

A Survey into the State & Health of the European EO Services Industry



Prepared by EARSC with the support of ESA

2019

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We are very happy to present the results of the 2018-2019 EARSC industry survey into the state and health of the Earth Observation (EO) sector in Europe. This is the fourth biennial survey conducted by the European Association of Remote Sensing Companies (EARSC) and we are very grateful to all the companies that took the time to answer our questions.

The Earth Observation sector continues to grow at a good rate of 10% per annum. In our survey this time we find there are 515 European companies active in the sector which are employing some 8,400 employees and generating €1.25b of revenues. Each of these figures shows a growth since the last survey 2 years ago of over 20% noting that this time around we have excluded Canada and have updated our methodology (for details see the section at the end of the report).

The sector is very dynamic, as is reflected in the strategic overview, and is more fully analysed for the first time in the "Industrial Landscape" section. Our new methodology provides us with a much more informed view of the formation and evolution of the companies. The EO sector covers those companies selling geospatial products which use satellite data. The value-chain we use, extending from satellite operators to information providers, is shown at the end of this report. EARSC first conducted the survey in 2013 and then again in 2015 and 2017. The series of data from previous surveys provides analysis of sector trends. The survey was conducted during the first quarter of 2019; figures refer to the financial year (FY) 2018. The EARSC industry survey is already a crucial tool to monitor the evolution of the EO sector. As always, we shall be happy to receive comments and feedbacks that will help us in preparing the next survey.



515 companies



8396 employees



€1.2 billion revenues



10% growth rate

Highlights of the results as shown above. Note that Canada, which was included in 2017, changes has been excluded this time. Changes and consequences are explained in the report.

Credits:

Front page Mont-Saint-Michel-Bay in France image Contains modified Copernicus Sentinel data (2019) processed by Sentinel Hub EO Browser.

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Over the last two years, the EO market has evolved significantly, bringing new trends to the surface. Particularly, the supply side has seen new technologies and new systems being brought into operation. Furthermore, the regulatory landscape in Europe has taken a significant leap forward with the approval of the EU Space Programme - including funding for the next phase of Copernicus - and the introduction of the 5, cloud-based Data and Information access (DIAS).

In addition to the impact of cloud, the EO service industry finds itself at the crossroads of two revolutions, the one of big data and Artificial Intelligence (AI) and the one of commercialisation of space. One of the drivers of the commercialisation of space is small and micro satellite launchers. In January 2018, Earth-i launched VividX2, delivering the first commercial colour video from space and shortly after, the Finnish company IceEye has launched the first SAR micro satellite. These two commercial launches were complemented by a number of institutional ones. The table below summarizes the main EO launches in Europe over the last 2 years since our last survey was launched. The reduction of costs associated with the launch of satellites will continue to be a driver for the democratisation of access to space.

Advances continue in the use of cloud, artificial intelligence and blockchain technologies. The large volume of data now available requires more automatic processing. On-line services are becoming more frequent and more diverse. The EARSC initiative to develop eoMALL, an on-line

marketplace for EO services, has gone live with the goal to help promote European companies' services.

In terms of market movements, Urthecast has acquired Geosys, therefore reinforcing their presence in the geo-intelligence market, and very recently it has announced its intention to sell the Deimos Imaging assets which were acquired in 2014. In Europe, following the acquisition of TRE -Altamira in 2015, in 2018 CLS has acquired SIRS, with the aim of expanding its services portfolio in the field of continental monitoring. In October 2017, MDA and DigitalGlobe merged to form Maxar Technology: MDA being a Canadian manufacturer and DigitalGlobe being a US commercial satellite imagery vendor, Maxar is now a vertically integrated player. The tendency towards vertical integration continued in the US, with Planet acquiring the software company Boundless Spatial and Orbital Insight acquiring the company FeatureX, specialised in machine learning.

In sum, these trends point to a new age in Earth Observation: small and cheaper satellites enabling more frequent revisit time, more accuracy, and more diverse measurements thanks also to increasingly sophisticated sensors. The uptake of AI in the sector enables faster and better processing. In this technological context, we see companies that are more and more vertically integrated: the EO market is prepared to absorb and value innovations and to evolve further. Over the next few years, we expect to see more intelligent satellites providing targeted intelligence from space.

Date	Satellite	Operator
October 2017	Sentinel 5P	European Space Agency
January 2018	VividX2	Earth-i
February 2018	Gom-4B	European Space Agency
April 2018	Sentinel 3P	European Space Agency
August 2018	Aeolus	European Space Agency
October 2018	CFOSAT	CNES
December 2018	IceEye X2	IceEye
March 2019	PRISMA	Italian Space Agency

*Main EO launches in Europe over the last 2 years**

*Sources: www.directory.eoportal.org and www.acgeospatial.co.uk. The table presented is intended as a summary and might not be completely exhaustive

Industrial Landscape

The data collected this year confirm once again that the EO sector in Europe is experiencing a healthy growth pace. The companies in the sector are being formed at a rate of around 10% per annum.

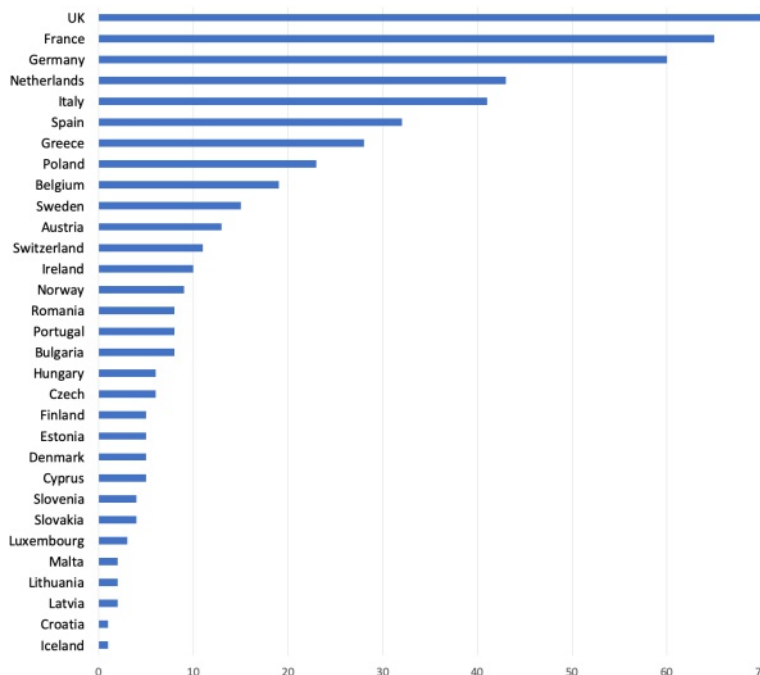


Figure 1. Number of companies per countries

In our survey, we are covering all European countries of which the most represented are UK, France, Germany, Italy and the Netherlands. Figure 1 shows the number of companies from each country present in the database. Unlike previous years, this time we are not considering Canadian companies in our sample, in order to have a better overview of the European market. The list of companies in the database has been cross-checked with local experts in industry or governmental authorities.

