D2.1 User Needs Report

WP2 – Cross-border and cross-sectoral collaboration

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List of Acronyms

AI	Artificial Intelligence
BC	Business Catalysts
EARSC	European Association of Remote Sensing Companies
EC	European Commission
EO	Earth Observation
LSD	Large Scale Demonstrators
ML	Machine Learning
R&D	Research and Development
SME	Small and medium-sized enterprise
TRL	Technical Readiness Level

Executive Summary

This report represents and comments upon the preliminary research of User Needs conducted for the purposes of the PARSEC Accelerator.

This report is based on the 36 surveys and 15 interviews conducted during July and August of 2019. The aim of the report is to summarize the output of the research and to do the analysis of gathered information.

The main objective of the research was to identify the needs of potential applicants and beneficiaries of the project – SMEs, start-ups, and entrepreneurs from targeted markets – Earth Observation (EO), Food, Energy, and Environment. To identify the User Needs, a survey was published and several interviews were carried out. The research was executed within a short period of time, therefore its results should be treated as an initial information regarding the researched topic. This approach allowed to estimate what kind of support services will be mostly useful for potential beneficiaries of the Accelerator.

Both survey's and interviews' structures were based on the PARSEC structure – the four pillars of support provided by the accelerator, notably providing access to finance, market, knowledge, and technology. Respondents could validate the offered services and add their own input, to maximize the project value for beneficiaries.

Overall, the survey revealed that the support services foreseen by the PARSEC consortium meet the requirements and needs of the potential beneficiaries. For instance, many respondents expressed the need to develop their access to the market, especially the aspects of business intelligence and the market knowledge. In addition, survey respondents want to focus on networking, with a strong willingness being expressed for building partnerships across borders and sectors. This is in line with what has been anticipated and thus foreseen to be included in the PARSEC Accelerator. Furthermore, other research results indicate an emphasis on guidance and mentoring by more experienced actors, including advice and business training, marketing and product development. Despite of strong need for financial support expressed in the survey, follow-up interviews showed that the main lacking resources for building up market capital were rather partners, knowledge, and new clients

The introduction of EO-based technologies and solutions was received positively as a great opportunity for development. Respondents were highly interested in learning more about the PARSEC Business Catalysts (Large Scale Demonstrators - LSDs) and, what is crucial, in cooperating with companies providing the EO services.

The research achieved its objectives and its results will be taken under consideration in the process of preparing the support services for beneficiaries of the PARSEC Accelerator.

1 Project Scope and Research Objectives

The PARSEC Accelerator aims to provide a holistic set of support services for SMEs and start-ups from four markets – Food, Energy, Environment, and Earth Observation (EO). The project's aim is to boost the innovation and business development in three emerging sectors by using EO-based products and services. On the level of planning the project and the services offered to the beneficiaries, PARSEC team identified four pillars which compose the support structure, and which correspond to crucial elements of business development. The four pillars are the following: access to finance, knowledge, market, and technology. All the pillars intertwine and are strongly connected; therefore, it is not appropriate to draw clear lines between them. Nevertheless, each one of them stands for the following:

1. Access to knowledge – the broadest pillar which includes technology (trainings devoted to EO, consultations with experts, access to data and tools, *etc.*) and business knowledge (marketing, writing a business plan, applying for funding, Intellectual Property Rights, *etc.*). This pillar aims to boost the beneficiaries' innovation by providing them with in-depth knowledge. The network of experts will be supporting the beneficiaries by providing them with tailor-made trainings on how to run a business and how to make a use of available EO technologies and data.

2. Access to technology – enabling PARSEC beneficiaries to exploit Big EO Data, to effectively utilise actionable in situ data, and to scale up the promotion of their solutions to many new customers through online platforms. These objectives will be achieved by providing beneficiaries access to three Business Catalysts (formerly named Large Scale Demonstrators - LSD) – Big Data Toolbox, In situ data hub, and eoMALL Galleries and eoPAGES.

3. Access to capital – access to financial resources guaranteed by the Accelerator (€10.000 of equity-free seed capital for each of the 100 first stage beneficiaries and additional €100.000 for each of the 15 consortia selected for the second stage of the accelerator), but also knowledge about available funding opportunities (*e.g.* venture capital) and what procedures need to be followed to receive them. PARSEC plans to not only grant the elected beneficiaries with European Commission funding, but also to create opportunities for the companies to meet investors and interested partners. Additionally, further opportunities for regional funding will be explored to facilitate beneficiaries finding the adequate one.

4. Access to market – includes promotion of the beneficiaries by taking part in PARSEC events, joining online platforms (eoMALL and eoPAGES), taking part in matchmaking events. Broadly understood, access to market includes networking with other companies (potential partners), getting introduced to investors, and obtaining trainings from experts (*e.g.* on how to increase one's visibility on the market).

As the Accelerator is open for SMEs from different sectors, with different Technical Readiness Level (TRL) of their products, it is difficult to estimate the needs of potential beneficiaries without any prior market research. Therefore, the main objective of this preliminary research is to identify the needs of SMEs from EO, Food, Energy, and Environment sectors. Gathered information will let the Accelerator respond with more suitable services targeted at its beneficiaries. To achieve that, the challenges faced by the entrepreneurs must be explored and identified. Hence, PARSEC team wants to delve into the process of development and commercialization of the products to determine what are the substantial obstacles entrepreneurs need help with. Often, being focused on one aspect of the business development overshadows other problems which might be crucial for further growth. Deeper research and analysis of respondents' opinions will guarantee more precise and accurate identification of actual obstacles. Well identified barriers will allow to understand the needs, and, as a result, to provide adequate support services. Therefore, this User Needs report was seeking for a validation of the services already planned by the consortium. The research was conducted for a short period of time and should be treated as an initial part of a bigger research which will continue throughout the duration of the project.

2 Methodology

2.1 Scope

In order to gather the necessary information, the target groups were defined. This research was intended to reach:

- SMEs according to the Commission Recommendation 2003/361/EC working in or connected to EO, Food, Energy, or Environment sector
- Entrepreneurs and start-ups from the targeted sectors

The goal was to reach out to the potential applicants and the population potentially interested in being part of the Accelerator. The preliminary research results will be used only as indicators for the PARSEC team to identify what are the needs of potential beneficiaries and what kind of support services would be the most adequate for them. Additional research throughout the project will allow for more general conclusions to be drawn regarding the overall needs of SMEs and entrepreneurs from the sectors.

2.2 Activities

Several activities were undertaken to conduct the research:

1. Identification of networks and channels reaching target groups
2. Carrying out the survey
3. Identification of potential interview respondents
4. Conducting interviews
5. Analysis of the survey results and interview responses, and their juxtaposition

2.2.1 Identification of networks and channels reaching target groups

To guarantee the biggest outreach possible during the summer period, PARSEC consortium has identified the communication channels through which the information about the research (*i.e.* survey) could be shared with targeted groups. Consortium members used the following ways to disseminate the survey:

- Social media
- Mailing lists
- Promotion at events

Nowadays an important outreach can be achieved by publications and visibility on social media. Hence, PARSEC established its profiles on Facebook, Twitter, and LinkedIn. The published content informed about the Accelerator and about the ongoing survey on all portals. Posts and tweets were reposted and republished by several consortium partners.

Three members of the PARSEC consortium are clusters. That enabled dissemination via network of members and associates of the organizations. Information about the project and its research was sent to other entities able to disseminate the survey or directly to the targeted group. For instance, European Association of Remote Sensing Companies (EARSC) used their database of SMEs who are part of organization's Small Companies Forum thus guaranteeing reaching only the potentially interested respondents.

Before launching the survey, the PARSEC consortium took part in several events (e.g. ESA Living Planet Symposium in May 2019 in Italy, Engage in June 2019 in Spain, ExpandEO in June 2019 in Belgium, EuroGEOSS in July 2019 in Portugal) at which the project and information about the forthcoming research was disseminated.

2.2.2 Carrying out the survey

The survey was created online using Google Forms. In the introduction part of the questionnaire the aim of the research and its target was explained to avoid receiving responses from inadequate respondents. The form was divided into seven sections. The sections were as follows:

1. Your business profile
   - providing information on respondent's legal status (a registered SME, a different legal entity or not a legal identity), country and sector of activity, and provided services (online/bespoke/other)
2. What do you need to develop further?
   - in this section respondents could indicate with which of the four PARSEC support pillars are the most useful at the current stage
3. Access to Finance
   - Letting respondents classify what kind of financial support would be the most appealing for them
4. Access to Knowledge
   - Identifying what kind of knowledge and which type of training potential beneficiaries would need the most
5. Access to Market
   - Defining the market they target.
6. Access to Technology
   - Gives the PARSEC consortium the possibility to verify which EO data sources are mostly used, which kind of data are needed, and knowledge on which of them should be broadened
7. PARSEC Application
   - Understanding respondents' objectives in terms of cross-sectoral and cross-border development and whether the respondent would like to take part in an interview further detailing the needs and challenges of each sector

The survey was published on 19 July 2019. For the sake of this report, the analysed data were gathered only until the 23 August 2019, though the survey will remain open to collect further information from the applicants, especially during the Open Call 1. The questionnaire will be updated during the course of the Open Call 1 to be targeting only the eligible respondents and to get more detailed insight into their needs regarding the prepared support services.

