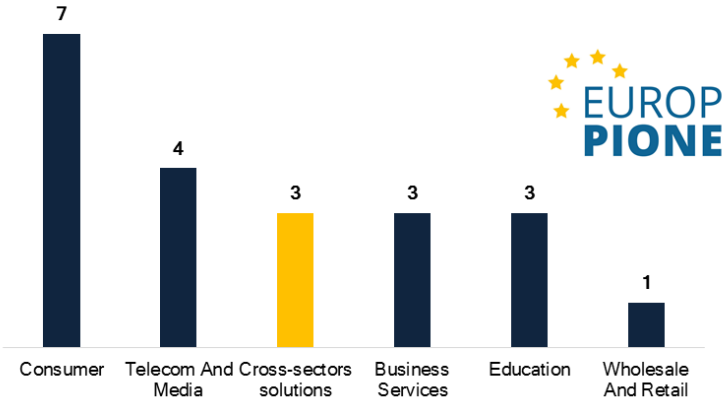
Accelerator: Finish
n = 32 selected projects
Multiple answers allowed



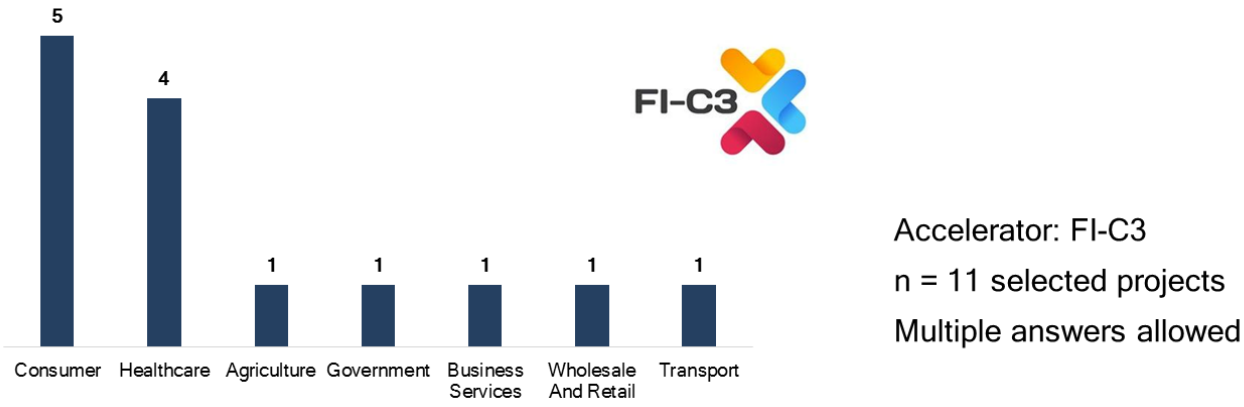
Accelerator: INCENSe
n = 26 selected projects
Multiple answers allowed



Accelerator: Fi-Adopt
n = 25 selected projects
Multiple answers allowed



Accelerator: European Pioneers
n = 12 selected projects
Multiple answers allowed



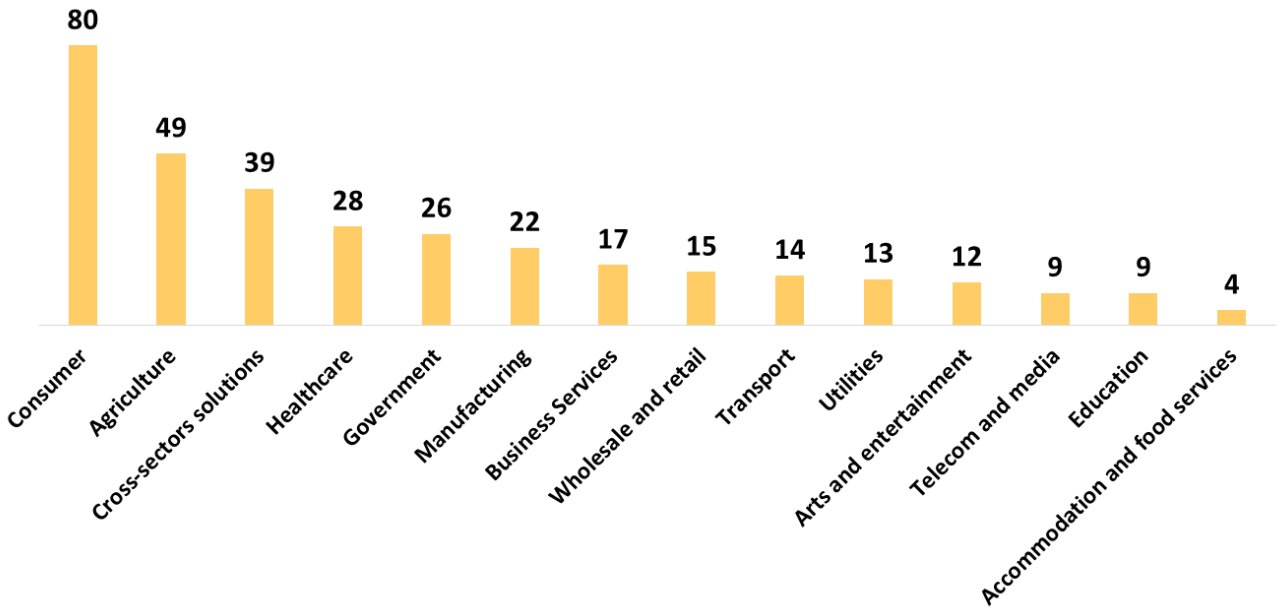
Source: FI-IMPACT 2015, based on data provided by accelerators