Over the last five years, the sector has experienced a steady growth in the number of new companies being formed. The number according to the 2019 survey – based on the new methodology (see methodology section)

– amounts to 515. The growth over the last 13 years since 2006 – when the very first survey was conducted – is shown in Figure 2. The yearly numbers are broken down by class of company.

We define micro companies as with less than 10 employees, small companies with less than 50, medium with less than 250 and large with more than 250. We recognise that this is not fully in accord with the strict definition of an SME, that is, according to Eurostat, a company employing less than 250 people, having less than €50m turnover and whose capital is not controlled by a large company. However, the large majority of the companies in our sample are independently owned. The percentages do not change significantly compared to the previous results of 2016.

A quick word on the comparison with our last survey where we reported 510 companies in the sector. At first sight this is inconsistent with the result this time of 515. As described later, if the changed methodology had been applied in 2017, we would have reported 460 companies active in 2016, which has grown to 515 this year (5.8% p.a.). But this underplays the creation rate of companies. In the process of updating our databases, we identified 53 companies which no longer exist, for different reasons (from going out of business to merging with other companies).

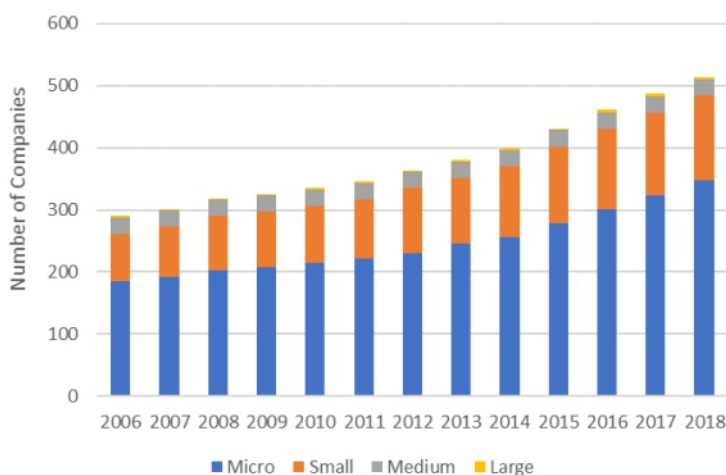


Figure 2. Growth in the number of companies

The growth in the number of companies created in the last two years as shown in Figure 2 is therefore a net growth of 55. The gross number is therefore higher, at 108 companies created in the past two years; a creation rate of 12% p.a. Elsewhere, we note that this time we have excluded Canada from our survey. The numbers shown reflect the change retrospectively as well.

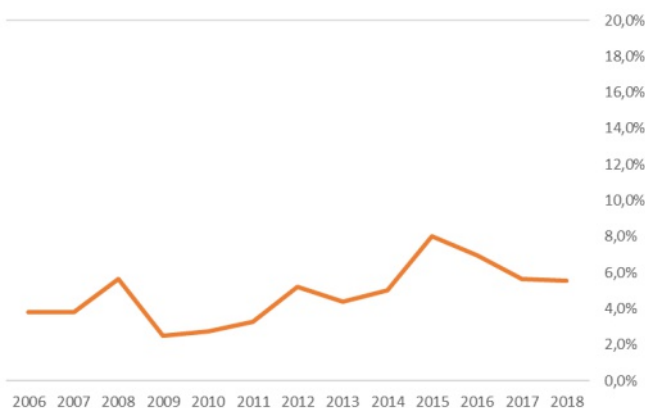


Figure 3. Growth rate in the number of companies

This leads us to look at the change in net growth rate over the years. The net growth rate in the number of active players in the sector (Figure 3) shows a peak around 2015, reaching 8%. It then stabilised, between 2016 and 2017 at around 5.5%. It is not easy to find the reasons for this temporary jump: it might be partially linked to the launch of the Copernicus programme, or to the global emergence of NewSpace activities. We know, from further questions asked to the survey participants and from the parallel survey run by EARSC on Sentinel-powered innovation (see page 9), that the Copernicus programme has had a significant impact on the companies' business.

From this information we can conclude that, at least for the European market, the Copernicus programme has played a significant role as an entrepreneurship enabler. Some companies went as far as stating that their business model would not be sustainable without the input of free data. For what concerns the NewSpace activities we do not have a precise analysis of the effect of it on the European market: as a more comprehensive entrepreneurial wave, the outputs are less straightforward to capture. We can assume that both the "policy effect" (introduction of Copernicus) and the "market effect" (NewSpace) had an impact on the jump in the growth rate between 2015 and 2016, and an overall positive effect on the European EO service market.

Regarding the lower growth rate in 2016 and on, this may be linked to artifacts of the survey or to the greater difficulty of identifying newer companies. However, we do not think it is a major problem as, thanks to the use of different channels (such as the Copernicus competitions and prizes) we have been able to refine the research significantly compared to previous years. More details on the construction of this year's sample are explained in the methodology section at the end of the report.

The main share of companies in 2018 is composed of SMEs, that amount together to 96% of the total population. This breakdown remains quite constant over the years. The sector remains quite fragmented with micro players, with less than 10 employees, making up to 68% of the population (Figure 4). The ratios remaining constant with previous results suggest that micro companies are growing into small ones, and similarly small into medium.

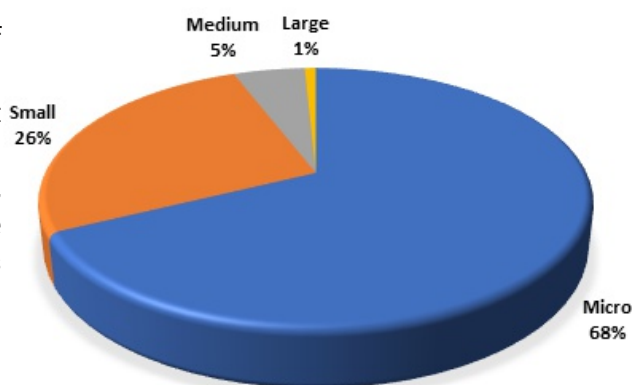


Figure 4. Distribution of companies by size

Regarding ownership, 82% of the companies are privately owned: this figure is consistent with what has been shown in previous surveys (80% according to 2016 data). This result is in line with the picture of a sector dominated by micro players and start-up, with the founder being also the owner of the company.

Employment

The number of employees in the European EO services industry has grown fairly steadily over the last five years. The figure for 2018 is 8396 employees, compared to 6920 in 2016 based on the change in methodology; a growth of around 10% per annum. The annual growth of staff is reported in Figure 5.

