



Current findings and needs by data-centric companies in Europe v1



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Abstract	This document outlines the lessons learned in the first iteration of Data Market Services Accelerator project, a H2020 project that aims to help overcome the barriers of European data-driven Small and Medium Enterprises and start-ups (from now these will be called SMEs) in data skills, entrepreneurial opportunities, legal issues and standardisation, thanks to the provision of free support services for them.

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Contents

Executive summary	3
1 Introduction.....	4
2 Background	4
3 DMS accelerator services	5
4 Analysis	5
4.1 Needs of SMEs according to their applications	5
4.2 Service uptake and feedback.....	7
4.2.1 Webinars	7
4.2.2 Courses	8
4.2.3 Mentoring and live training.....	8
4.2.4 Attendance to events and networking	9
4.3 Impact of DMS on SMEs.....	9
5 Lessons learned	10
5.1 DMS amendments based on lessons learned.....	11
5.1.1 Selection process	11
5.1.2 Services alignment	11
5.1.3 Services personalisation	11
5.1.4 Services breakdown	12
6 Conclusion	13

Figures

Figure 1: Application Form Design 6

Figure 2: Second choice of applicants 7

Executive summary

This document outlines the lessons learned in the first iteration of Data Market Services Accelerator project, a H2020 project that aims to help overcome the barriers of European data-driven Small and Medium Enterprises and start-ups (from now these will be called SMEs) in data skills, entrepreneurial opportunities, legal issues and standardisation, thanks to the provision of free support services for them.

The provision of the services during the first year of the programme was closely monitored and analysed, which allowed the DMS consortium to gain insights about how SMEs engage with the services, what are the main challenges for these services to be delivered, and what lessons can be learned going forward. The results of the analysis highlight the importance of understanding the specific needs of the programme applicants and participants. The analysis also showed that participants find it challenging to engage with the services, but once they do engage, they realise their high value. In light of these results, the DMS consortium made a set of amendments in the services provision for the second cohort, consisting of a more nuanced participant selection process, a better alignment of services, a more personalised provision, and a breakdown of some of the services.

1 Introduction

Data Market Services Accelerator (DMS) has brought together a team of investors, coaches, consultants, lawyers, researchers, and communicators, selected from top partners, joining skills and knowledge for the next best startups in Europe. DMS was born in 2019, under the European Union's Horizon 2020 research and innovation programme, aiming at overcoming the barriers of data-centric SMEs and startups in Europe. Our main challenge is the lack of trusted and secure platforms and privacy-aware analytic methods for secure sharing of personal and proprietary/commercial/industrial data. This hampers the creation of a data market and data economy by limiting the sharing mostly to open data.

2 Background

The European data market has been analysed in the past years by several studies and reports ^{[1][2][3][4]}. This has shed light on interesting figures and gaps reflecting the reality of a market which has not stopped growing.

Despite of this growing bottom-line market, there are some barriers and gaps, that justify the existence of a project like Data Market Services:

Europe has been slow to adopt big data compared to the United States. More than half of worldwide revenue from big data is expected to come from the USA, and only one in twenty top big data companies is European.

There exists an important data skills gap in Europe, as evidenced by the European Commission ^[5]. One of the studies by the International Data Corporation (IDC) ^[6] estimates that there is a significant mismatch between the demand and supply of data workers as almost 400,000 jobs go unfilled.

¹ European Data Market SMART 2013/0063. Final Report. 01/02/2017 http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=44400

² Worldwide Big Data and Business Analytics Revenues Forecast to Reach \$187 Billion in 2019, According to IDC. 23th May 2016. <https://www.businesswire.com/news/home/20160523005153/en/Worldwide-Big-Data-Business-Analytics-Revenues-Forecast>

³ Big data and data analytics. The potential for innovation and growth. Briefing September 2016. European Parliament. [http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/589801/EPRS_BRI\(2016\)589801_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2016/589801/EPRS_BRI(2016)589801_EN.pdf)

⁴ Open Data Maturity report 2019. European Data Portal.

https://www.europeandataportal.eu/sites/default/files/open_data_maturity_report_2019.pdf

⁵ A new skills agenda for Europe. European Commission

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016DC0381&from=EN>

⁶ Self-Service Data Science: A Strategy for Bridging the Skills Gap. Oct 2016 -<https://www.idc.com/getdoc.jsp?containerId=EMEA41825616>