Figure 59 Selected Proposals by Vertical Market, by Accelerator (15 Accelerators)

Table 35 Distribution of funded initiatives (by industry sector, target country, type of solution offered, and team size)

		Pure software				Non-IT services				Hardware & software			
		0-1	**From 2 to 5**	**From 6 to 10**	**More than 10**	**0-1**	**From 2 to 5**	**From 6 to 10**	**More than 10**	**0-1**	**From 2 to 5**	**From 6 to 10**	**More than 10**
Accommodation And Food Services	**National**	0.2%	0.1%	0.0%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%
	Multiple Countries	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Agriculture	**National**	0.0%	0.6%	0.4%	0.2%	0.2%	0.3%	0.4%	0.0%	0.0%	0.9%	0.0%	0.0%
	Multiple Countries	0.0%	4.3%	0.9%	0.0%	0.0%	1.7%	0.4%	0.3%	0.0%	2.3%	0.3%	0.3%
Arts And Entertainment	**National**	0.2%	0.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Multiple Countries	0.0%	0.5%	0.3%	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.5%	0.0%	0.0%
Business Services	**National**	0.0%	0.5%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
	Multiple Countries	0.0%	1.2%	0.3%	0.1%	0.1%	0.4%	0.1%	0.0%	0.0%	0.3%	0.1%	0.0%
Consumer	**National**	1.5%	1.2%	0.5%	0.1%	0.6%	2.8%	0.6%	0.2%	0.4%	1.2%	0.1%	0.0%
	Multiple Countries	0.2%	3.9%	2.7%	0.6%	0.7%	4.9%	1.3%	0.0%	0.7%	2.1%	0.7%	0.2%
Education	**National**	0.3%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Multiple Countries	0.0%	0.2%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Horizontal	**National**	0.9%	1.7%	0.6%	0.0%	0.2%	0.8%	0.0%	0.2%	0.0%	0.9%	0.0%	0.0%
	Multiple Countries	0.2%	4.4%	1.2%	0.0%	0.0%	1.8%	0.2%	0.0%	0.0%	1.4%	0.2%	0.0%
Healthcare	**National**	1.1%	2.9%	1.3%	0.0%	0.4%	0.3%	0.2%	0.0%	0.8%	1.7%	0.7%	0.2%
	Multiple Countries	0.0%	2.3%	1.0%	0.1%	0.0%	0.3%	0.1%	0.0%	0.0%	0.8%	0.4%	0.1%
Insurance	**National**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Multiple Countries	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Manufacturing	**National**	0.0%	0.8%	0.2%	0.0%	0.1%	0.5%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%
	Multiple Countries	0.0%	2.0%	0.8%	0.1%	0.1%	0.7%	0.3%	0.0%	0.0%	0.4%	0.1%	0.0%
Government	**National**	0.5%	0.7%	0.5%	0.0%	0.1%	0.7%	0.3%	0.0%	0.2%	0.5%	0.0%	0.0%
	Multiple Countries	0.0%	0.7%	0.5%	0.2%	0.0%	0.5%	0.0%	0.0%	0.2%	0.8%	0.1%	0.0%
Telecom And Media	**National**	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
	Multiple Countries	0.0%	0.8%	0.3%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Transport	**National**	0.0%	0.4%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.2%	0.1%	0.2%	0.0%
	Multiple Countries	0.0%	0.7%	0.1%	0.1%	0.0%	0.3%	0.0%	0.0%	0.2%	0.2%	0.1%	0.0%
Utilities	**National**	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	0.0%
	Multiple Countries	0.0%	0.4%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.4%	0.8%	0.1%	0.0%

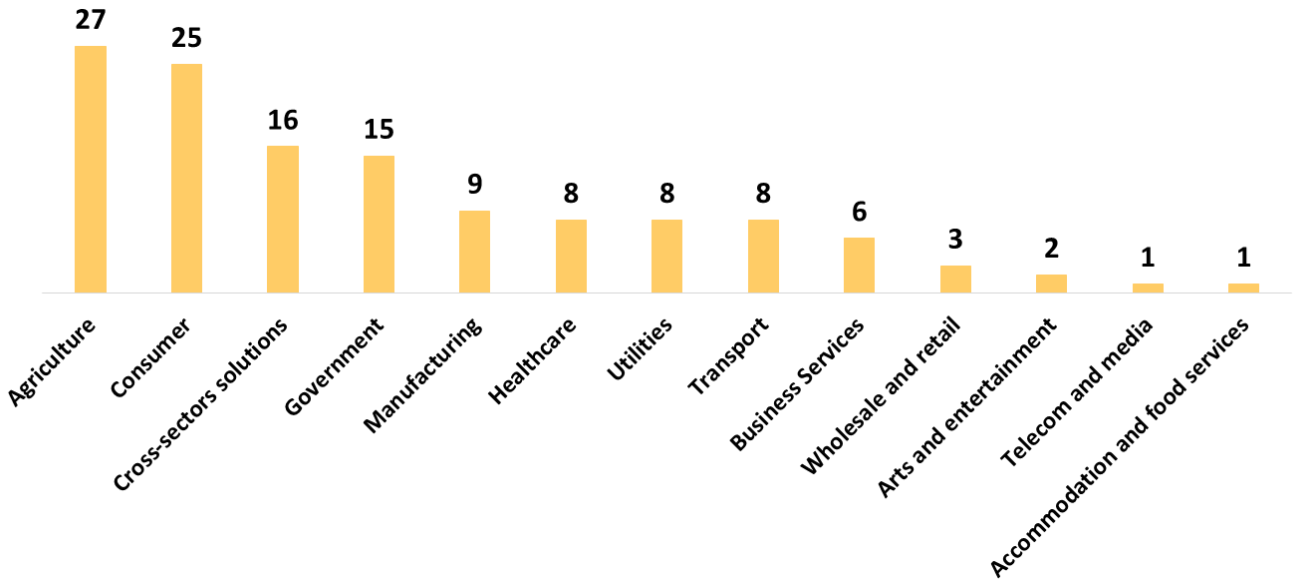
Wholesale And Retail	**National**	0.5%	0.3%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%
	Multiple Countries	0.2%	0.8%	0.1%	0.1%	0.2%	0.4%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%