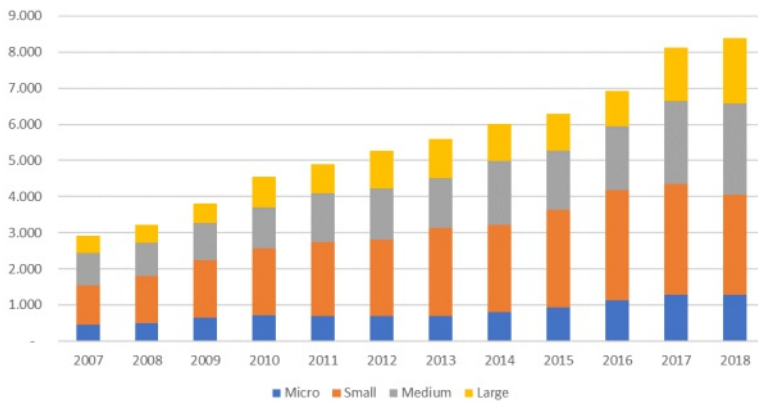


Figure 5. Growth in the total number of employees

Micro and small companies together employ around 50% of the workforce of the EO sector. The 4 big companies employ up to 22% of the total workforce. This distribution is slightly but not substantially different from that reported in the last survey (Figure 6).

Over the last two years employment in large companies has experienced a jump, as shown in Figure 5. This growth can be largely explained by a reorganisation in Airbus, that experienced a significant growth over the last two years.

Out of our total population of 515 companies, we have reported figures on staff for 335 companies. We assume that we were able to capture the data of all the medium (26) and large companies (4), we projected the values for micro and small companies over the total population. This method, which is the same as used in previous surveys, leads to the figure reported above. The total figures coming from primary sources, amount to 6897 staff, representing 82% of the total.

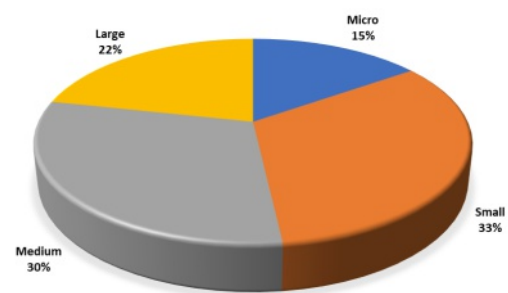


Figure 6. Distribution of employees across company category

According to our previous surveys, employees in the EO services companies are highly qualified; 90% of them hold a university degree and around 60% hold a post-graduate degree. The gender balance of the sector seems to be essentially stable at 30% of women and 70% of men.

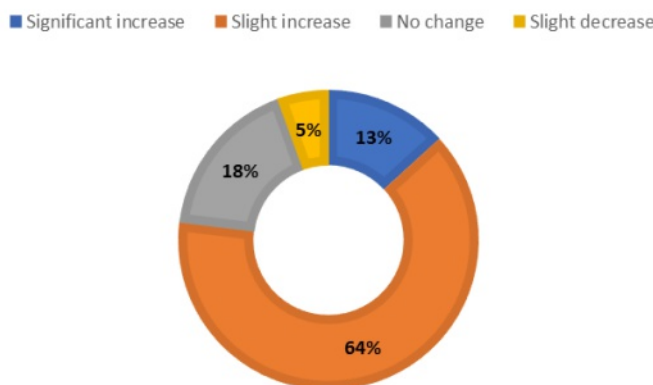


Figure 7. Expectation in the growth of EO-related employees (12 months)

Companies were also asked about their expectations: how much do they see their EO-employees growing in the next 12 months?

The majority of the companies (77%) replied with "slight" or "significant" increase, showing a good degree of optimism towards the growth in the sector and the willingness to hire more experts in EO and continue the positive trend witnessed in the last years (Figure 7).

Revenues & Growth

To calculate revenues, we use a similar methodology to the one used to calculate employees, which is the same as for previous surveys. To the reported data we added an amount calculated for the rest of the companies for which we do not have precise information. This amount is based on the average revenue per head of each cluster of companies (micro, small, medium and large) multiplied by the number of employees, so it is a projection of the actual reported figures (around 85% of the total).

The total sector revenues for 2018 is €1.248m. The headline figure reported last time was also about €1.25b but this year we are excluding the figures from Canada. Discounting accordingly the numbers from previous years (e.g. not counting Canada in), we obtain a growth rate of around 10,6% from 2017. The data reported in Figure 8 includes the WorldDem contract won by Airbus in 2015, which had a value of around €450m over 4 years. We noted in the last survey that this would have a distorting effect if not accounted for and, as stated then, we have assumed a spread of the revenues over the 4 years, as it is shown in the graph.

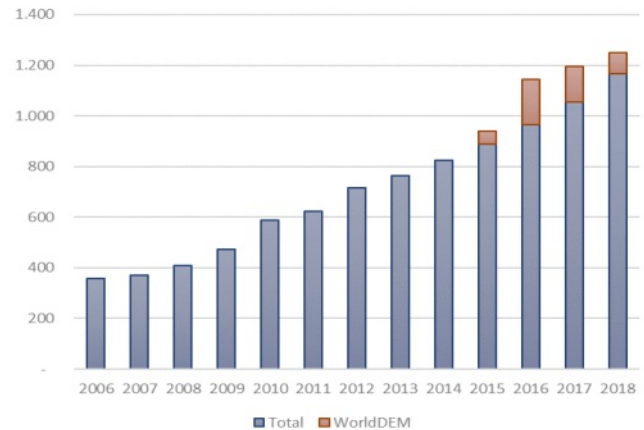


Figure 8. Growth in the revenues of the sector

The breakdown of revenues per size category shows that the large companies are still dominating the sector in terms of turnover (relatively to the number of companies present in the population). Figure 9 shows that 31% of the revenues comes from large companies.

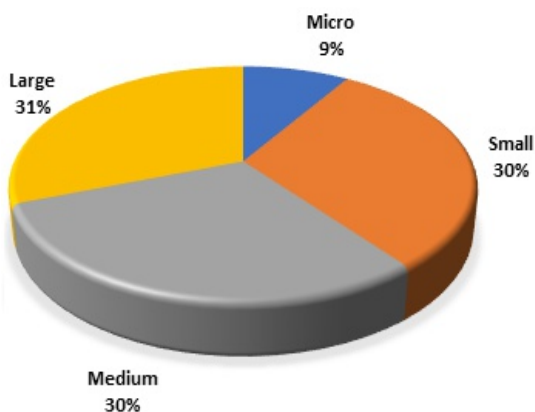


Figure 9. Distribution of revenues across company category

According to the respondents of the survey, 91% of the companies of the sector are profitable, with an average profitability of 11%, registering a growth of 3 percentage points compared to the figure reported in the last survey (8%).

We asked the degree of "optimism" of companies regarding the growth of their revenues: the results look once again extremely positive with more than 80% of respondents envisaging growth in the future.

Figure 10 shows the weighted growth rates per company category over the last 5 years: the overall growth of the sector revenues is stable at around 10% per annum. Some variance is present in the breakdown per company category, particularly in the large companies' revenues growth rates. We do not have a definitive explanation for this trend. It may be linked to the small population of large companies, causing a high variance in the figure. One distortion due to the WorldDem contract is certainly present. Another factor could be a "boundary issue" between medium and large companies, as a consequence of acquisition activities over the last two years ie as companies grow and cross from medium to large, so there will be a noticeable jump or fall in the total revenue in the large and medium categories.