3 DMS accelerator services

All DMS services, including the webinars, are grouped into the following categories:

- Acceleration:
 - Provide training in different non-tech skills required for the start-ups and entrepreneurs to develop their business adequately.
 - Facilitate the mobility of early stage start-ups across different entrepreneurship hubs and programmes in Europe.
- Fundraising:
 - Train and support startup and SMEs in developing strategies for fundraising.
 - Organise meetings and networking events with investors.
- Marketing:
 - Train and support startup and SME companies in developing marketing skills to ease the go-to-market phase of their products and services.
- Standards & legal:
 - Train and coach high tech SMEs and institutions across Europe in handling and exploiting intellectual assets.
 - Train and coach high tech SME's in the standardisation arena.
 - Train and coach high tech SME's and institutions across Europe in making their services GDPR compliant.
- Data skills
 - Train staff to generate trust for the companies making use of shared data in their business.
 - Access to the existing contents provided in the SDSA (Southampton Data Science Academy) to reduce the data and digital skills gap.

These services were mainly delivered in five different ways:

- Webinars
- Courses
- Mentoring
- Live training
- Participation in events and networking

4 Analysis

In this section, we discuss how SMEs of the first cohort responded to the DMS programme. Firstly, we outline the needs that SMEs reported in their application forms, secondly, we report on how these SMEs made use of the services provided, and thirdly we share an impact assessment of the services provided.

4.1 Needs of SMEs according to their applications

In its first open call, DMS received 150 applications. In the application form, one of the main set of questions consisted of the type of services that applicants would request, among a set of options, the main of which were:

- Venture capital matchmaking
- Training
- Acceleration/incubation
- Mentoring
- Public fundraising
- Marketing

As figure 1 displays, over half of applicant SMEs reported that their primary need was venture capital match making, followed by public fundraising (22%) and entrepreneurial training (12%). That was their first choice, but applicants had two more choices. In figure 2, their second choice is displayed, which consisted of a majority of requests for acceleration services (26%), mentoring (18%), venture capital matching (18%) and training (14%).