n = 246; number of initiatives using Data/Context Management

Base = 15 accelerators, excluding FrontierCities

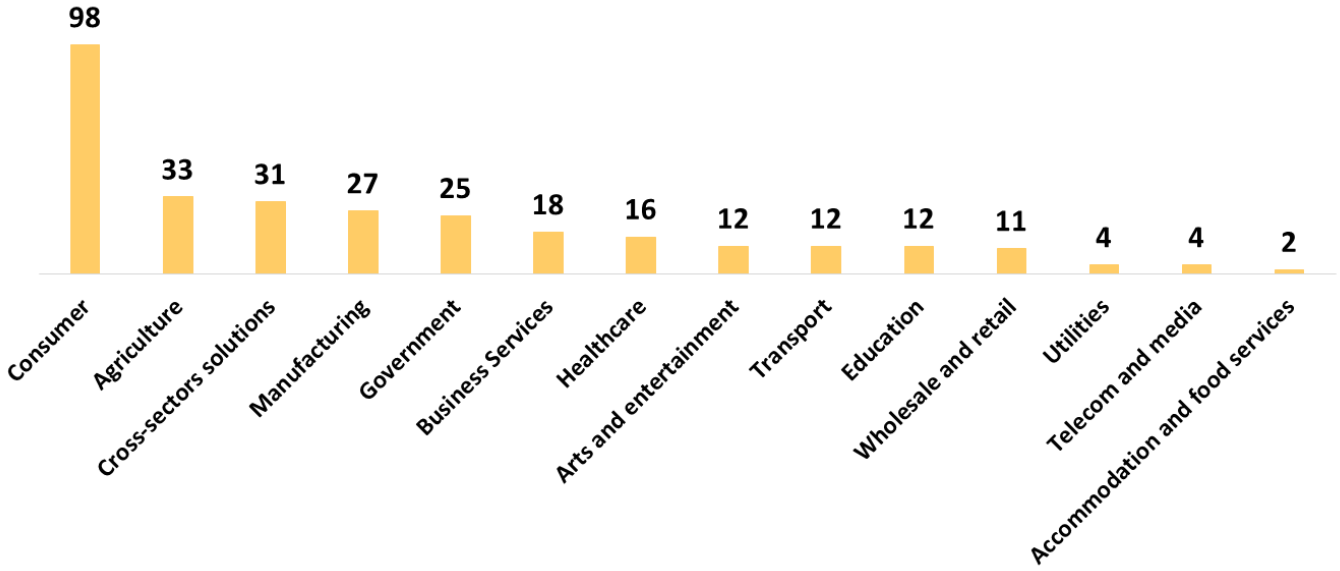
Multiple answers allowed (one initiative might use several Data/Context Management-related technologies and target multiple industries at the same time)



n = 100; number of initiatives using Internet of Things (IoT) Services Enablement

Base = 15 accelerators, excluding FrontierCities

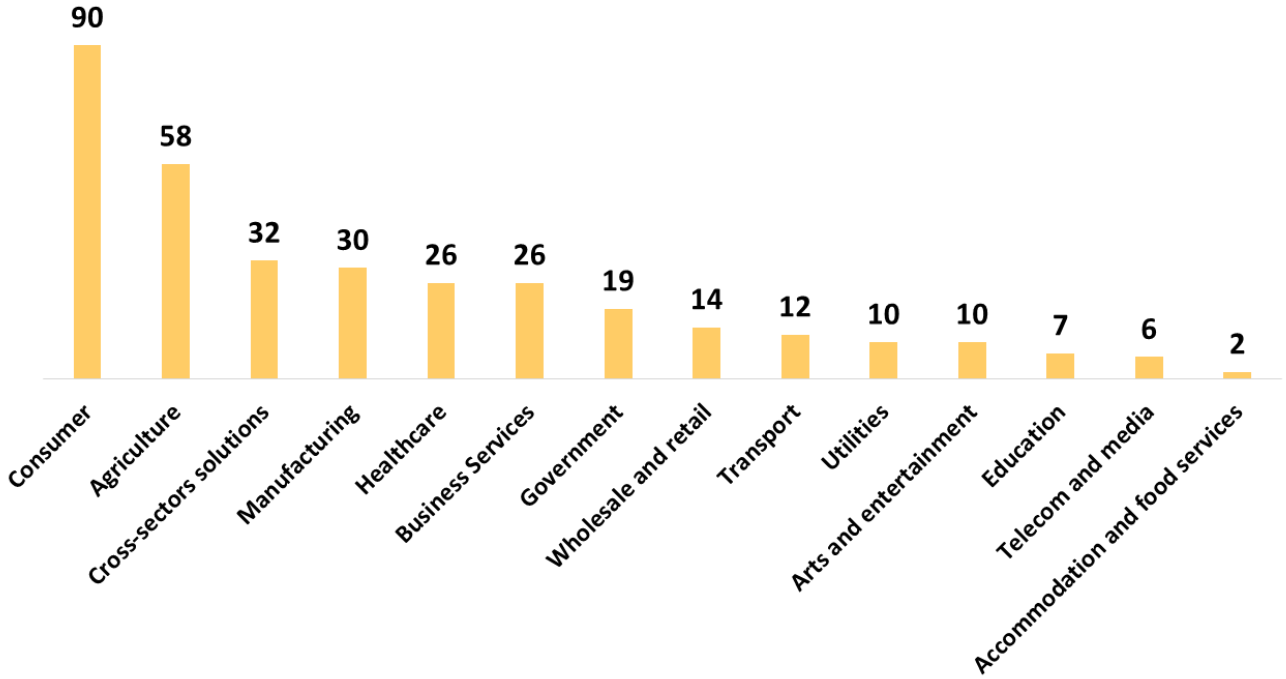
Multiple answers allowed (one initiative might use several Internet of Things (IoT) Services Enablement-related technologies and target multiple industries at the same time)