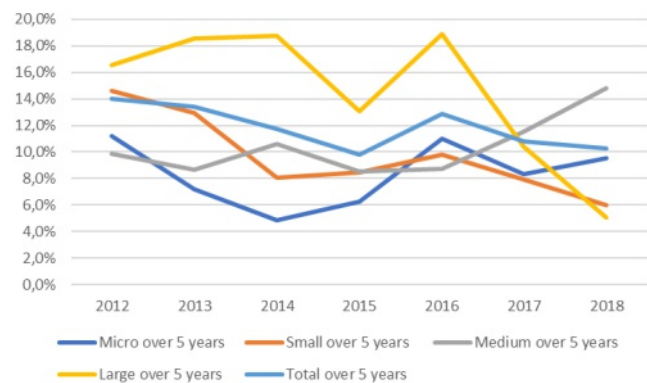


Figure 10. Weighted growth rates over the last 5 years

Markets

The analysis conducted focuses on three main market dimensions: vertical, geographical and by consumer type. Moreover, this year we looked also at what the companies consider the most significant barriers to their growth. The results show interesting trends, specifically for what concerns the split by vertical markets. We used a segmentation, focusing on market sectors sales (demand side) instead of thematic (supply side). We took into consideration 22 market sectors and asked the companies to provide us a figure for the percentage of sales in each sector. For clarity purposes, we have combined them in six market segments, as shown in Figure 11. The complete vertical market breakdown is shown in Figure 12.

From the first graph we can derive two key observations: the security market is by far the most flourishing of the sector, followed by land (including agricultural and forestry services) and built environment (including energy markets, transportation, construction and real estate). A disclaimer is necessary at this point: we have collected responses from almost the totality of big companies and only from a part of small and medium ones. The results of the market sector breakdown are therefore biased towards bigger players that are much more active in the defence market, through contracts with governments and public administrations.

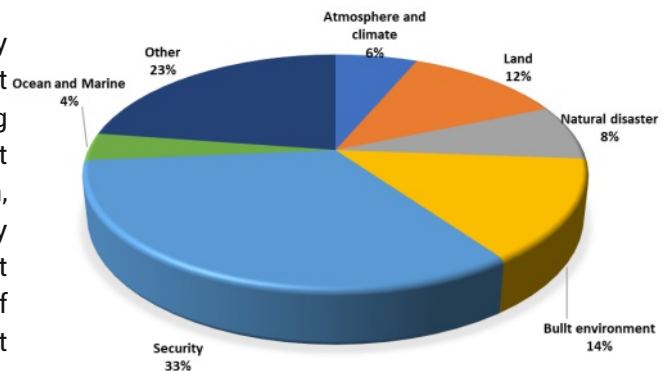


Figure 11. Market sectors' sales

The growth in the segment of defence and security (from around 20% in 2016 to more than 30% in 2018) may be explained by the weight of big players in this sector and specifically by the recent reorganisation of Airbus where the space division (formerly Astrium) was merged with the Defence division (formerly Cassidian). Recently, EARSC has been able to capture the activities of smaller companies which are active in the defence industry, showing an increasing interest of new businesses for this market. The launch of the new European Defence Fund, a program specifically designed to stimulate innovation in the defence market could accelerate this process even further.

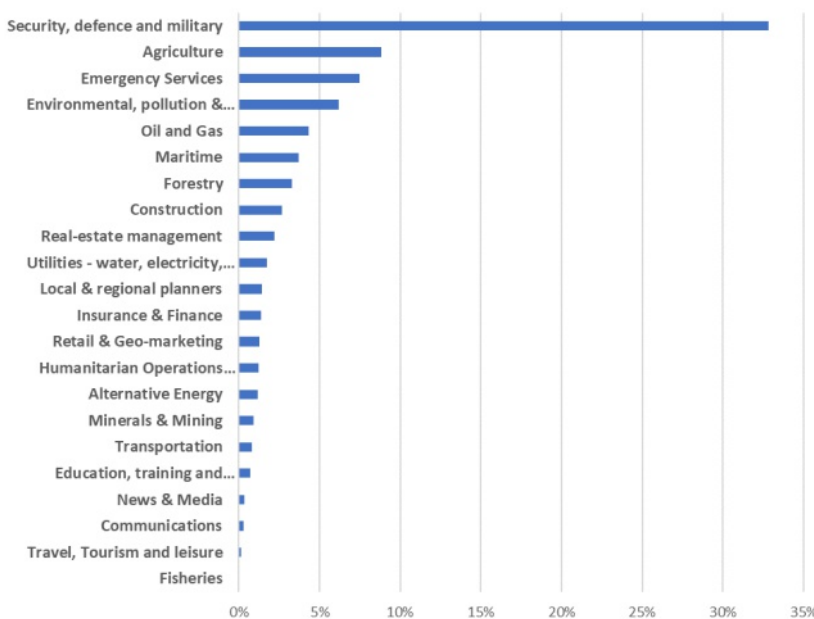


Figure 12. Market sectors's sales in detail

Compared to the last survey, the percentage of sales in environmental and atmosphere has significantly reduced. Looking at the granular data, the majority of the revenues in this sector comes from small companies. Even though a lot of smaller players have business in environmental monitoring, the share of the revenues in this sector amounts at only 6%. Compared to 2016, no other significant changes are detected: agriculture and land is a strong second sales segment, with 12% of business generated.

In general, also looking at past survey, we do realise that this particular question is highly sensitive to the sample composition. This sensitivity is not only linked to the size and the amount of revenue represented by the big players, but also to the number of possible responses ie number of sectors available. The breakdown by market segment is still challenging for companies to provide . The breakdown offered in the survey is based on the EARSC taxonomy. Despite the high sensitivity, we decided to keep this information in the report, as it is not available elsewhere.

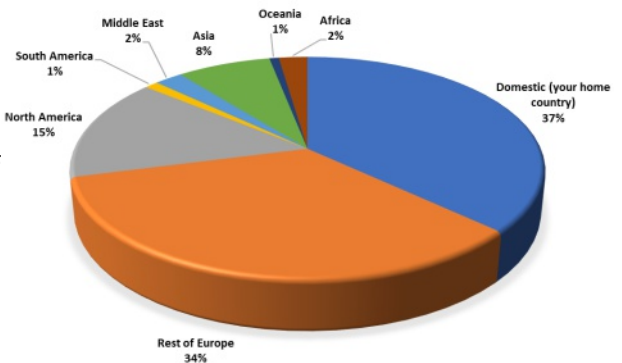


Figure 13. Geographic distribution of sales

The geographic market segmentation is another fundamental area of interest for EARSC, as the association is active in different projects to promote the internationalisation of EO service companies (Figure 13)

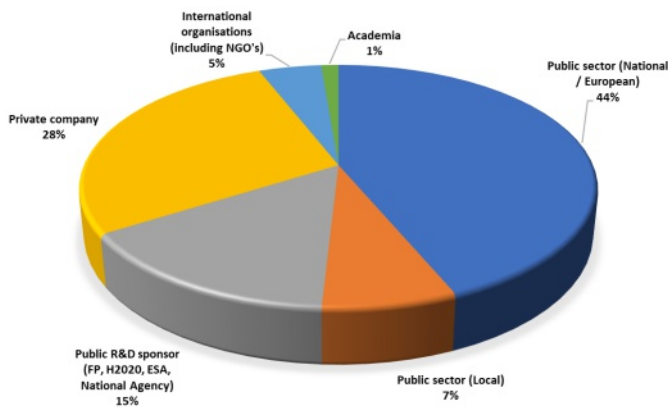


Figure 14. Revenue split by type of customer

The key trend to highlight is the growth of sales in North America which increased from 10% in 2016 to 15% in 2018. Big players have significant business share in North America. Smaller players have reported significant shares of sales in this area as well, some of them even the majority. The other markets seem to be more or less stable; the North American sales seem to have grown at the expense of the Asian market (from 12% to 7%) and Middle East (from 8 to 2%).