Count of Services Wanted 1

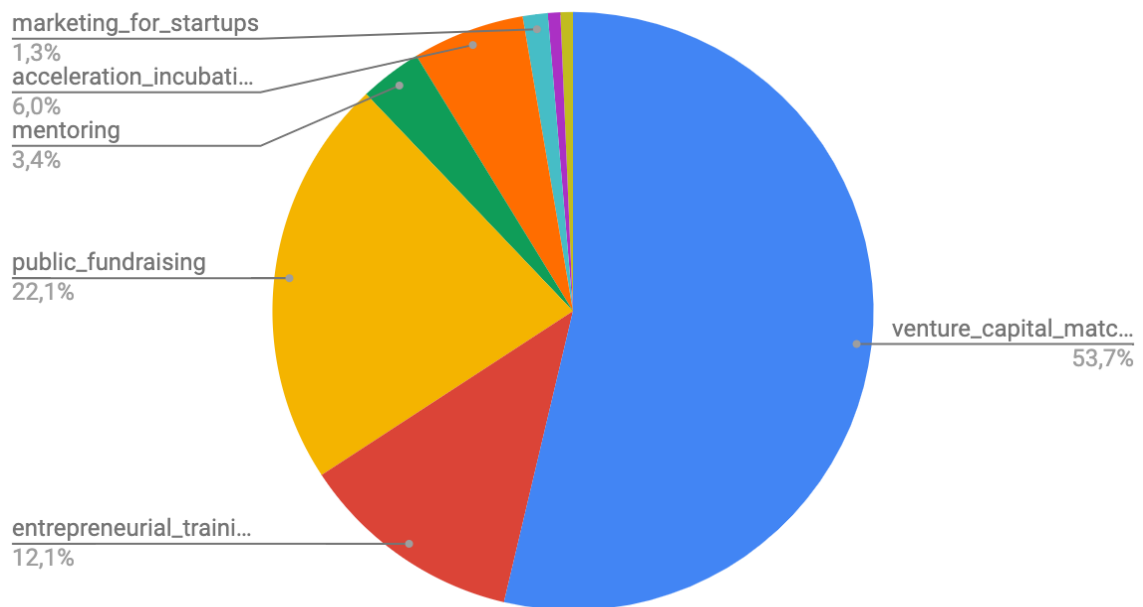


Figure 1: Application Form Design

Count of Services Wanted 2

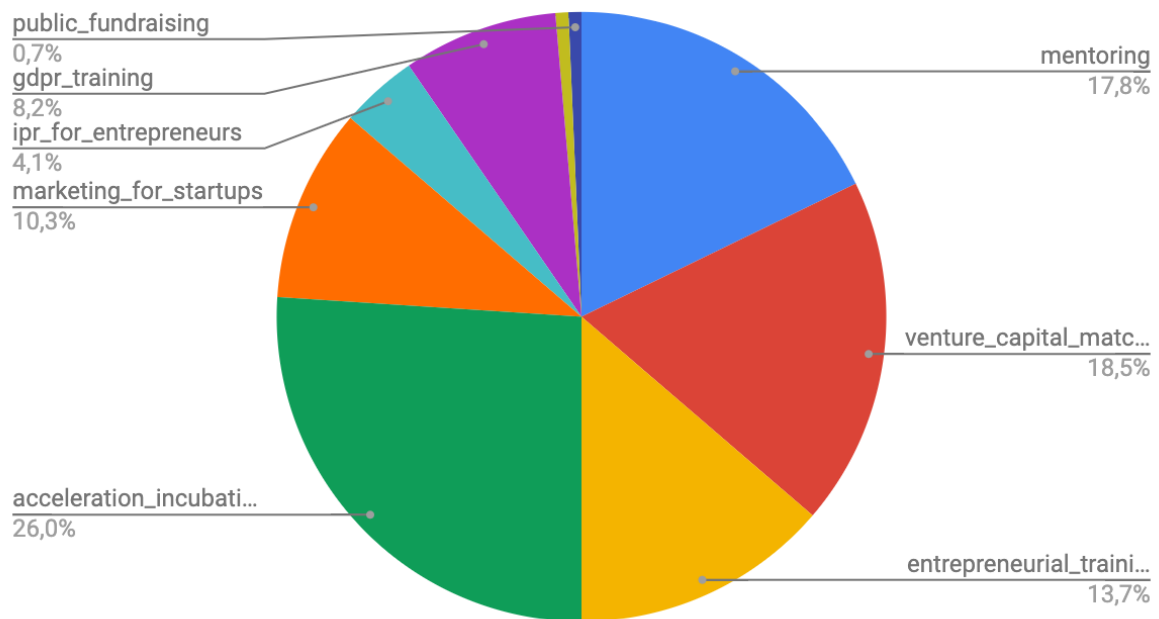


Figure 2: Second choice of applicants

4.2 Service uptake and feedback

In this section we outline the main indicators of DMS services uptake, and the highlights of the feedback provided by the participant SMEs and startups of the first round of the project.

This analysis is classified by service mode of delivery: webinars, courses, mentoring, live training, and participation in events.

4.2.1 Webinars

Webinar was the most common mode of delivery in the first DMS cohort. The programme delivered 28 webinars distributed around four service categories: acceleration (14 webinars), fundraising (3), marketing (1), standards & legal (10).

Across all webinars, an average of 8 participant SMEs signed up for the webinars, and an average of 4.7 actually attended. Having in mind that there were 50 SMEs participating in the programme, the uptake could be considered rather low. However, there were several indicators showing that the participants who attended the webinars found them useful and interesting:

- The interest rating average in the webinars was 67.4% (70% is deemed as 'fairly good' by those who use these parameters). Interest rating is a formula created by the webinar platform provider, which includes factors such as the interactions via questions and comments during the webinars, and the proportion of the webinar time in which the attendant has had the webinar as its primary window.
- The attendee's ratings were high, averaging 4 in a 5-star rating system. These ratings consisted of three questions:
 - Did the webinar provide you with useful insights?
 - Was the webinar well organised?
 - How likely would you recommend this webinar to a friend or colleague?

4.2.2 Courses

The data skills service category was delivered through three online courses:

- A Data Science course including data management, analysis and visualisation with Python (6 weeks 60 hours)
- An Artificial Intelligence for Business course (6 weeks 60 hours)
- A data security and compliance course (8 weeks 16 hours)

The two first courses are cost-free bespoke versions of Southampton Data Science Academy online courses, currently offered commercially at the cost of around €1500. The commercial version of the courses has completion rates over 90%, and high learner/customer satisfaction rates.