n = 210; number of initiatives using Advanced Web-based User Interface

Base = 15 accelerators, excluding FrontierCities

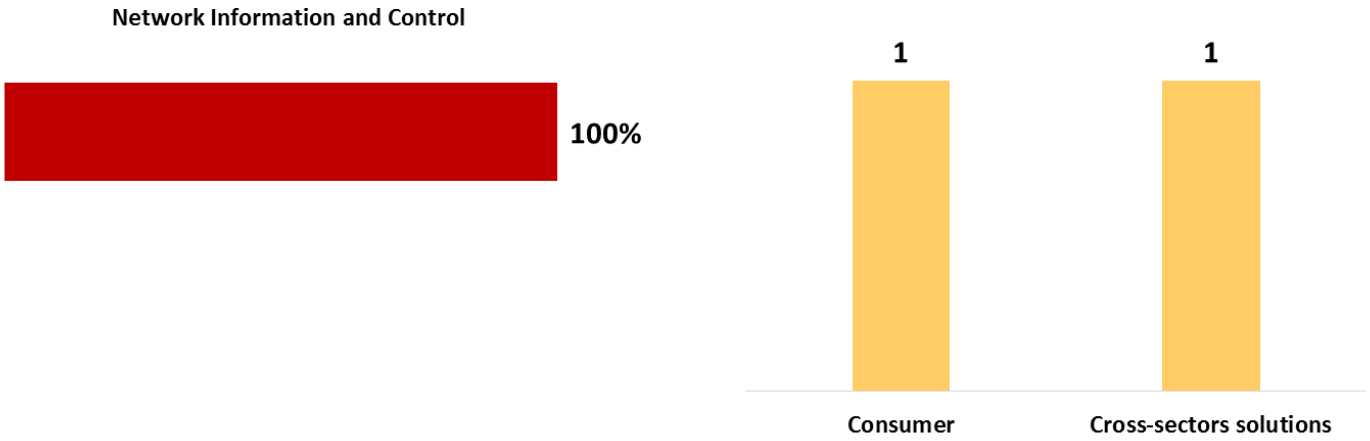
Multiple answers allowed (one initiative might use several Advanced Web-based User Interface-related technologies and target multiple industries at the same time)



n = 244; number of initiatives using Security

Base = 15 accelerators, excluding FrontierCities

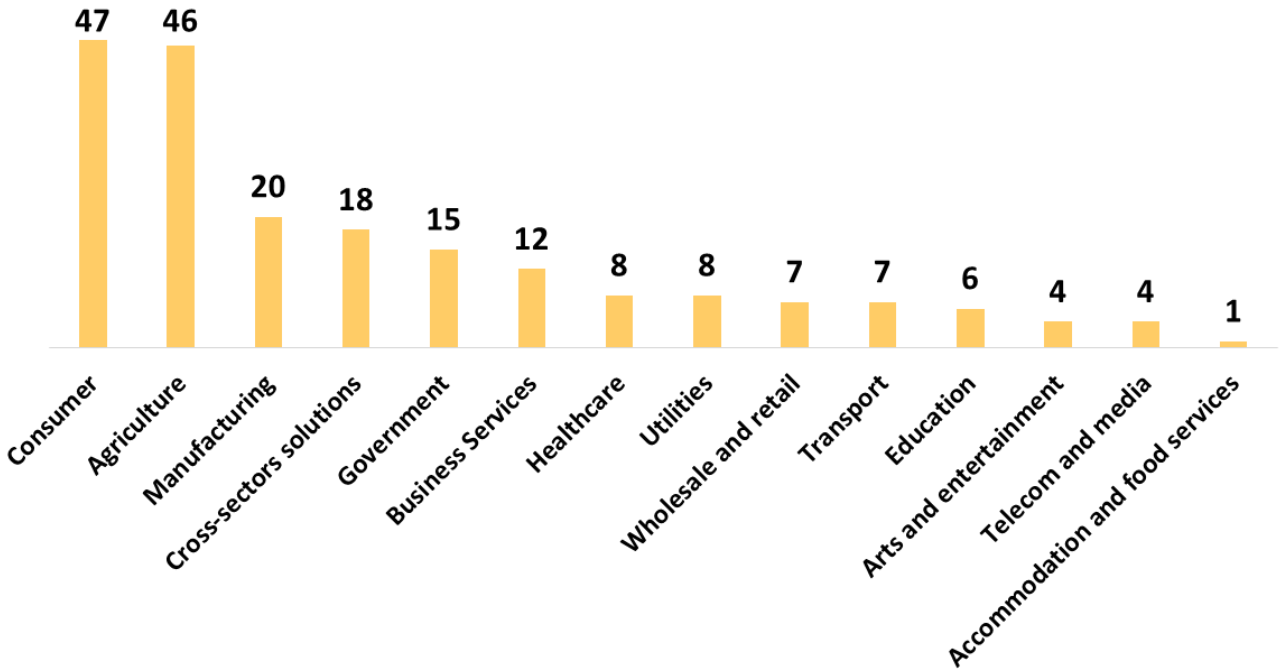
Multiple answers allowed (one initiative might use several Security-related technologies and target multiple industries at the same time)



n = 2; number of initiatives using Interface to Network and Devices (I2ND)