2.2.3 Identification of potential interview respondents

As a not mandatory part, survey respondents could share their contact details if they were interested in responding to in-depth interview questions. The survey was the main source of contact information for interview respondents. Additionally, other interview respondents were selected among the entrepreneurs who contacted PARSEC to get more information about the Accelerator.

2.2.4 Conducting interviews

The majority of interviews was scheduled and conducted in August 2019. Nevertheless, because of the summer vacation period, some of them are scheduled for September 2019. Therefore, not all of the respondents' input will be covered in this report. The interviews were conducted online, using GoToMeeting or Skype, or via phone call. The conversation was always composed of a several elements:

- Introduction of the respondent, broadening the profile indicated in the questionnaire, and presentation of a potential product, service or idea which would be developed in the accelerator.
- Exploration of the needs indicated in the questionnaire and the ones identified by the respondent. Further questions regarding products/services TRL, company's situation on the market, and the challenges it is facing gave the opportunity to identify or correctly name the needs one might not be aware of.
- Presentation of the project's scope and offered support services, including answers to all of respondent's questions.

The interviews were not recorder but notes in electronic and paper form were taken on the specially prepared template containing answers from the questionnaire, suggested questions to be covered, and basic information about the respondent coming from the online survey. Gathered information (from the survey and from sources online) allowed to prepare more personalized and tailor-made questions suitable for the respondent.

2.2.5 Analysis of the survey results and interview responses and their juxtaposition

In the analysis part of the research (section 3.3), all the gathered information – both from the survey and from the interviews – will be analysed. First, the summary of the survey responses will be made; starting with the characterization of the respondents – which countries, which entities and from which sector were reached. Further answers will be divided into each of the four PARSEC pillars. Second, the interviews will be summarized. The most crucial and evident challenges and needs identified in the interviews will be detailed? As a final point of the section, both sources of responses – survey and interviews – will be analysed and juxtaposed to receive a broad and detailed picture of the challenges and needs identified in the research.

3 Results and Analysis

3.1 Survey Responses

3.1.1 Sample specification

The survey was published on 19 July 2019, and for the sake of this report, data analysed were gathered until 23 August 2019. The survey will be still available online, and during the Open Call 1 will be updated to include more information and better reflect the applicants of the Open Call 1 of the accelerator. Until 23 August 2019, the questionnaire was filled out by 36 respondents.
As indicated in the ***Figure 1,*** the survey reached the right targeted group, as 61.1% of respondents were representing a registered SME (complying with the EC Recommendation 2003/361/EC5).

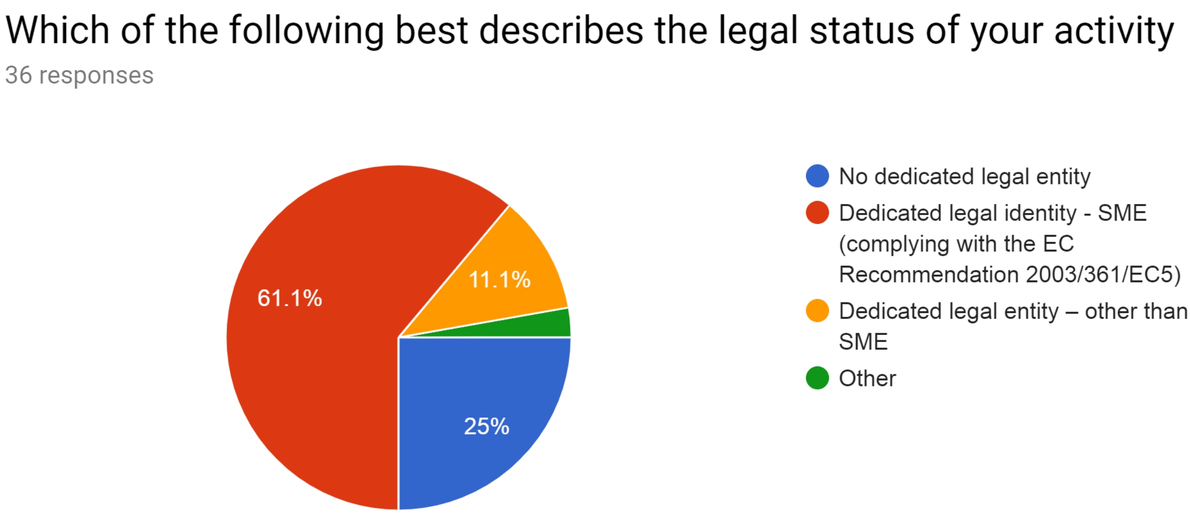


Figure 1 Sample characterization - legal status

The research reached not only European countries, but also two in Africa and one in Asia. In ***Figure 2*** the respondents' countries are indicated. The biggest number of respondents came from Greece (6), followed by Germany (4), Serbia (3), and Spain, United Kingdom, Netherland, and Portugal (2). From other countries, including the non-European ones, there was one respondent per country.

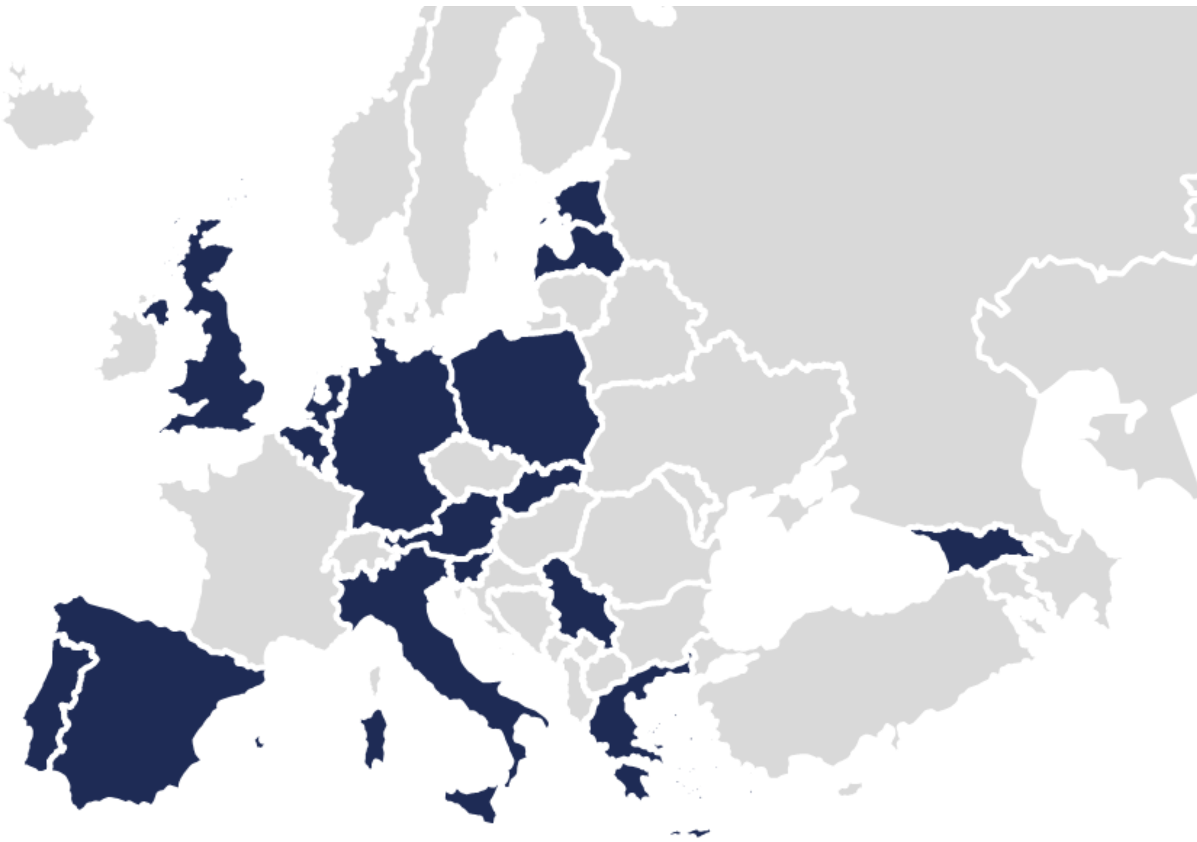


Figure 2 Survey outreach in Europe map

As presented in the ***Figure 3,*** the most represented sector was EO (39%), followed by Food sector (25%) and Environment (22%).