The courses uptake by DMS participants was low, with an average of 8 participants. An average of 3 participants completed all activities of the courses. However, the satisfaction surveys displayed high ratings, with an average of 5 in a 5-star rating system. As with the case of the webinars, those who actually engage with the courses realised their high value.

4.2.3 Mentoring and live training

DMS provided individual mentoring to selected participants of the programme. The mentoring sessions covered the following topics:

- Public fundraising opportunities identification
- Venture capital Pitch-deck feedback (by sectors)
- Venture Capital 1 to1 meetings organization
- On-line B2B sales package
- Company validation
- Marketing Q&A line

The mentoring services were very well received by the participants. All those who requested mentorship received it. A total of 21 mentoring sessions were delivered to 10 different participant SMEs.

A survey was circulated to the mentees in each session, asking for feedback and ratings on the following aspects:

- Quality of the content
- Level of the organization of the session
- Quality of the delivery
- Openness to questions and discussion

The average rating was 4.5 in a 5-star rating scale. Again, the uptake could be considered as low, but those who actually engaged with this service, were highly satisfied.

The same is true for the live training sessions that DMS organised during the first run of the services: those who attended found it highly useful and reported having obtained direct benefits from their participation.

4.2.4 Attendance to events and networking

DMS provided SMEs with invitations to participate in relevant events for data driven SMEs such as the TNW'19 conference in Amsterdam, the South Summit in Madrid, and the Big Data Value forum in Helsinki. The uptake was not an exception from other services, only a few participant SMEs took advantage of these services. But again, participants who benefitted from them also reported high satisfaction in the surveys they completed.

4.3 Impact of DMS on SMEs

At the end of the first iteration of DMS, we circulated an impact survey to the SMEs of the first cohort. The aim of the survey was to determine the possible effects of DMS services on the business operations of these SMEs.

The survey contained 30 questions aligned with each of the services provided in the DMS programme. A pdf document with these questions can be accessed [here](#).

13 SMEs completed the survey, providing useful and fine-grained information about the possible benefits of having participated in the DMS programme. We should emphasise that the questions were made in relation to the time period when the SMEs joined the programme, as it would be impossible to tell whether having joined DMS was the direct cause of any change experienced, for example, a growth in revenue. Having clarified that, the survey provided the following highlights:

- Around a third of the SMEs reported an increase in their revenue, of an average of 90% increase. However, there is no evidence to attribute this to their participation in DMS.
- Around two thirds of the SMEs reported a team growth, with an average of one new position created since joining the programme. Again, it cannot be demonstrated that this growth is due to their participation in the programme.
- Around a third of the SMEs reported a change in their gender composition, with a slight increase in the percentage of female members.
- Around a third of SMEs reported having been able to gain additional funding since joining DMS. At least three of the matches with investors were directly facilitated by DMS.
- Approximately 20% of the companies registered patents, trademarks and designs. DMS provided 1 to 1 intellectual property mentoring to some of the SMEs who made IP related registrations.
- Nearly two thirds of the SMEs reported having gained new clients, and about a quarter of them have created new business leads (potential clients, potential new partners, potential investors). Many of these SMEs have reported in further testimonials that their participation in DMS may have had a role in this increase.
- Most companies have reported that their staff gained skills on data management, securing and complying with data, business development, and marketing and sales. Unlike the rest of the above-mentioned aspects, participants attributed this gain of skills to the DMS program.

The participants of this survey also provided positive testimonials about the effects of their participation in the programme. In fact, there was a unanimously positive response when they were asked whether they would recommend participating in it. However, it should be noted that this survey was completed by SMEs who had an active and continuous engagement with the programme. The sample (about a quarter of the first

cohort of DMS) was therefore slightly self-selective. It could therefore be concluded that those who fully engaged with the programme extracted value from it.

5 Lessons learned

The DMS consortium extracted a great deal of useful insights from the first cohort of services provision. In order to obtain a structured account of the lessons learned by all partners, the monitoring and analysis work package leader of the project led a workshop and engaged in a series of conversations with each of the consortium partners. A detailed account of the outcomes of the workshop as well as the conversations with partners can be found [here](#).