Base = 15 accelerators, excluding FrontierCities

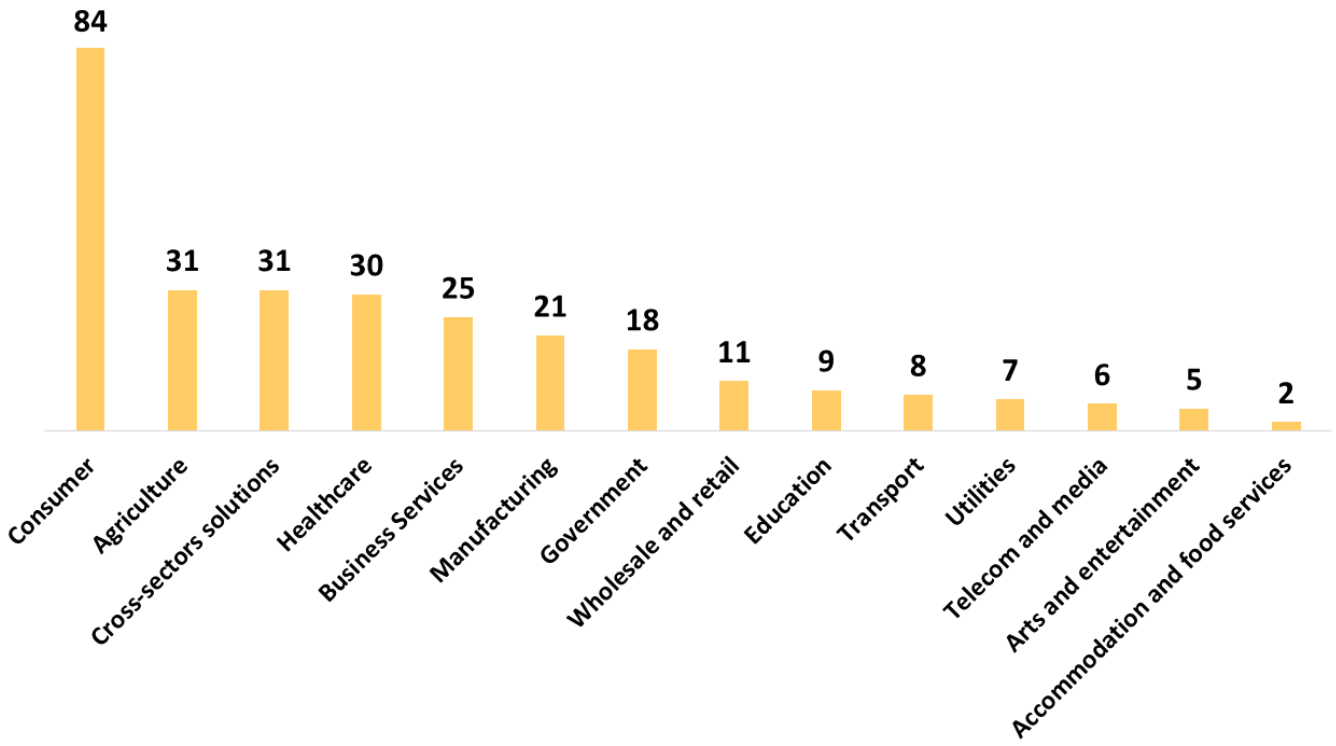
Multiple answers allowed (one initiative might use several Interface to Network and Devices (I2ND)-related technologies and target multiple industries at the same time)



n = 148; number of initiatives using Architecture of Applications/Services Ecosystem and Delivery Framework

Base = 15 accelerators, excluding FrontierCities

Multiple answers allowed (one initiative might use several Architecture of Applications/Services Ecosystem and Delivery Framework-related technologies and target multiple industries at the same time)



n = 206; number of initiatives using Cloud Hosting

Base = 15 accelerators, excluding FrontierCities

Multiple answers allowed (one initiative might use several Cloud Hosting-related technologies and target multiple industries at the same time)

Figure 60 Funded initiatives, by accelerators and target industry sector (15 accelerators)

7.3. IDC's Software Taxonomy

Collaborative Applications

Collaborative applications enable groups of people to work together by sharing information and processes.

Consumer Applications

Consumer applications are software products for recreation, education, and/or personal productivity enhancement.

The consumer software market includes home education/edutainment products sold to homes for specific educational purposes (for either adults or children) or reference (e.g., dictionaries and encyclopedias); games and entertainment (sports, adventure/role playing, arcade/action, strategy, and family entertainment applications); and home productivity that covers the software categories of home creativity, including all help, how-to, and lifestyle applications (e.g., cookbooks); personal productivity products, including resume writers, standalone calendars, expense records, will makers, and family-tree makers; and personal finance and tax preparation programs.

Content Applications

Content applications include content management software; authoring and publishing software; content analytics, discovery, and cognitive software; and enterprise portals

CRM Applications

CRM applications automate the customer-facing business processes within an organization irrespective of industry specificity (i.e., sales, marketing, customer service, and contact center). Collectively, these applications serve to manage the entire life cycle of a customer — including the process of brand building, conversion of a prospect to a customer, and the servicing of a customer — and help an organization build and maintain successful relationships. Interactions in support of this process can occur through multiple channels of communication. Channels of communication include but are not limited to email, phone, and social and on a Web site.