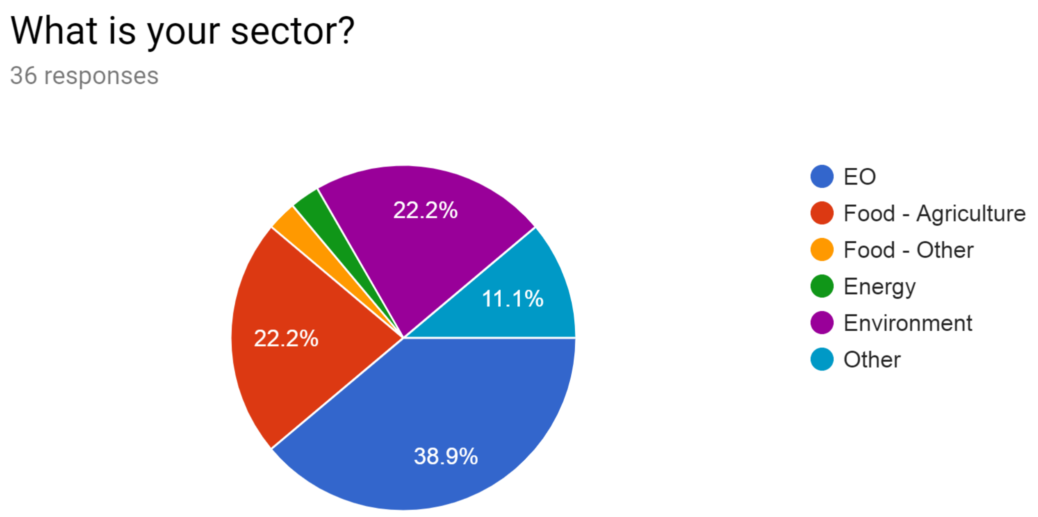


Figure 3 Sample characterization – sector

EO is traditionally a bespoke market but a trend to online services was identified in 2016[1] and is confirmed by recent indicators such as the EARSC Industry Survey 2018 (to be published in September 2019). Respondents indicated what kind of products they provide or plan to provide:

- Online (*i.e.* limited or no human intervention in the end-to-end workflow from subscription to delivery)
- Bespoke (*i.e.* full human intervention – traditional project approach to create products tailored to the needs specified by one customer)
- Both
- Not decided

The fourth option was foreseen for entrepreneurs who still have not established their business and are thinking about starting it.
The gathered data informs which of the platforms will be more suitable for the beneficiaries – eoMALL, dedicated to online services, or eoPAGES, only for bespoke products. According to the answers, both platforms will be valuable in promoting new services, as 50% of respondents intend to do provide online and bespoke services. However, eoMALL might attract more users as additional 30.6% would concentrate on online services, while additional 13.9% would ensure bespoke services.

[1] “Creating a European Marketplace for Earth Observation Services”, 2016, http://earsc.org/library/, EARSC.

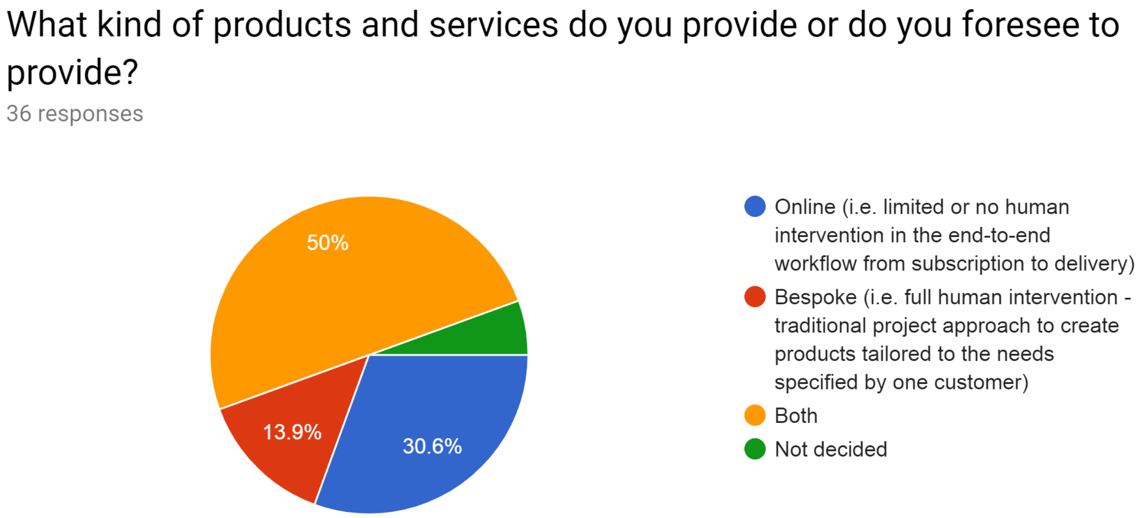


Figure 4 Sample characterization - provided products and services

3.1.2 Questionnaire and answers

“How much do you need to develop…”
In this section respondents were evaluating which of the PARSEC pillars would they like to develop the most in their business. The scale from 1 to 5 was provided, with 1 corresponding to “I do not need to develop that aspect of my business” and, accordingly, 5 – “I need to develop that aspect and it is crucial for my business.”
A majority expressed their interest in developing each of the aspect of their business. Nevertheless, the most crucial one was access to market – 86% of respondents rated the need to develop their access to market at 4 and 5 (with 50% of respondents choosing 5 - ***Figure5***).

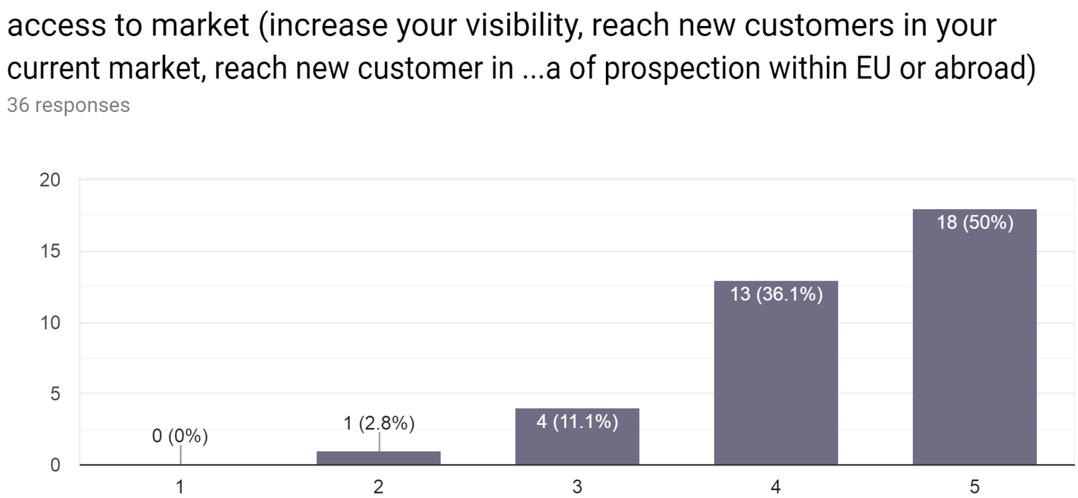


Figure 5 Access to market - need to develop

The second pillar identified as second most crucial was access to finance. 72% of respondents indicated high need to develop this aspect of their businesses (***Figure 6***).