The revenue split by type of customer is shown in Figure 14. The percentage share coming from public sector sources has increased slightly compared to previous surveys from 62% to 66%. The local authorities share has fallen slightly from 9% to 7%, whilst the share of research and development sponsor has increased from 9% to 15%. The direct business with the public sector accounts for 51% of the market.

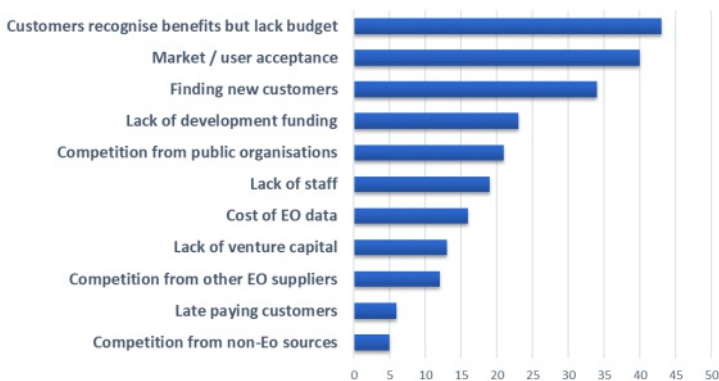


Figure 15. Perceived barriers to growth

Figure 15 shows companies views on their perceived barriers to growth. The most relevant barriers seem to be the ones related to market uptake and customer acceptance: lack of budget from customers, user acceptance and possibilities to find new customers. The second cluster comprises lack of staff, lack of development funding and competition from public authorities. All these areas of are being tackled by EARSC through different initiatives.

Activities

The value chain of the EO services extends from satellite operation and data sales through to consultancy services and software development.

The EARSC survey covers companies that have their core business in selling data and information: companies active in other sectors (e.g. oil and gas or agriculture) and processing EO data for internal use are not taken into consideration. A dedicated survey or study on the internal service providers might be conducted in the future, as this area of activity is of increasing interest for the association. The split of activities based on 2018 revenues is detailed in Figure 16.

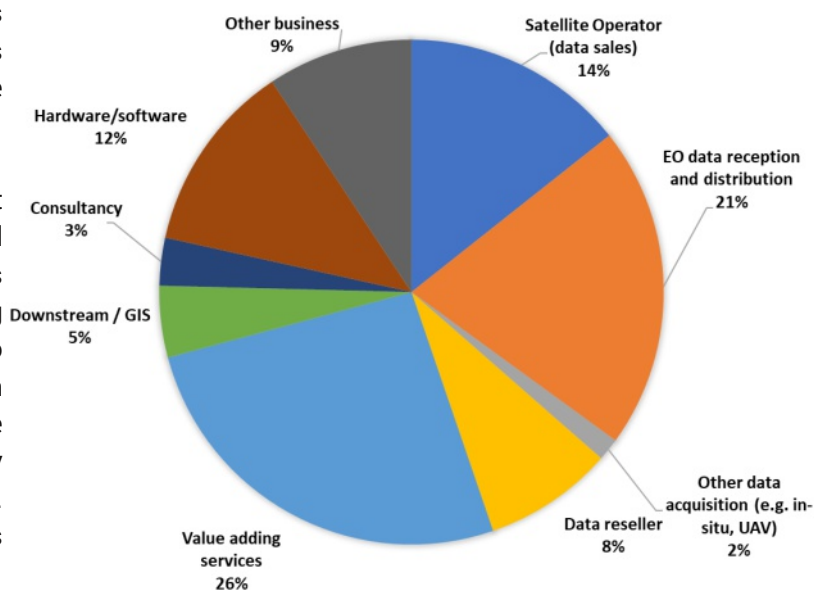


Figure 16. Split of activities based on 2018 revenues

In comparison with 2016 data, we can identify some key trends in the evolution of the activities across the value chain. The growth of data reception and distribution has increased by around 9% (from 12 to 21%). The reduction in the share of hardware and software can be linked to the different focus of the survey this year, since we excluded pure IT companies and decided to concentrate more on companies with core business in EO and related services. Overall, with the exception of the two trends described above that can be mainly linked to a change in the sample and methodology, the picture appears to remain quite constant compared to two years ago: the value adding services represent around 26% of the revenue and the data sales 14%, with a contribution of Geographic information system (GIS) and consultancy activities of around 10%.

More significant changes are encountered in the split of type of services (Figure 17). The fully automated services more than doubled their share in the last 2 years, rising from 9 to 21%. Bespoke services accounted for to 64% in 2016 and have decreased to 26% in 2018. The latest data show that the majority of the revenues come from semi-automated services, entailing a limited human intervention. This shows that the service industry is moving from a one-to-one and project-based approach to a build-one-sell-many model.

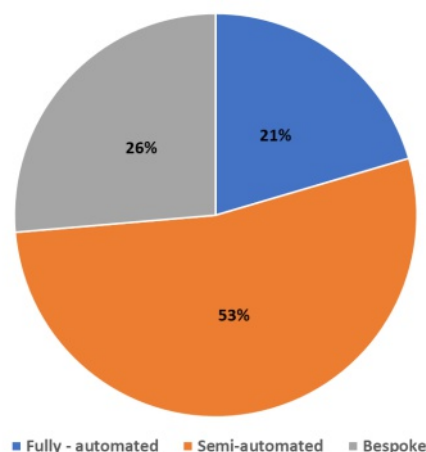


Figure 17. Type of services offered

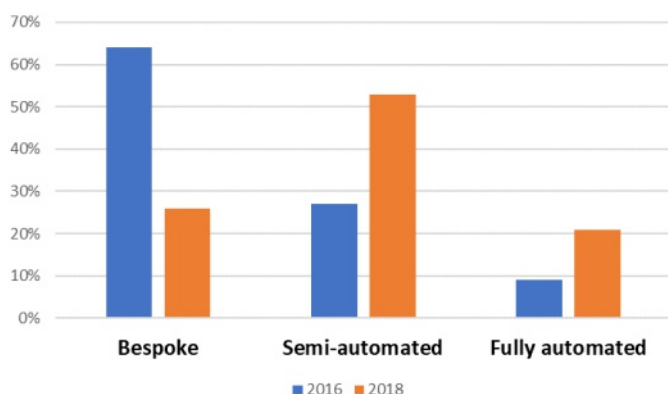


Figure 18. Type of services offered - comparison

This trend is expected to continue in the future and shows that the Earth Observation market is not only taking advantage of the digital revolution, but plays an integral role in it. EARSC is taking appropriate actions to give support to this type of innovation thanks to services like eoMall, whose latest version has been launched in May 2019. A comparison between the 2016 and 2018 data is shown in Figure 18.