DMS experience of having delivered a year worth of services provided the following challenges to be taken as lessons to learn:

- SMEs are prone to have difficulties to find time to engage with the kind of services provided by DMS, hence the rather low engagement figures. However, once they engage, they realise the value of the services.
- The selection of applicants from open calls needs to be carried out with a process that provides fine grain details of the applicant's needs, and their potential to engage with the services so that they can benefit from them. This is important to ensure that the selected applicants are those who will make the most of the services provided.
- Generic services are unlikely to return high engagement figures. Services need to be as personalised and tailored as possible, otherwise it is too easy for beneficiaries to disengage.
- Service recipients need to allocate resources to engage with the services, especially in the form of staff time. Service providers need to anticipate time constraints of the service recipients by careful planning, allowing certain flexibility in the timelines of the service provision, and an accurate alignment with the recipient's needs.
- It is of paramount importance that service providers and recipients maintain continued communication streams before, during, and after the services provision periods. Different communication methods need to be constantly used, such as email communications, newsletters, social media communications, and surveys. These communications need to be followed up and monitored in a structured manner. Failing to do so can lead to SMEs disengagement, as urgent business tasks and operations can interrupt the flow of the services provision.
- Services involving networking such as participation in events and investors matchmaking are highly appreciated and uptaken. Conversely, services involving long-term benefits such as upskilling on data, IP and data protection compliance (GDPR) are more difficult to be uptaken, although all recipients acknowledge their importance. Therefore, more emphasis and support needs to be devoted to the latter type of services.

The above points are the main lesson learned by the DMS consortium, but these apply to the broader European data SME ecosystem, and are transferable to any other projects and ventures that aim to support this kind of companies. As such, these points can be

taken as recommendations for an optimal provision of acceleration services to data-driven SMEs.

5.1 DMS amendments based on lessons learned

After a thorough analysis of participants' engagement with DMS services in the first cohort, the DMS consortium decided to make a set of amendments on the service provision for the second cohort. These consist of a more fine-tuned selection process, a better alignment of the services, a set of actions to enhance the personalisation of those services, and the breakdown of some services into smaller pieces.

5.1.1 Selection process

In order to select the most likely participants to extract maximum value from the services offered, the DMS consortium redesigned the information package and the application form. The main aspects of the redesign were the following:

- The new application form requests a pitch deck to ease the partners' ability to evaluate applicants' suitability for the programme.
- In the application form, questions about diversity were rephrased in order to not deter applicants with low gender balance, especially in cases of SMEs with reduced staff.
- The application form contains more open-ended questions for partners to have a more nuanced view of how the applicant can potentially engage with and benefit from the services provided.
- The information package was redesigned, now including success stories in audiovisual formats, so that applicants can better realise the value of the services offered.

5.1.2 Services alignment

Different modes of delivery were aligned, such as mentoring and webinars in thematic areas: the different service categories (fundraising, promotion, training, standards & legal) will be delivered within the same periods, both for mentoring and webinars. For example, mentoring services about fundraising will be closely followed by a webinar about fundraising. This way it is expected that SMEs are serviced in a more personalised and tailored fashion, which in turn will enhance the engagement of the start-ups via a better understanding of when specific services are delivered.

5.1.3 Services personalisation

The DMS consortium has carried out three main actions to enhance the personalisation of the services: the inclusion of circulation of a survey to the selected companies prior to the provision of the services, the inclusion of new types of personalised services, and the allocation of personal mentors to the SMEs throughout the whole programme.

- The survey contains further questions to those asked in the application form. These questions are more detailed and specific to the services to be provided, and the answers to these questions will influence the way the services will be delivered.
- The new types of personalised services will be delivered to selected SMEs, based on the results of the above-mentioned survey.
- The participant SMEs will be allocated a DMS partner who will act as coach across all the programme throughout its whole duration. The results of the above survey will also determine who will be this personal partner, aligning the area of expertise of the coach with the needs of the specific participant SME.

5.1.4 Services breakdown

In order to ensure more engagement from the SMEs, some of the services have been broken down into smaller pieces, with the aim of making them more specific to the SMEs' needs. For example, the data skills services consisted of courses with several modules. These modules have been split, and the second cohort will be able to enrol to specific modules in line with their interest. An example of this is a data science course that covered data management, data analysis, and data visualisation. These three aspects will now be covered separately, allowing participants to uptake only those that are more interesting to them.

6 Conclusion

In this document, we have shared the experiences of an exciting journey, in which we have had the privilege to work with 50 enterprises who are sketching the present and future of the European data ecosystem and digital economy. We have learned a great deal of lessons from these forward-thinking companies, and this process has equipped us with valuable knowledge that we will use to provide high quality acceleration services to two more cohorts of 50 companies each.