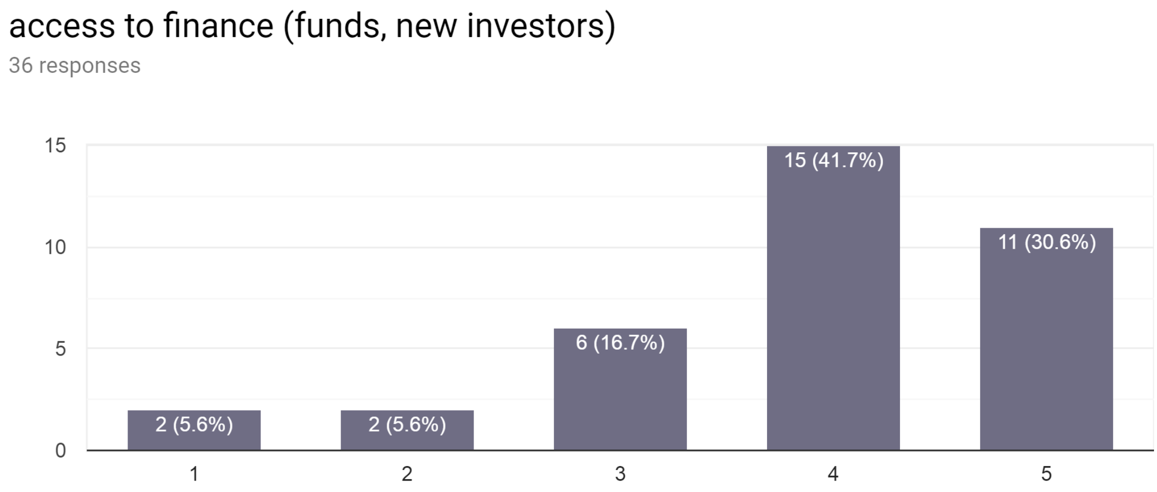


Figure 6 Access to Finance - need to develop

For the entrepreneurs who took the survey, access to knowledge seems to be less crucial than financial resources or visibility on the market, as 63% of respondents expressed their need to develop their access to knowledge, with only 30% indicating that this aspect is crucial for their business (5 on a scale). As explained in the previous section, access to knowledge covers several aspects of running a business, therefore, in further sections of the survey, more particular needs were identified.

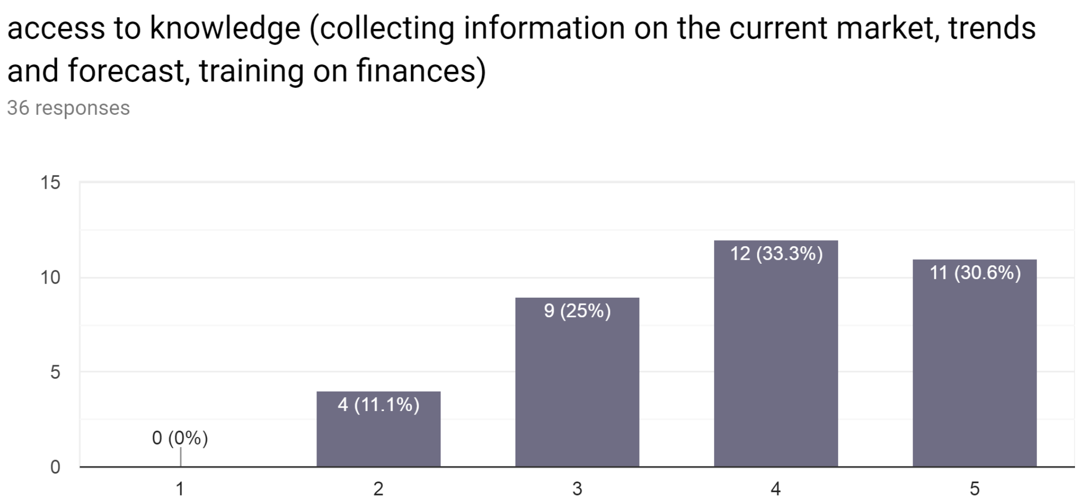


Figure 7 Access to knowledge - need to develop

Technology shows a little lower interest – 61% of respondents finding development of access to technology important. Nevertheless, both companies for the EO sector and non EO sector see interest in the technology. As it is foreseen in the PARSEC accelerator, companies from other sectors might be more interested in acquiring knowledge about available technologies and what might be the possible use and profit for them from implementing EO into their sector.

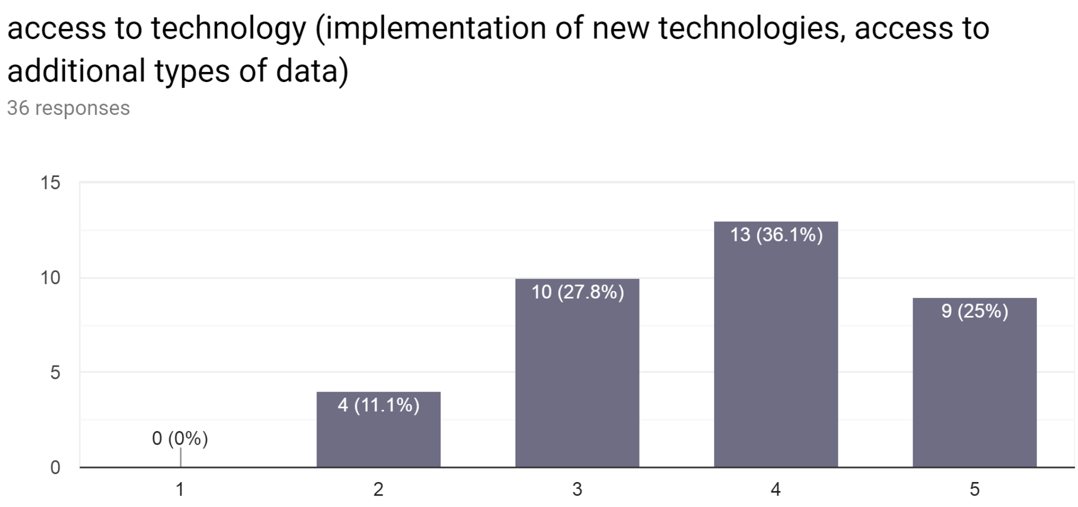


Figure 8 Access to technology - need to develop

"Access to finance"
In this section, respondents indicated which capital support they are the most interested in. Again, the 5-point scale was used (1 – least interested, 5 – most interested). Proposed options were as follows:

- Receiving a grant
- Presenting venture to capital
- Bank loan
- Other (giving respondent an option to indicate what kind of financial support would be interesting for them).

Two respondents were not interested in any kind of financial support. Majority – 21 respondents (57%) were mostly interested in receiving a grant (***Figure 9***). As a second most interesting option venture capital was chosen, leaving bank loan as rather unwanted solution of financial support. As other sources of financial resources respondents suggested crowdsourcing, partnering projects, and collaboration.

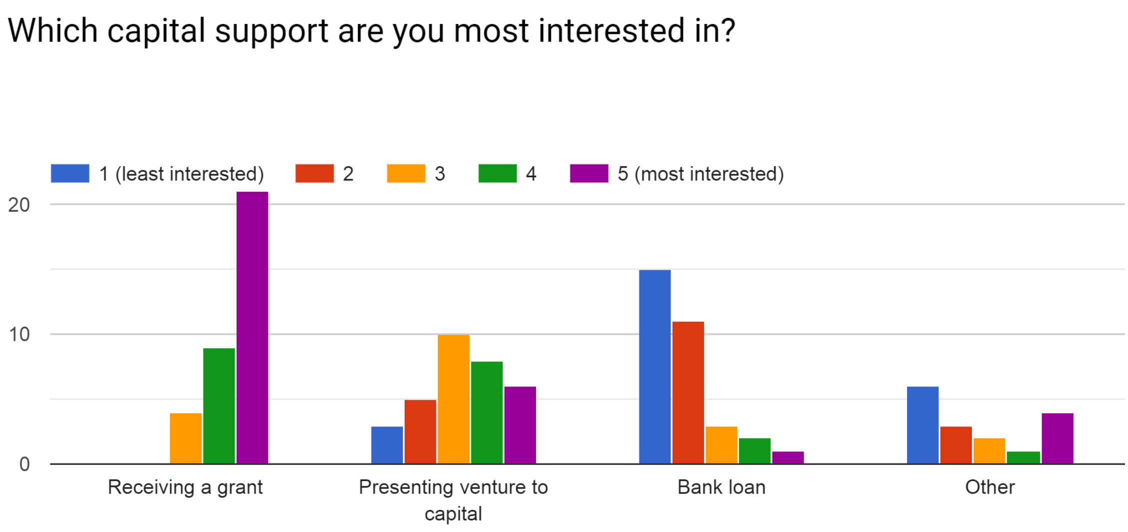
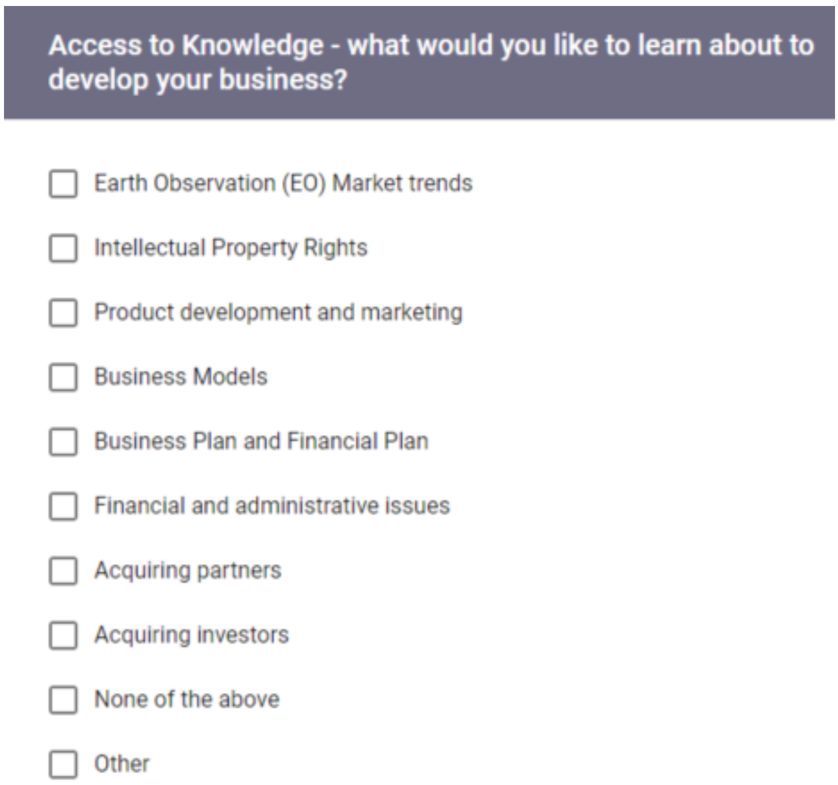