Data Access, Analysis, and Delivery Software

Data access, analysis, and delivery products are end user–oriented tools for ad hoc data access, analysis, and reporting as well as production reporting. Products in this category are most commonly used by information consumers or power users rather than by professional programmers. Examples include query, reporting, multidimensional analysis, and data mining and statistics tools.

Engineering Applications

Engineering applications automate all of the business processes and data management activities specific to ideas management, concept planning, and design and the handoff of a design to execution (manufacturing, construction, or other).

The markets include mechanical computer-aided design (MCAD), CAM, computer-aided engineering (CAE), collaborative product data management, and other engineering applications, which include those for electronic design automation (EDA) and architecture/engineering/construction or building infrastructure information management (BIIM).

ERM Applications

Enterprise resource management applications are designed to automate and optimize business processes related to resources required to meet business or organizational objectives but are not customer or prospect facing or specialized to various types of engineering. The resources automated include people, finances, capital, materials, suppliers, projects, contracts, orders, and facilities. The resulting applications forecast, track, route, analyze, and report on these resources. The market includes software that is specific to certain industries as well as software that can handle requirements for multiple industries.

Operations and Manufacturing Applications

Operations and manufacturing applications are enterprise applications that automate and optimize processes related to the planning and execution of services operations and manufacturing activities, as well as other back-office activities. The resources automated include people, capital, materials, and facilities. The applications track, route, analyze, and report on these resources. The market includes software that is specific to services, manufacturing, and other industries.

SCM Applications

Supply chain management application software automates supply- and demand-side business processes that bring a product or a service to market, including multisite organizations involved in a complex supply chain process, including raw materials suppliers, contract manufacturers, 3PL and 4PL providers, and individual transportation and warehousing organizations.

7.4. Impact Assessment Questionnaire

	Profile Section Questions
1.1	Which Accelerator is funding you?
1.2	In which country is your organisation headquartered?
1.3	What is the name of your organisation?
1.4	What is the name of your project?
1.5	What is the mailing address of your organisation?
1,6a	Are you an SME (<250 employees)?
1,6b	Are you a self-employed individual entrepreneur?
1,6c	Is your organisation owned by a Large organisation (over 60%)?
1.7	How many people are in the implementing team?
1.8	How many full time employees are in your organization?
1.9	What was the organisation's annual turnover in the last complete financial year?
1.10	Does your proposal sell/offer an IT solution or a service?
1.11	Is your solution based solely on software or does it include also a hardware component?
1.12	Which FIWARE enablers are being used (or planned to be used) in the project?
1.13	How much funding has been received from the accelerator?
1.14	What is the name of the coordinator of your proposal?
1.15	Please provide up to 300 word abstract of your project?
1.16	How many years has your organisations been operational?
1.18	specific enablers
1.19	The project being assessed is
1.20	Does this project use or plan to use FIWARE enablers?
1.21	Please provide up to 300 word abstract outlining the focus and benefits of your project
	Innovation KPI Questions
2.1	How near is your concept to being commercially exploitable?
2.2	Does your business idea provide an Incremental innovation or does it radically change existing products or services?
2.3	Does a similar solution already exist in the marketplace?
2.4	Is the original concept developed by a single person or is it a group effort?
2.5	Will your business idea create a new standalone offering or does it fit into an existing commercial strategy?
	Market Focus KPI Questions
3.1	Select the Business Model that best reflects your idea?
3.3	How will your expected revenues be divided among the business models chosen above?
3.3	If you are targeting any secondary market sectors, please select
3.3a	In which primary market sector(s) do you plan to sell your product or service?
3.3b	Why are you targeting or prioritising this market sector?
3.3c	Why are you targeting these additional markets?
3.4	Through which Channel do you expect to sell your product/service?
3.5	In the next three years where do you expect to sell your product/service?
3.6	When will (did) your Product/Service enter the open market?
3.7	What is the level of competition in your target market?
3.8	Have you verified your value proposition with the target customers?
3.9	What is the status of your commercial strategy to acquire customers?
3.10	If this is a new market what is the status of your market strategy?
3.11	If this is market with many competitors what is the status of your market strategy?

	Feasibility KPI Question
4.1	Have you estimated and provided for the capital investments required until revenues can sustain your business?
4.6	What is the % required capital you already have
4.2	Have you estimated how much your sales will grow on a yearly basis?
4.3	What is your average expected growth rate of your revenue for the next four years
4.4	Have you estimated the cost and time required to acquire a new customer in your target market?
4.5	Have you planned for expanding your sales force and marketing activities to match the expected growth rate?
	B2B Market Needs Question
5A.1	Which are the main expected business benefits your solution will provide in your target market(s)?
	B2C Market Needs Question
5A.2	Which are the main expected consumer benefits your solution will provide in your target market(s)?
	Potential Social Impacts Question
6B.1	Will your project contribute to the achievement of social benefits
6B.2	Will your project contribute to improve the quality of life of the following social groups?