Copernicus continues to be a strong influence on the industrial sector and, with a total budget of €5.8b over the next 7 years (out of a total of €16b for space) linked to an overarching space programme approved by the European Parliament last April, the influence will only grow larger.

Nevertheless this budget are focused more on upstream activities with around 25% foreseen for the downstream activities and services. The benefits from the downstream sector is seen as mainly indirect i.e. using data and services to develop new business.

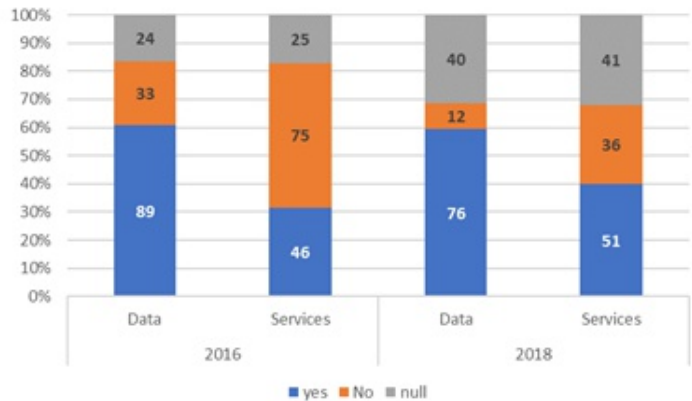


Figure 19. Use of Copernicus data and services

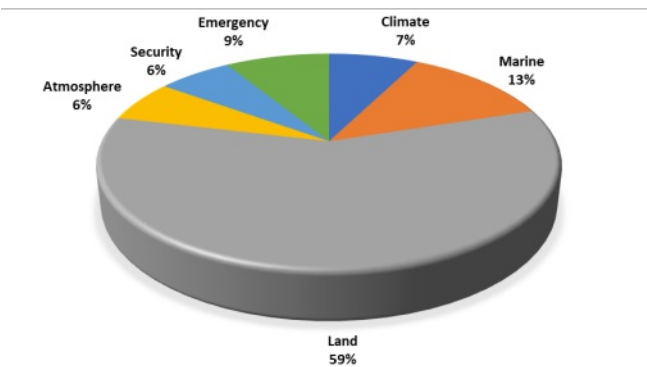


Figure 20. Companies interests in Copernicus Services

Among the Copernicus services, companies are most interested in the land services, followed by marine and emergency (Figure 20). These results are also broadly in line the results from previous surveys , detecting no significant changes with respect to 2016 data.

In a follow up interview conducted with selected companies (30 in total) the vast majority of them expressed a positive view of the free, full and open data policy, considered as an invaluable cost advantage and business enabler, especially for small businesses and start-ups at the beginning of their activities. The free, full and open data policy, according to a recent study conducted by the European Commission published in April 2019, has been confirmed as the best option (from a legal and technical point of view) to push the ecosystem forward.

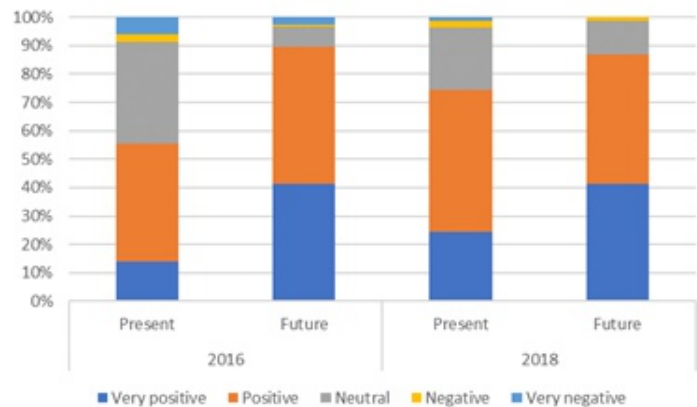


Figure 21. Considered impact of Copernicus on Business

The companies were asked also about the present and future impact of Copernicus on their business. They reported a positive impact in the present (Figure 21) and an even higher positive impact in the future.

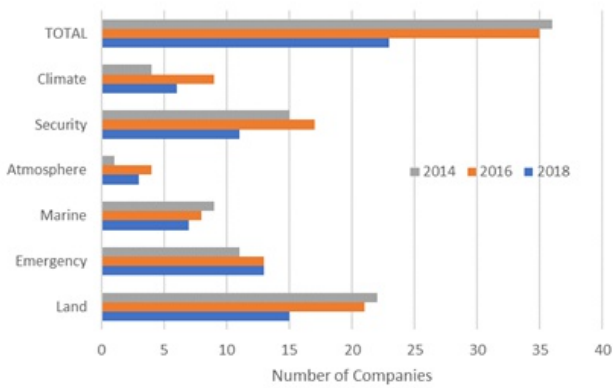


Figure 22. Companies involvement in Copernicus services

a sampling methodology? To answer this, we shall plan to conduct a more detailed investigation into this and other points specifically related to Copernicus.

In June 2018, following several years of reclamation by EARSC concerning industrial access to Copernicus data, in June 2018, the DIAS have been launched: five consortia have been awarded contracts by European Space Agency under the authority of the European Commission. The five platforms provide centralised access to Copernicus data and services and processing tools in a cloud-based environment. We are extremely interested in following the extent to which the DIAS will impact the market in future years.

Direct contracts with Copernicus – both data sales and services – contribute for around 11% of the total sector's revenue. Considering the 2018 annual budget dedicated to Copernicus services and in-situ component (€135 million), we obtain that industry is contracted for around 28% of the total value of Copernicus services contracts, showing a positive trend compared to the figures reported in the last survey (20% in 2016). However, the number of companies directly involved in the supply of services appears to have reduced (Figure 22) compared to the last 2 surveys. Does this reflect a concentration of supply or is it an artefact of our survey which relies on

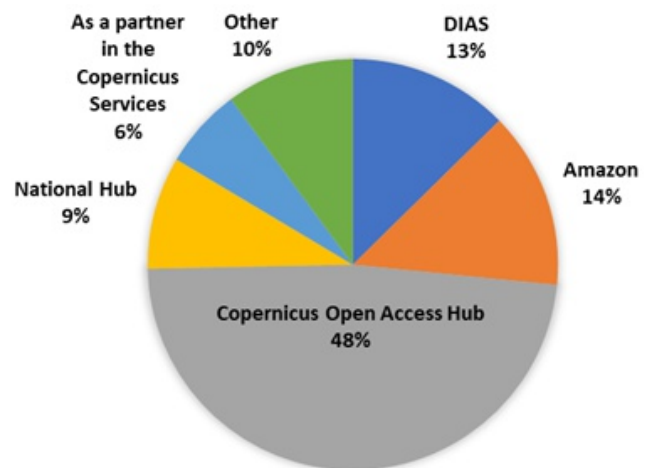


Figure 23. How Companies are accessing Sentinel Data

Companies were asked to indicate the route most frequently used to access Copernicus data: Figure 23 illustrates the share of responses indicated. The question was not asked in previous years, so we are not able to show any trend. The most frequent route seems to be the Copernicus Open Access Hub, followed by AWS. The recently launched DIAS register 13% of responses. We will continue to monitor the evolution of the data access component, in particular to detect the uptake of the DIAS in the up-coming years.