Figure 9 Access to finance - capital support

"Access to knowledge"
Support services offered by the PARSEC Accelerator were investigated in this section. Experts cooperating with PARSEC will be providing trainings, webinars, coaching services, but also special platforms will be created to gather information on technology trends and investments. Answers of potential beneficiaries constituted an initial feedback regarding the adequacy of the planned services. In the first question, visible in ***Figure 10***, respondents could indicate which topics, or which aspects they would like to work on, learn more about, and consequently, improve in their business.


Access to Knowledge - what would you like to learn about to develop your business?

- ☐ Earth Observation (EO) Market trends
- ☐ Intellectual Property Rights
- ☐ Product development and marketing
- ☐ Business Models
- ☐ Business Plan and Financial Plan
- ☐ Financial and administrative issues
- ☐ Acquiring partners
- ☐ Acquiring investors
- ☐ None of the above
- ☐ Other

Figure 10 Access to Knowledge – question

The vast majority of respondents were interested in gaining EO market trend knowledge, which was further confirmed in the interviews. The knowledge on market trends and available technology is a key element the beneficiaries might be needing. The second most popular topic was product development and marketing, followed by acquiring investors and partnership development (acquiring partners).

Business-related topics (Business Plan, Financial Plan, Business Models, Intellectual Property Rights and Financial and administrative issues) got the least votes. This corresponds to what was expected from the companies of the EO market. The PARSEC Accelerator will have to demonstrate the importance of these key aspects for development and sustainable growth of new businesses. All the results visible in ***Figure 11***.

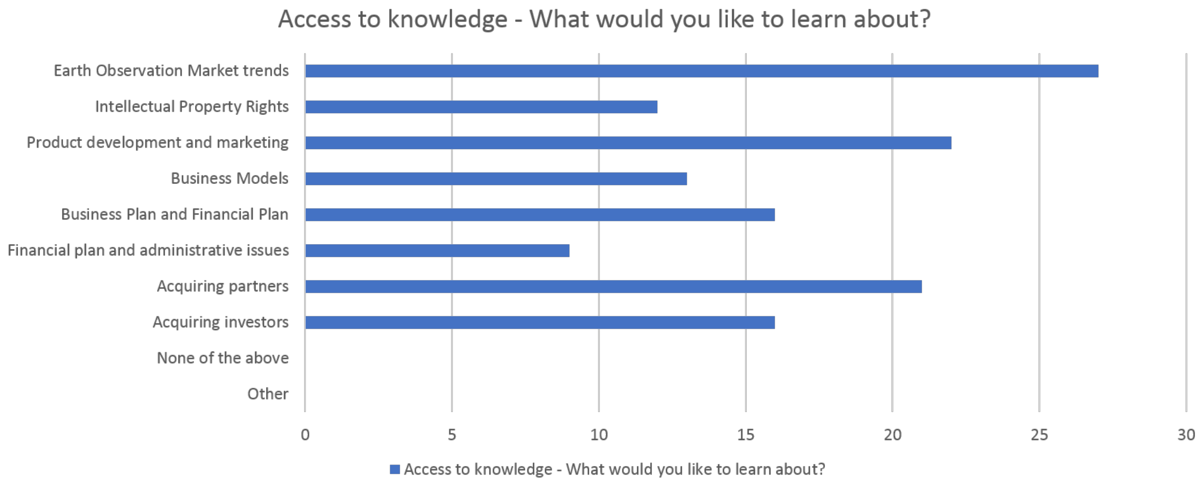


Figure 11 Access to knowledge - support services choice

The topics and the form of the sessions will be adjusted to the needs of the beneficiaries. Hence, the survey included the following question concerning interest of potential beneficiaries in coaching services provided by the Accelerator. The vast majority (72%) claimed to be interested, while some (8%) of the respondents might be interested (***Figure 12***).

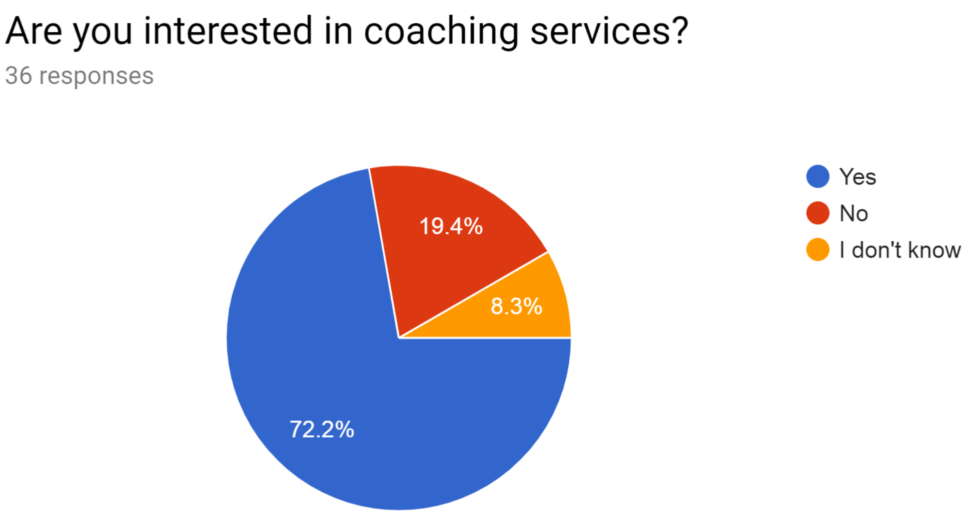


Figure 12 Access to knowledge - coaching services

Identified topics of coaching services were the following:

- Business development and market development (9) including management, relations with clients and business leadership
- Business Plan and Financial Plan (3)
- Acquiring partners (2)
- Product development and marketing (2)
- Intellectual Property Rights (1)
- Acquiring investors (1)
- EO topics (1)
- Sales (1)

In many of the responses focus on the particular sector was emphasized (*e.g.* how to write a business plan for the EO services, *etc.*).

Because of the broad geographical cover of the project, some of the trainings will be hosted online. This form of trainings was validated by 80% of the potential beneficiaries. Only about 3% would not like to participate in this form of training (***Figure 13***).

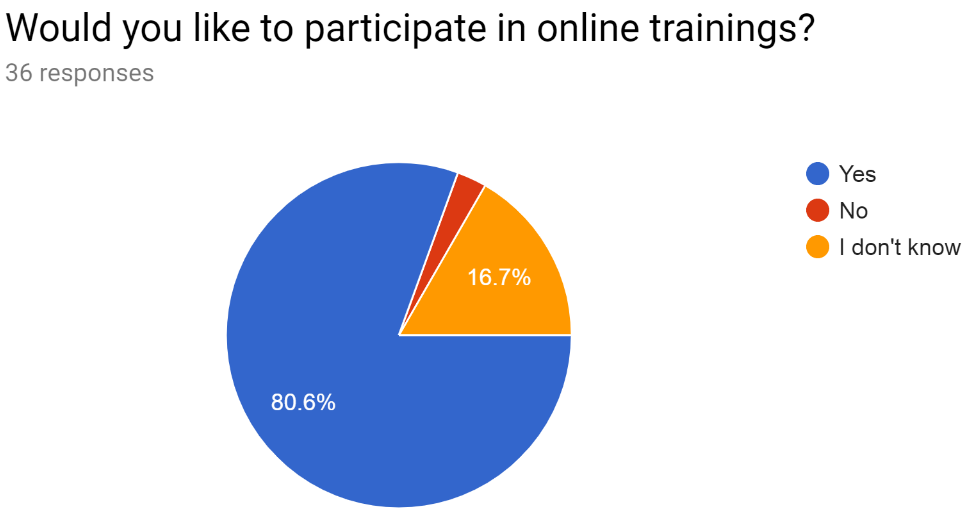


Figure 13 Access to knowledge - online trainings

"Access to market"

As indicated in the previous sections, respondents were mostly interested in trainings and support connected to the third pillar of the PARSEC support – access to market. In this section potential beneficiaries could specify what elements of access to market would they like to work on. Four main elements were identified as the ones Accelerator could help with, the chart below (***Figure 14***) presenting the results. All the elements were found relevant, as all were chosen by at least 63% of the respondents.