7.5. Annex to Chapter 5 Identification of Potential Success Stories

7.5.1. FICORE Questionnaire for FIWARE usage assessment

FIWARE Lab usage (Cloud hosting services)

a. Are you using the FIWARE Lab cloud hosting capabilities (VMs, Object Storage, Blueprints)?
   i. if yes/planned, explain which resources and cloud services you need
   ii. if not, why?

b. Will you use the cloud GEs for setting up your own Cloud hosting service (public or private cloud)?
   i. if yes/planned, explain how

c. Will you define a blueprint of your app that will allow FIWARE Cloud users (e.g., FIWARE Lab users or commercial FIWARE cloud instance users in the future) to deploy instances of your app?
   i. if yes/planned, explain how

FIWARE Lab usage (Global GE instances)

d. Do you use global instances of GEs deployed on the FIWARE Lab (Cosmos, Open Data portal, Wirecloud portal, Keyrock IdM, AuthZForce PDP)?
   i. if yes/planned, explain which ones

e. Do you use the FIWARE Lab global instances of the authorization and access control framework (Keyrock IdM, AuthZForce PDP) combined with the Wilma PEP proxy or your own developed PEP proxies to control authorization and access to your application, APIs or data?
   i. if yes/planned, explain how

Context information

f. Does your application support a context-aware behavior based on the update, gathering, storage, publication, querying, or subscription on changes of context information (attributes describing relevant entities, events, information describing the status of real-world objects , etc.)?
   i. if yes/planned, explain which entities and attributes your app manages as context information

g. Does your application use the FIWARE NGSI API supported by the Orion Context Broker to manage context information?
   i. if yes/planned, explain which entities and attributes your app manages as context information using the NGSI API
   ii. if not, why?

h. Does your application support integration of context information sources from 3rd parties with the Orion Context Broker using some sort of NGSI adapter component (e.g., through a NGSI adapter library that perform updates on context information using the NGSI API or a NGSI server endpoint registered as context provider using the NGSI API)?
   i. if yes/planned, explain

Big Data

i. Does your application generates or gathers large amounts of data that you want to analyse later on?
   i. if yes/planned, explain which data, how much data and what kind of analysis)

j. Does your application perform Big Data analysis on historic data about context using the Cosmos Big Data platform??
   i. if yes/planned, explain
   ii. if not, why?

k. In order to perform big data analysis of historic Context Information,do you use the Cosmos shared cluster on FIWARE Lab or deploy the Cosmos GE in your infrastructure to deploy big data clusters on demand?
   i. if yes/planned, how?

Complex Event Processing (CEP)

l. Does your application require to detect complex situations and execute actions or take decisions upon events that take place?
   i. if yes/planned, explain

m. If your answer to the previous question was affirmative, do you use the Proton CEP?
   i. if yes/planned, how?
   ii. if not, why?

n. If your answer to the previous question was affirmative, do you use the Proton CEP to process events related to updates on context information integrating CEP with the Orion Context Broker?
   i. if yes/planned, how?
   ii. if not, why?

Stream Oriented media processing

o. Does your application need the processing of media contents (gathering, transcoding, analysing, producing/enhancing or publishing media)?
   i. if yes, explain

p. Does your application require videoconferencing features (P2P or MP)?
   i. if yes, explain

q. If your answer to any of the previous questions was affirmative, do you use the Kurento Stream-Oriented media processing GE?
   i. if yes/planned, how?
   ii. if not, why?

r. Do you integrate the Kurento Stream-oriented Media processing with Orion Context Broker in order to enrich context information or handle context information as input for media processing?
   i. if yes/planned, how?

Internet of Things

s. Does your application connect to sensors or other types of devices to gather measurements or actuate on them?
   i. if yes, explain (which devices and protocols, how many, what for?)

t. Do you use FIWARE IoT GEs for this purpose?
   i. if yes/planned, how? (which GEs, how?)
   ii. if not, why?

u. If your answer to the previous question was affirmative, do you integrate IoT Data with other sources of context information by means of connecting FIWARE IoT GEs to the Orion Context Broker?
   i. if yes, explain
   ii. if not, why?

Open Data

v. Does your application require to consume open data?
   i. if yes, explain (which formats, APIs, sources)

w. Does your application publish open data?
   i. if yes, explain (which formats, APIs, where)

x. If your answer to any of the two previous questions was affirmative, do you use the FIWARE Open Data Publication GE (extended CKAN) or a standard CKAN instance?
   i. if yes/planned, how?
   ii. if not, why?

y. if your answer to the previous question was affirmative, do you use the Open Data GE (extended CKAN) to publish datasets linked to NGSI resources as open data?
   i. if yes/planned, how?
   ii. if not, why?

Advanced Web UI

z. Does your application need to visualize 3D objects in web-based user interfaces or represent virtual worlds?
   i. if yes/planned, explain

aa. Does your application incorporate information about POIs (Points of Interest)?
   i. if yes/planned, how is info about POIs stored and visualized?

bb. If your answer to any of the two previous questions was affirmative, do you use any of the Advanced Web-based User Interface GEs in FIWARE?
   i. if yes/planned, how?
   ii. if not, why?

cc. If your answer to the previous question was affirmative, do you use any of the Advanced Web-based User Interface GEs in FIWARE to visualize context information available using the NGSI API (e.g., exported by the Orion Context Broker)?

i. if yes/planned, how?
ii. if not, why?

Wirecloud

dd. Does your application provide a modular user interface? Will you provide a (customizable) dashboard?

i. if yes/planned, explain

ee. If your answer to the previous question was affirmative, do you use the Application Mashup GE (Wirecloud) to create web dashboards?

i. if yes/planned, how? (which widgets are you reusing or plan to create)
ii. if not, why?

ff. if your answer to the previous question was affirmative, does any widget you mashup using Wirecloud access to context information?

i. if yes/planned, how? (which widgets are you reusing or plan to create)
ii. if not, why?