Copernicus and Start-ups

Between 2018 and 2019, EARSC has conducted a parallel study to the industry survey on innovation and entrepreneurship driven or supported by data from the Copernicus Sentinel satellites¹.

Based on a survey of 97 individuals conducted during October 2018-April 2019, the study explored the characteristics of Sentinel-based start-ups, their business and revenue models, and entrepreneurial and technological maturity, as well as the challenges standing in the way of Sentinel-based entrepreneurship. The objective was to explore the dynamics of this ecosystem and the possible presence of patterns or trends, deriving a baseline for the number of new companies (i.e. start-ups) making use of Sentinel data.

¹ See "Innovation and Start-ups powered by Copernicus Sentinel data, Preliminary Report", June 2019. Download the full report at <http://sebs.earsc.org/>

The main business models in use by start-ups are Geospatial VAS, Software-as-a-Service, followed by Data-as-a-Service and Information-as-a-Service. For pre-commercial entities, Consulting and Data-as-a-Service are the most prevalent. Companies aiming at B2C are found mainly within the top four business models, whilst business models providing Information-as-a-Service are aimed purely at other businesses. Analytics, Aggregation and Visualisation activities are most common amongst start-ups, closely followed by Aggregation. The high degree of permutation of business model components amongst respondents may suggest increasing vertical integration across the four tiers.

Sentinels-1 and -2 clearly dominate as far as the choice of datasets is concerned. The main revenue model in use across the sample is subscription fees; the usage fee model is almost exclusively applied by pre-commercial entities. Extrapolating from text comments, consulting sales may also constitute a significant contributor to revenue.

Most of the respondents indicated that their business models could continue, less efficiently, without Sentinel data. However, some 30 start-ups indicated that Sentinel data provided the basis for a competitive advantage and/or that their business models would not be possible without Sentinel data (Figure 23) .

For start-ups, the main challenges are sectoral knowledge, legal support, partnership opportunities and infrastructure, and although access to Sentinel data is not regarded as a challenge by the majority of respondents, access to finance is considered to be the most difficult challenge.

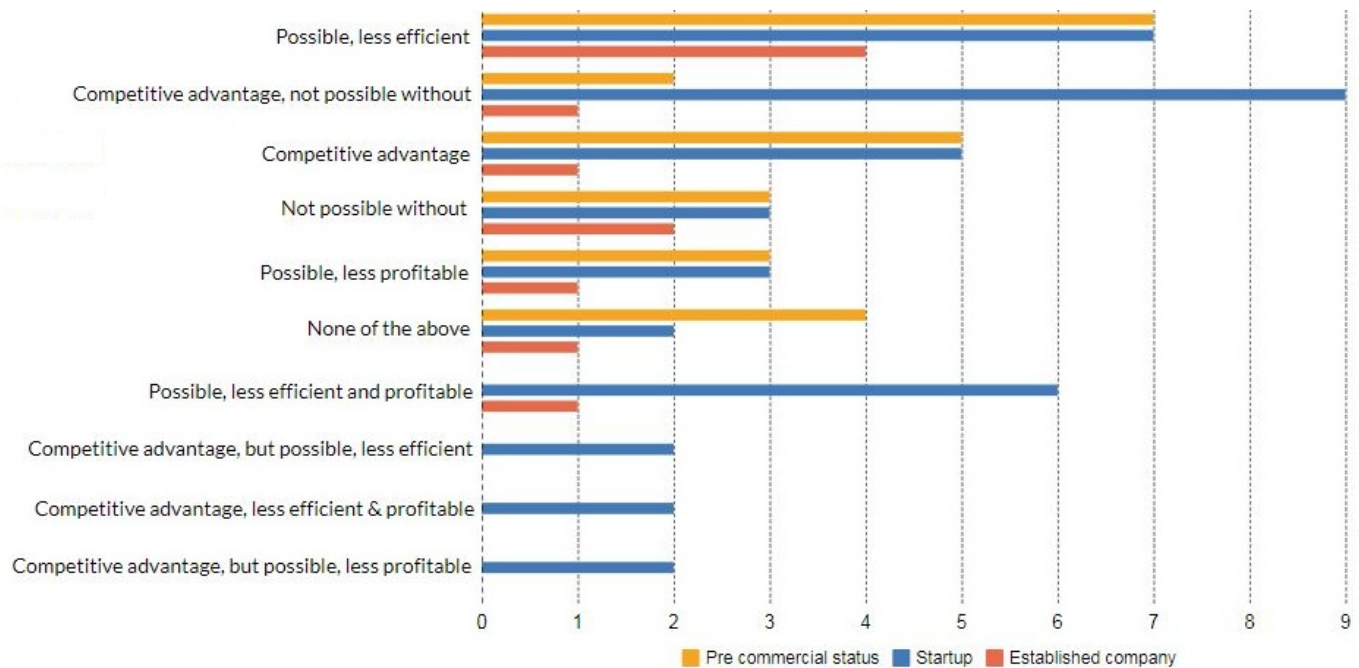


Figure 23. Impact of free and open data, number of responses

Optimism index

In each survey, we construct an index to measure the optimism of companies with regard to future employment and revenues. Do they expect their number of employees to rise or fall significantly over the next 12 months? The results in Figure 24 show the results for each of the 4 surveys now conducted. It shows rising expectations for both parameters with both significantly increased since 2 years ago.

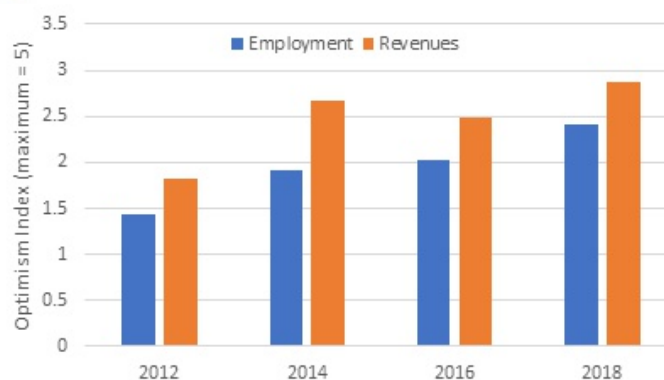


Figure 24. Overall optimism index

Change in methodology

This year we have updated our methodology used to identify the core data. We have thoroughly reviewed our master database – a list of companies active in Europe, that we maintain and update regularly – and restricted the sample to players that have a consistent and significant share of business in EO. Moreover this year we have decided to exclude Canadian companies from the scope of the survey

To achieve this result, we proceeded as follows:

- We broke down the database by nationality
- We investigated every single company in each national database, identifying its main area of business (EO, GI, Airborne, Software, consultancy) and we chose to maintain in the core database only the companies who have a clear business role in EO activities.
- We identified companies who folded, merged or stopped being active for other reasons.