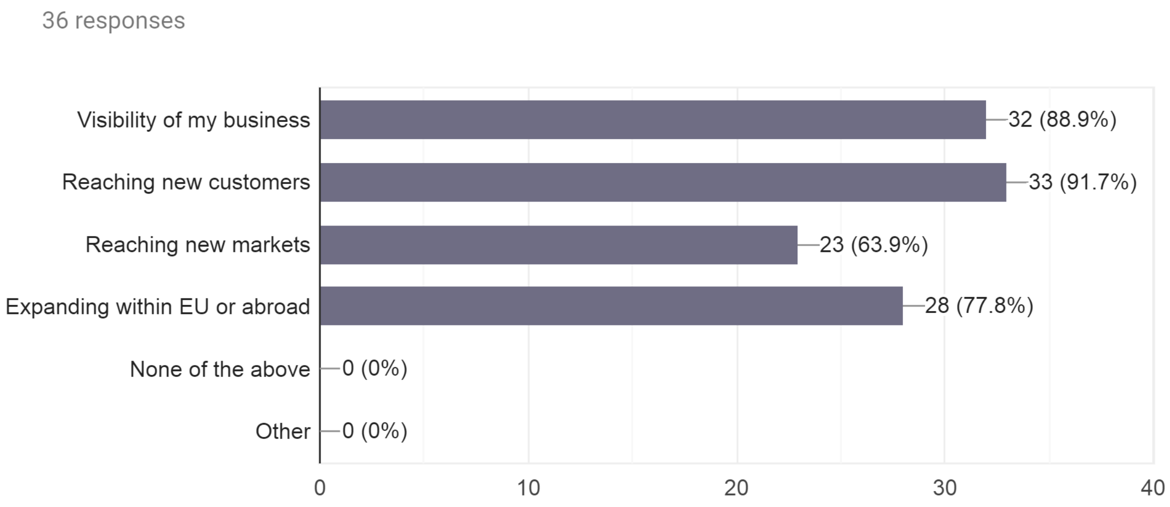


Figure 14 Access to market - elements

"Access to technology"

Accelerator aims to increase the use of EO-solutions in the emerging sectors, therefore, the access to technology and to knowledge related to the technology is foreseen as a leverage. In this section of survey, initial research of what sources of data and what kind of data are already used by the potential beneficiaries and what they were interested in.

69% of the respondents are already using the data provided by the Copernicus programme and 27% use other sources of data which is understandable as 61% of entities come from EO. The survey highlights that more than a third of respondents or potential future beneficiaries may increase their use of EO as they are interested in learning more about the EO data (summary of answers in ***Figure 15***).

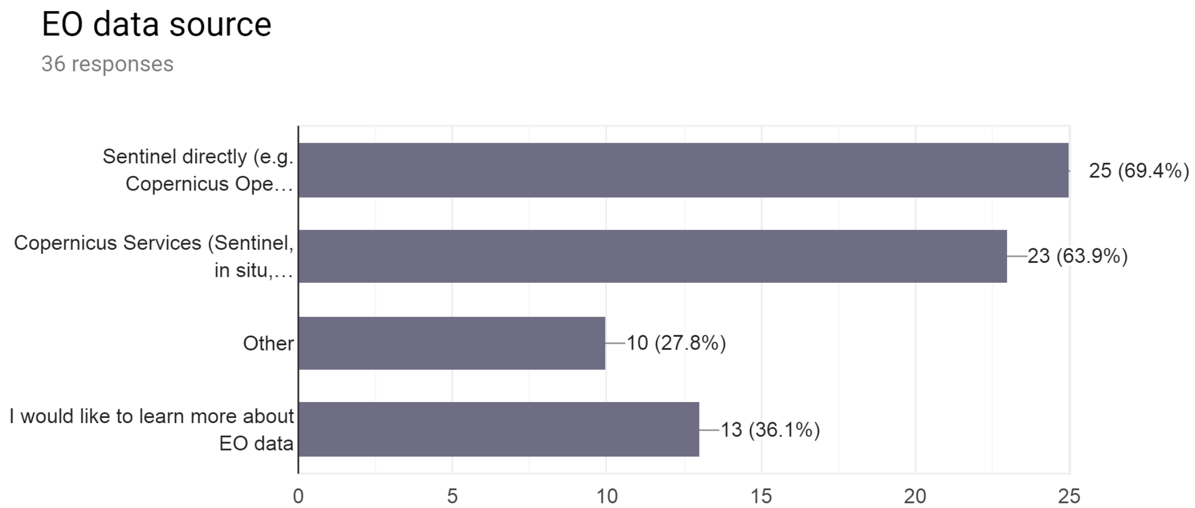


Figure 15 Access to technology - EO data sources

As other EO data sources mostly commercial providers were identified.

One of the previously mentioned Business Catalysts, provided by the Accelerator, will be the In-situ data hub. To identify what kind of data is used and/ or needed by the potential beneficiaries, respondents could indicate specific categories. Vast majority (80%) chose the ground-based data, the next one was geo-spatial (66%) and air-borne (36%), followed by sea-borne (13%).

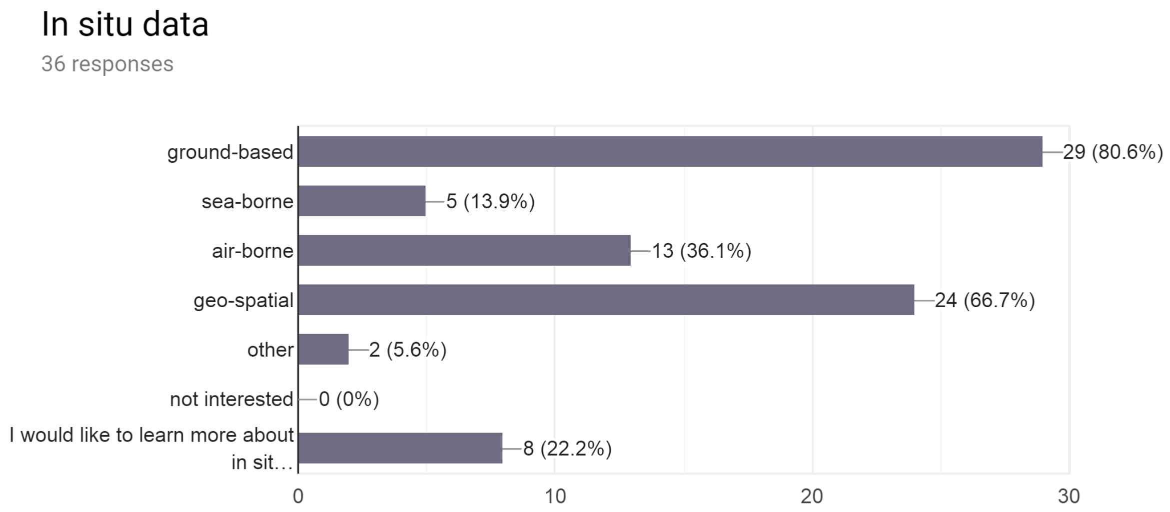


Figure 16 Access to technology - in situ data

The second Business Catalyst is the Big Data Toolbox which will be using the technology provided by one of the PARSEC consortium member (RASDAMAN) – the data cubes. By creating the Big Data Toolbox, the Accelerator aims to promote the new approach of this technology to leverage access to data. As the research showed, less than a third of the respondents are already using this technology, and 66.7% would like to learn more about it.