Data Analytics

gg. Does your application perform analysis of datasets and advanced charts or visualizations? Do you need a Business Intelligence tool?

i. if yes planned, explain (what kind of analysis, or visualization, which data?

hh. If your answer to the previous question was affirmative, do you use the FIWARE Data Visualization and Analysis GE (SpagoBI)?

i. if yes/planned, how?
ii. if no, why?

ii. if your answer to the previous question was affirmative, do you use the FIWARE Data Visualization and Analysis GE (SpagoBI) connected to other GEs (Orion, CKAN, Cosmos)?

i. if yes/planned, how? which other GEs (ckan, orion, cosmos,...) are integrated?
ii. if not, why?

Authorization and Access Control

jj. Do you need to implement some sort of authorization and access control mechanism in your application?

i. if yes/planned, explain

kk. If your answer to the previous question was affirmative, is it your authorization system based on using the Wilma PEP Proxy, and the KeyRock IDM GEs?

i. if yes/planned, how?
ii. if not, why?

ll. If you are implementing some sort of access control mechanism, is it your access control system based on using the access control GEs (AuthZforce PDP with Wilma PEP Proxy)?

i. if yes/planned, how?
ii. if not, why?

Business framework functions

mm. Does your application need to sell applications or data?

i. if yes/planned explain

nn. Does your application have or support a payment process that requires revenue sharing or payments settlement?

i. if yes/planned, explain (stakeholders, revenue sharing models)

oo. If your answer to any of the two previous questions is affirmative, do you use the Business Framework GEs (Store, Marketplace, RSS) for monetizing your application?

i. if yes/planned, how? (which GEs, how,)
ii. if not, why?

pp. If your answer to the previous question is affirmative, do you use the Business Framework GEs for monetizing data published by your application?

i. if yes/planned, how? (will you use the Business Framework linked to the Open Data publication GE (extended CKAN) for selling data?)
ii. if not, why?

Use cases

qq. Do you integrate Specific Enablers from one or more Use Case projects?

i. if yes/planned, how? (describe which SEs from which UCs and how they are used in your architecture).

7.5.2. FIWARE Press Office - Success Stories: Sub-grantees Appraisal Form

Accelerator to fill Sections 1 (Sub-Grantee Data) and Section 2 (Application Business Data).

Technical Expert (typically FIWARE coaches) to fill in Section 3 (Application Technical Data).

Section #1: SUB-GRANTEE DATA

Company Name:	
Commercial Name (if applicable):	
Address:	
Postal Code:	
Country:	
Phone:	
Contact Person(s) Name(s):	
Contact Person(s) Position(s):	
Contact Person(s) e-mail(s):	
Contact Person(s) Phone(s):	
Acceleration Project Name:	
Sub-grant initial date:	
Sub-grant ending date:	

Section #2: APPLICATION BUSINESS DATA

Application Name:	
Commercial Name (if applicable):	
Vertical Market(s) Addressed:	
Application Description:	
Main KPI of Success:	
Data supporting this appraisal: *(try to provide numerical evidences: number of customers / investment achieved, potential users, etc.)*	
Other KPIs of success *(if applicable)*	
Expected in-market date: *(if applicable)*	
Accelerator Project own assessment on FIWARE Technology Usage: *(try to provide a top-level description on how the sub-grantee is using the technology)*	

Links of interests: *(website, demo site, etc…)*	
Any other information or comments: *(state other aspects supporting your appraisal)*	
Business Success Rating (Rate from 1.0 to 5.0):	**x.x**

Section #3: APPLICATION TECHNICAL DATA

Number of Ges / Bundles used:	
Lists of Ges/Bundles:	
FIWARE Chapters Used:	
Technical main KPI of Success: *(i.e: Excellence in programming, combination of GEs, etc.)*	
Data supporting this appraisal: *(technical usage explanation)*	
Other KPIs of success (if applicable)	
Technical person(s) performing the appraisal: (Name / Company / Project)	
Technical Excellence Rating (Rate from 1.0 to 5.0):	**x.x**

7.5.3. FI-IMPACT Semi-structured Interview Questions for project profiles

Project Name Pre-completed from FI-IMPACT database

Target Sector Pre-completed from FI-IMPACT database

1. What is your solution and what market need does your solution address?
What was the vision behind this product development?
What market need is your solution addressing and how was this validated?
What is the focus and unique selling proposition of your solution?
What is the main challenge being addressed that is not already fulfilled by products in the market?
What is the value proposition for the end user/client?

2. What is the growth potential of your solution?
How have you determined the market potential for your specific application?
What is the initial target market being addressed and how do you plan to scale up in the future?

3. What makes your solution better than the existing competition?
Who are your main direct and indirect competitors?
What specific elements of your solution are better than what already exists in the market and why?

4. How was Fiware used to implement your solution and why did it give you a competitive advantage?
Please outline what FIWARE Enablers (generic and specific enablers) are leveraged in your solution and what functionality they provide?
Why did you consider using FIWARE in new product development?
What are the specific benefits of using FIWARE for your organisation?

5. What have you achieved in terms of technical development, market assessment, customer adoption and revenues?
Technical Development *- Please describe the functionality of the current prototype and plans for the short term (next six - twelve months).*
Market Assessment / Customer adoption
What market segments are you targeting?
How will you determine the appropriate pricing model?
What is your strategy for customer acquisition?
What distribution channels do you plan to use and why?
Revenues *- What revenues if any have been secured to date? What is the timing of future revenues?*

6. **If you solution is not already in the market, what is the expected time to market?**

What is the timeframe for market entry?
What main milestones have been or need to be achieved?

7. **What external investment do you need going forward and what have you secured to date?**

Have you secured investment to date?
What external investment do you need to bring your product to market?
What additional external investment do you need during the first year of operation?