This process led us to exclude around 220 companies from the database we have used in previous years. The sample we use for the 2018-2019 Industry survey is therefore more restricted than the previous one, but more precise and accurate in terms of sector boundaries. It also leads to a much better understanding of the formation (and failure) rate of companies.

we should clarify since we had approximately the same number of companies (510) in the previous survey two years ago. But this comparison is misleading for reasons already given. If we compare on a like-for-like basis, we consider that the

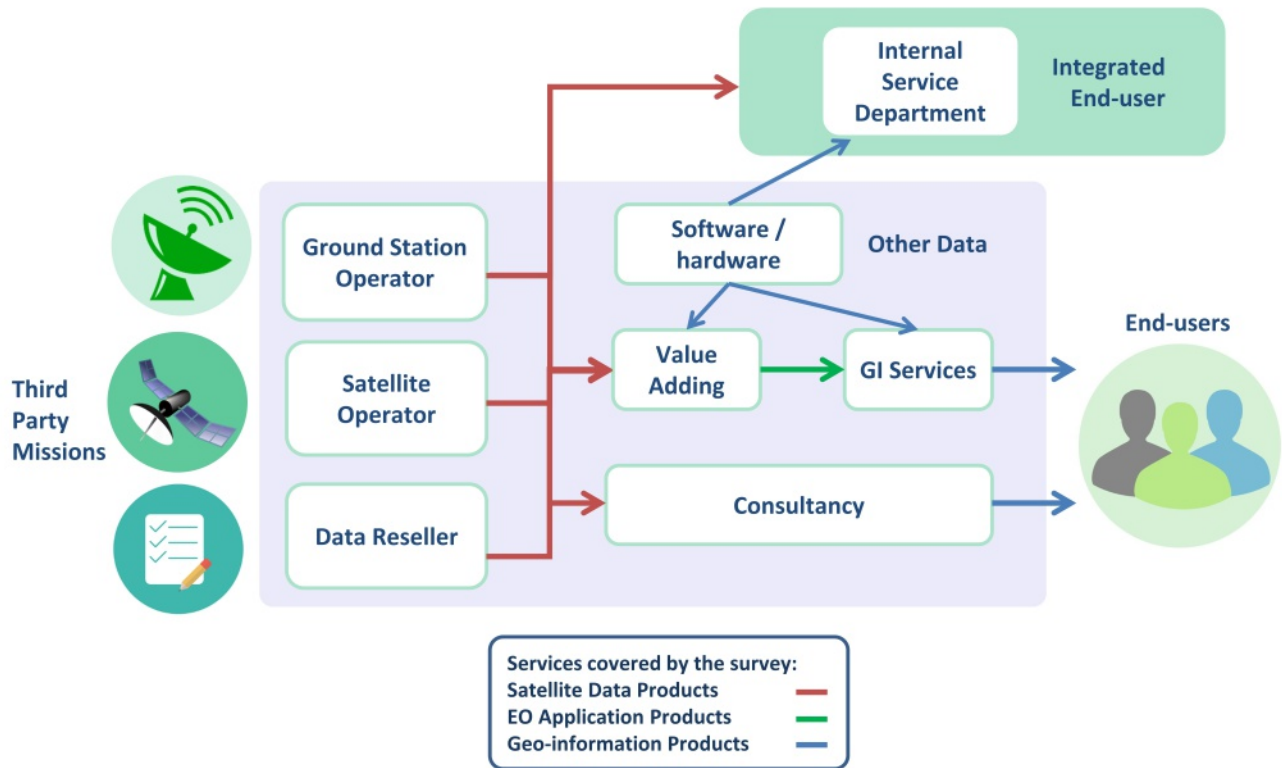
population would have grown to around 580.

Alternatively, if we had applied our stricter definitions in the 2017 survey, the number of companies would have been around 460; corresponding to a growth rate of nearly 6% per annum. But this is a net figure and if we account for those companies which have merged with others or which have stopped trading, then the overall growth rate is close to 12% which represents more accurately the rate of creation of new companies in the sector.

As they are not so visible, it is difficult to capture all the companies that are newly formed. But this is becoming somewhat easier due to focused initiatives such as the Copernicus Masters, the Copernicus incubators and accelerators, the ESA incubators. We used these channels plus desktop research and paid databases (namely Orbis by Bureau van Dijk) to gather the core data: year of incorporation, number of staff and revenues for the last financial year.

We have been constantly active on social media and at networking events to spot and interact with companies that were not in our database. New companies are more findable now compared to the few years ago, thanks to the initiatives and events that put them on our radar, sometimes for the first time. In the next surveys we will for sure be able to collect data the number of companies formed in 2017 and 2018 with a higher degree of certainty.

EO Services Value Chain



Glossary

Term	Definition
Satellite Operator	An owner/ operator of a satellite system selling data acquired from the system.
Ground Station Operator	An owner/ operator of a ground station acquiring data from a 3rd party owned satellite system.
Data Reseller	A seller of data coming from another satellite operator.
Value-adding	This covers the activity of processing satellite data probably combined with other data to generate EO products or application products sometimes referred to also as thematic products.
GI Services	This covers provision of products that use EO products as part of their input. A downstream service provider is working indirectly with EO satellite data.
Consultancy	The provision of one-off products based on specific knowledge. It is distinguished from other services by the one-off nature of tasks where other services are providing regular and multiple products.
Internal Service Department	An organisation providing EO or geospatial products to other departments within a company but which is not selling them in a commercial market. The parent organisation will be in a user sector such as oil & gas, agriculture etc.
End User	A customer in the public or private sectors which is procuring any geo-information product.
Integrated End User	Simply defined as being an end-user with its own internal EO service capacity.
Geo-information product	Any or all products covered by the terms: satellite data, value added, or geospatial products.
On-line Service	Service generated automatically and delivered on-line. It can be characterised by one product for many customers.



EARSC, the European Association of Remote Sensing Companies is a membership-based non profit organisation which coordinates and promotes activities of European companies engaged in delivering Earth Observation geo-information services. EARSC's key goal is to promote the industry and to help to develop the market for EO services. EARSC is representing EO providers of geo-information services in its broadest sense creating a network between industry, decision makers and users and covering the full EO value chain from data acquisition through processing, fusion, analysis to final geo-information products and services. EARSC currently has around 130 members and the network contains all the leading European suppliers of EO data and value-added products as well as many small and micro-enterprises.

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