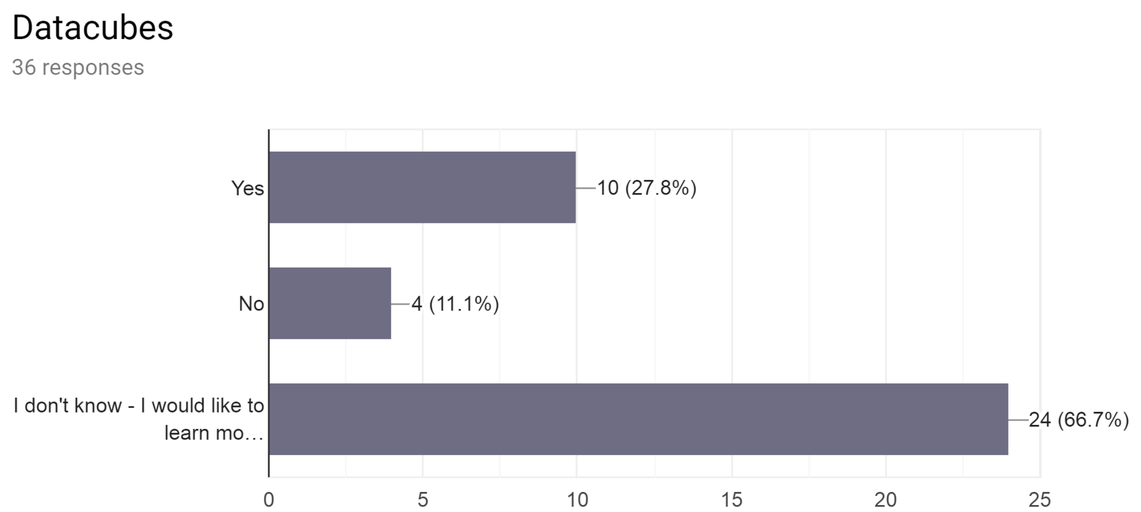


Figure 17 Access to technology – data cubes

Other new technologies that could be promoted by the Accelerator include Cloud technologies, Machine Learning (ML) or Artificial Intelligence (AI). They are highly common among the respondents with quite similar level of interest – between 65% and 77% (***Figure 18***).

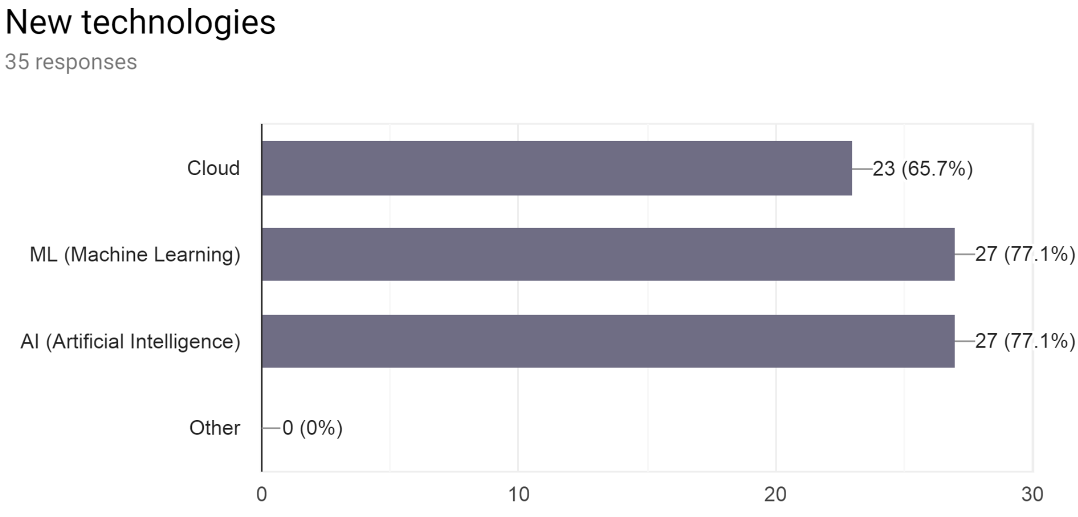


Figure 18 Access to technology - new technologies

"PARSEC Application"
To verify if the potential beneficiaries will fit the PARSEC objective to create cross-border and cross-sectoral collaboration, respondents were asked if they have cross-border and/or cross-sectoral objectives. Indeed, 75% do have a cross-border objective and 71% do have a cross-sectoral one, which perfectly fits Accelerator's vision. The charts below in ***Figure 19*** and ***Figure 20*** depict the answers.

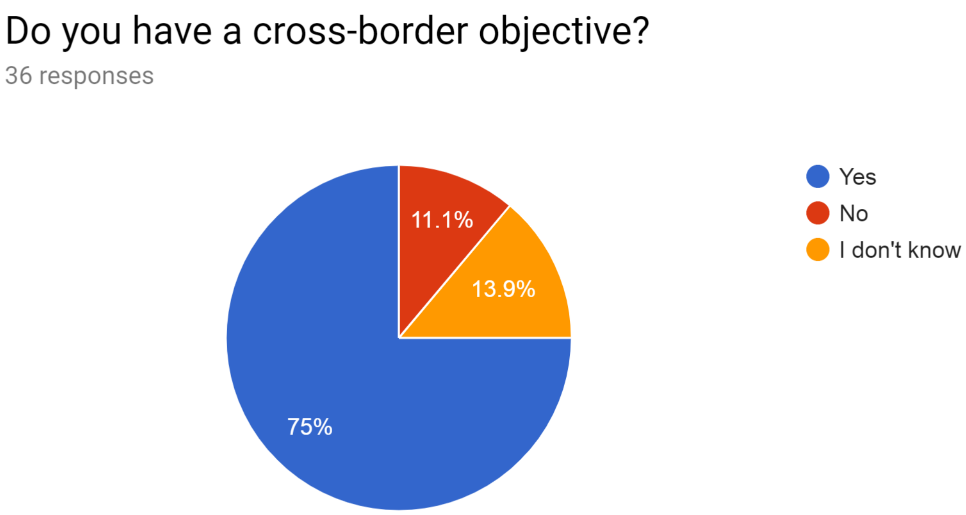


Figure 19 PARSEC Application - cross-border objective

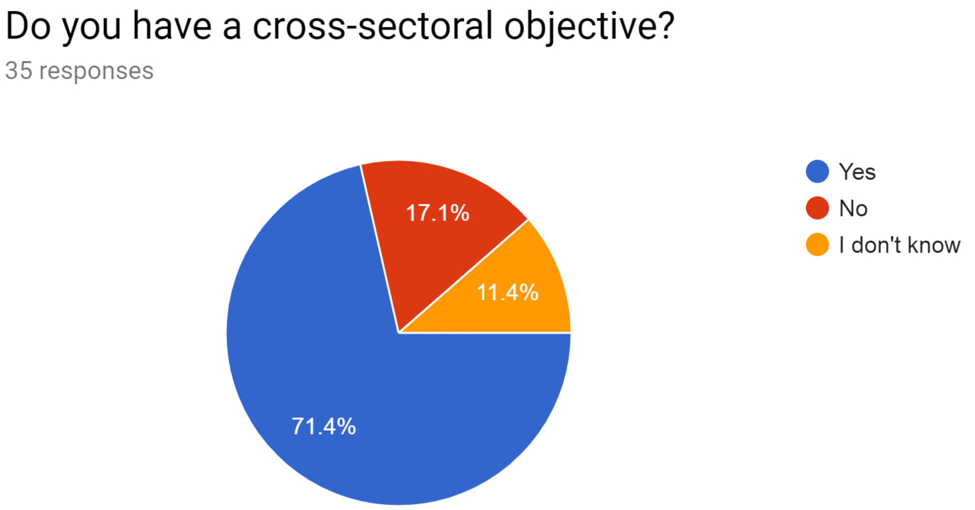


Figure 20 PARSEC Application - cross-sectoral objective

3.2 Interview Responses

3.2.1 Sample Specification

23 out 36 respondents to the survey gave their consent to be contacted and to respond to an interview regarding their needs. 15 of the interviews were scheduled before the closure of this report, and several interviews are scheduled for early autumn. As mentioned before, the survey will be still running, therefore, the number of interviewed potential beneficiaries will be increasing. The interview respondents represented 10 countries, 9 from the European Union. The majority of respondents were already registered as SMEs (11), 3 respondents did not represent any legal entity, and one of the respondents was representing a cluster. Similarly to the survey, the EO sector (8) had the most important representation, followed by Food-Agriculture (4), Environment (2), and Food-other (1).

3.2.2 Interviews

The aim of the interviews was to broaden the picture of the needs of SMEs and start-ups from the targeted markets. Interlocutors had a possibility to explain what exactly they would like to improve and what are the obstacles they encounter in their way to successful product commercialisation and business development.

Access to finance

Financial support, defined as the second pillar in the survey, did not seem very crucial during the interviews. Funds will be needed and appreciated by all respondents. Nevertheless, the lack of financial resources is not the main obstacle they are facing or they identify. Financial support was stated as crucial for further development of the company only in three interviews. Any received resources would be allocated to the creation of a special team dedicated to the business development of the enterprise. Two of the SMEs would like to hire specialists taking care of finding new partnership opportunities, creating business plan and to lead the overall marketing of the company. Other respondents mentioned devoting the additional funds to creating a prototype or web-version of their (mobile phone?) application. Only two respondents were highly interested and found it helpful to get the knowledge on how to apply for funding.

Access to knowledge

Respondents expressed their need to receive support from business professionals – helping with management of the company, product development, and the advertisement of the offered services. "Team is more technical. I am the only one with marketing and business background. We need suggestions – how to market EO solutions, we need help with that" – admitted one of the respondents. Including some of the CEOs of the companies, 13 out of 15 respondents have technical background. One of the respondents stated that they are developing the products and services even though they do not possess expert knowledge on how to run a company, except for the one gained from their particular experience. Overall, five SMEs from all sectors identified the solely technical skillset of the team as their main problem or obstacle in further development. This explains why the support services emphasized in the survey were related to increasing business intelligence. Three other respondents expressed their willingness to get some business advice, especially regarding different business models and choosing a suitable one for the product and the market. Interviews confirmed the interest in coaching services also visible in the survey responses. Emphasized topics were business models, marketing, sustainable growth of business and overall coaching in business development. Even experienced respondents, being in the market for twenty or more years, expressed the need to learn more about business, management, and marketing. Three of the respondents were mostly interested in being mentored by a bigger company to learn from them.

As another consequence of having a small and mostly technical team, many entrepreneurs struggle with legal aspects of their businesses, for instance, expressing their doubts concerning the IPR.

Access to market

Networking and investing time and resources into partnership building was mentioned by all respondents as the biggest issue for all sectors. Respondents described two types of connections they are lacking – cross-sectoral and cross-border. One third of the respondents found leaving the national market and reaching out to foreign partners and clients very difficult. Four respondents struggle more with cross-sectoral barriers. According to their expertise, products and services they offer might be useful for several sectors, but they do not know how to reach companies and clients from other sectors. Accessing other markets is especially problematic for companies offering software or tools which could be used only as a part of a bigger product. Consequently, because of lack of cooperation with other sectors, ideas of introducing the product to a new market cannot be carried out. In addition, input from partners from other sectors could improve the functioning of the offered products.

Respondents' opinions on troubles with acquiring new customers were remarkably diverse. For some of the respondents, especially the one representing a cluster, reaching out to network of potential customers is not problematic. However, one third of the respondents from all sectors diagnoses it as one of the most crucial problems. Especially in the Food sector, two respondents were able to find customers on the American and Asian markets, but not on the European one. According to one of the respondents from the agriculture sector, this could be explained by fewer resources being allocated to Research and Development (R&D and by lack of willingness of European farmers to invest in technologies. This latter argument was also mentioned by other respondents.

In addition, Greek respondents emphasised that apart from economic obstacles, services proposed in agriculture take time to be verified, therefore the support of municipalities of the food sector could play a crucial role. They indicated that in agriculture, a client needs to invest a lot and wait years to see the results. As the products cannot be tested in a short period of time, or the tests demand special conditions, offered products are mostly beta versions or prototypes. Because of the difficulties with encouraging clients to purchase test version of the products, municipalities of Greece turn out to be supportive for the Food sector.

The business development of some SMEs seems to also be impeded by certain features resulting from their structure and size. First of all, SMEs' teams are small. "We have limited human resources" – admitted CEO of one of the SMEs, explaining why they have a need of creating a team dedicated to

business development. Secondly, work capacity of such an entity is smaller than of a big company. Because of that, several of respondents complained about their inability to take part in bigger projects.
In terms of products, one third of the respondents would like to receive support with product development. The initial part of this process would be the identification of the market demand. One of the respondents said: “We need to understand clients and users. That is crucial before establishing a company.” The second identified step would be the pricing. Four interlocutors mentioned pricing as one of the problems. “We don’t know how to evaluate our products, how to price them, we need help from experienced experts,” said a respondent from the EO sector. Other would like to get access to statistics on how much on average companies invest in EO technologies. The further step of the commercialization – marketing – was indicated by several respondents as troublesome.

Access to technology

All the respondents from Food and Environment sectors found it interesting to get more familiar with EO and the possibilities EO data give. Very high interest was expressed towards technology of data cubes. As indicated in the survey, only 27.8% of respondents are familiar with the solution, for some of the respondents the technology was completely new. Yet, after receiving a short description of its mechanism and the opportunities it gives, all respondents working with EO data were highly interested in the technology. Vast majority of the enterprises represented in the interviews were already using ML and AI, but further training would be helpful as some of the companies are self-learners of the technologies.
“We would be happy to get more access to legacy of the older companies. Current industry – what is going on, what technologies are being used, *etc.* that would be interesting.” expressed a software creator. Several respondents accentuated the willingness to cooperate with more experienced companies and to get to know already existing technologies and solutions which might be helpful for the newly developing products.
Access to high-resolution data was mentioned as a need by a great part of the sample, but the pricing of it is a barrier for many of the respondents who need to use them.

3.3 Analysis and juxtaposition of the survey results and interview responses

Overall, the output from both tools used in the research indicates that the access to the market seems to be the most crucial and troublesome for potential beneficiaries of the PARSEC Accelerator. From companies’ perspective, the training, mentoring and coaching is needed as a guidance towards the next steps in developing and commercializing the products and services. On the other hand, from the description of actual obstacles and problems companies are facing, it seems that the problem might be lying in the definition of customers or in how the product/service fits its purpose. A few of respondents rightly pointed out that the knowledge of the market is crucial. That includes insight into the needs of their users, familiarity with competition and solutions already available on the market, and especially their prices and buyers’ economic potential.

In the interviews, the financial support turns out to be less crucial to business’s development than it is reflected in the outcome of the survey. This discrepancy might result from the fact that a well allocated financial support will be always boosting companies’ capacity and productivity, but companies might not possess the necessary know-how for allocating the funds correctly. Additional funds without that knowledge will not bring the company long-lasting benefits.

Access to market was emphasized in both parts of the research. But when divided into smaller elements and analysed, it might be concluded that the barriers do not come from the market itself. The gap between the different services provided and the demand for these services might come from the lack of market research and knowledge. Another factor might be the lack of proper marketing and management knowledge – SMEs identified their need to develop the know-how on running a business.

However, for the majority of the respondents the main impediment for their development is very likely not yet identified. Some of the respondents had a clear vision and understanding of what element in particular they need to develop. In contrast, other entrepreneurs seemed to lack an overall support as they were not aware of a concrete problem or barrier their business was facing. SMEs expressed the need to create partnerships and to cooperate with other companies in different sectors as this may be the right way to boost their business in the long run. Apart from the clear need for trainings in business and management, respondents expressed a high willingness to learn about available technologies and opportunities they provide.

Companies found it interesting to discover the new technologies. Respondents appreciated the potential of the solutions available on the market and would be keen on learning more about them. That opens up a great opportunity for the technologies' providers to establish a collaboration with users from different sectors.

4 Conclusions

This research work is based on a small number of companies and will be detailed in the next few weeks and months. Consequently, even if conclusions cannot be generalised at this stage, they inform of the key needs from the EO companies and non EO companies which may both become PARSEC beneficiaries.

The Accelerator and its survey managed to attract an appropriate sample – SMEs and entrepreneurs from targeted sectors. According to the results of both parts of the research, PARSEC scope and foreseen support services meet the users' needs. The most appealing pillar to the potential beneficiaries is access to market. Respondents mostly expect support with business side of their companies' development. Nevertheless, after analysis of the interview responses, it might be concluded that the problems and barriers might be resulting from the lack of business intelligence, which includes knowledge of the market. Entrepreneurs are not acquainted with their competition and potential partners. What is more, the demand side of the market is not known for them either which may create difficulties to design a product/service or to facilitate its integration by the customer. Furthermore, the companies could benefit from training on how to acquire business intelligence. The research results emphasise the market knowledge, therefore informing the PARSEC Accelerator that certain of the foreseen tools could gain a higher priority. For instance, the Technology Watch and the Future Trends Plan providing information on the technologies available and used on different markets might be highly estimated by the beneficiaries as a crucial tool in developing their knowledge of the market.

As EO teams are very technical, the lack of technological knowledge or no access to particular technologies are not perceived as a major obstacle among these respondents. However, potential applicants are highly interested in broadening their knowledge about available new technologies and technological solutions.

To sum up, the difficulties entrepreneurs are facing might be a consequence of not enough business intelligence and knowledge of the market. The PARSEC Accelerator has incorporated corresponding pillars and thus seems to be addressing these needs in the support services foreseen. The survey validate that all the tools and support planned by the PARSEC consortium is seen by the SMEs and start-ups from Food, Energy, and Environment sectors as relevant to successfully commercialize new products and to boost the innovation.

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