Update of the European Data Market
SMART 2016/0063

Story 3 – Data Monetisation

10th October 2018
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<thead>
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Executive summary

How can companies and organizations generate revenue from data? To respond to this query, this paper combines literature review, desk research and a series of in-depth interviews with representatives of companies and organizations that aim at increasing their existing incomes (or making new ones) from the data that they generate and/or have access to.

Constant advances in the process of digital transformation are putting a growing number of companies in the position to use, re-use and exchange data to generate growth. As a result, while still in its infancy, data monetisation already constitutes a powerful means to generate additional revenues by using data to add new services to existing offerings, developing new business models, and even directly selling data-based products, services or utilities.

The research identifies three primary paths towards realizing that value for data:

1. Direct revenue from data sale/licensing;
2. Additional revenue from bundling data with other services or products;
3. Exchange premiums/trade advantages or discounts.

The first path to data monetisation (Type 1) is revenue generated directly from data sales or some form of data licensing. This is notably the case of companies in the information services industry, such as credit bureaus, which collect data about people or organization and then sell the credit ratings as a service. Type 2 (Additional revenue bundled with other solutions) is obtained when a service provider (e.g. a software provider) combines its “regular” solution with additional value-added services. Exchange premiums or trade discounts (Type 3) does not entail net-new revenue for the data. Instead, something else than money is exchanged.

While certainly helpful form a theoretical perspective, the case-studies featured in this paper unveil a rather more complicated situation in Europe.

- **A clear-cut form of data monetisation is hard to find.** In fact, a data exchange resulting in the creation of straight revenue streams for data holders as a result of a direct sale (Type 1), or in the form of additional revenue in conjunction with the offering of other services (Type 2), does not appear to be very common in Europe today.
- **Benefits such operational efficiency, cost optimization, and enhanced quality seem to prevail vis-à-vis data monetisation per se.** Indeed, the case studies reveal the prominence of indirect benefits such as operational efficiency, cost optimization, enhanced quality obtained through the data sharing rather than the generation of direct revenue streams.
- **Platforms are the preferred means to perform and enable data monetisation.** Buyers and sellers of data rarely connect directly. A technical platform in the form of a data marketplace or a simpler solution such a website is usually preferred to exchange and monetize data.
- **Medium to large companies are at the forefront of data monetisation.** While certainly open to all sorts of companies, the services offered by most platforms enabling data sharing, and hence data monetisation, appear to be used primarily by medium to large companies.
- **Wide differences in digital maturity, uncertainty surrounding data access rights, persisting risks related to data privacy and lack of data skills still hamper the development of data monetisation.** What is more, differences in digital maturity across industries (for example, financial services and retail on the one hand and education and public sector on the other hand) represent a serious obstacle to the development of data monetisation practices.

Based on this analysis, there is room for policy intervention. A few, preliminary conclusions can be summarized as follows:

1. **Raise awareness about the advantages offered by data monetisation.**

Data holder and supplier companies alike, and in particular SMEs, need to become more aware of the opportunities offered by their data in terms of new revenue generation, additional income obtained in conjunction with the offering of other solutions and possible premiums or other
forms of business advantages that can be achieved by sharing their data with other organizations. Data re-users, on the other hand, need to better understand the advantages of acquiring data from other companies for their internal usage (to improve productivity, better manage costs, and enhance customer relationships) or with the aim of creating brand new business opportunities.

2. Create a trusted environment around data monetisation.

The case studies demonstrate that extra-efforts in user-friendly data exchange mechanisms, confidentiality, licensing and pricing agreements and, not least, clarity on data access rights, help build trust between data holders and data re-users thus fostering new possibilities of data monetisation.

3. Improve clarity on the legal framework affecting data monetisation.

While a lot has been done to enhance data protection and privacy in electronic communications and to remove restrictions pertaining to non-personal data, most of the interviewed companies seem to have little knowledge about these efforts and indicate a lack of legal clarity regarding data ownership rights and/or about what can be lawfully done with datasets (usage of data), or again the difficulty in understanding/meeting the legal requirements on data protection in B2B transactions as the main reasons for not fully engaging in data monetisation exchanges. As companies cherish contractual freedom and direct bilateral agreements, awareness-raising measures, voluntary schemes, non-legislative interventions and enhanced regulatory guidance are likely to produce beneficial effects.

4. Increase funding for SMEs to engage in data monetisation.

The case studies featured in this research indicate the lack of financial resources as one of the main hindrances to data monetisation practices, especially for SMEs and micro companies. To allow this fundamental sector of the European economy to fully benefit from data monetisation, additional funding and ad-hoc investment measures are needed. Indeed, the companies interviewed in this research, and other studies on data-sharing in the B2B environment pointed to the limited available financial resources as one of the key obstacles for European companies to effectively monetise data. SMEs in particular could greatly benefit from targeted financial aid aimed at scale up data sharing technical solutions or help companies to invest in marketing solutions and communication activities to increase awareness among potential data users.

5. Extend research on data monetisation.

Data monetisation may take several forms, evolve towards additional practices not yet known, and provide extra benefits not yet considered. More research on data monetisation mechanisms at play in other parts of the world, especially in the United States, Japan but also in China and India, could be beneficial to help the European data economy grasp new opportunities related to data sharing and monetisation.
1. Introduction

The Digital Single Market (DSM) Strategy, which was adopted by the European Commission in May 2015, aims to ensure access to online activities for individuals and businesses under conditions of fair competition, consumer and data protection, removing geo-blocking and copyright issues.

The booming adoption of Big Data, Analytics, IoT and other data-related technologies is already developing a global ecosystem of infrastructures and services enabling the target, collection, storage and processing of personal data. For instance, consumers’ data are largely processed by global market players in the advertising, tourism and travel industries. Indeed, Google and Facebook are the largest beneficiaries from ads; their reliance on the use of personal data and thus advertising is evident, with Google and Facebook producing 90% and 95% of their revenues respectively from advertising in 2015.1

While significant progress has been made in the field of access for consumers and businesses to digital goods and services across Europe, action is needed to tackle restrictions on the free movement of data for reasons other than the protection of personal data within the EU. The Free-Flow-of-Data (FFoD) initiative2 has therefore been devised to boost the EU data economy by removing any unjustified restrictions on the geographical location for storing or processing data. In April 2018, the European Commission has adopted the third Data Package3 addressing the issue of access to private sector data for public interest purposes (proposal for a review of the PSI directive), the access to scientific information (recommendation on access and preservation of scientific information) and proposing additional guidance on sharing private sector data. This, together with the entering into force of the General Data Protection Regulation (GDPR), contributes to a coherent set of rules that cater for free and easy access to different types of data.

Under these framework conditions, an increasing share of companies and organizations are now in a position to use, re-use and exchange data to generate growth. As a result, while still in its infancy, data monetisation already potentially constitutes a powerful means to generate additional revenues for those companies and organizations that are better able to harness the benefits of digital transformation and that can therefore use data to add new services to existing offerings, developing new business models, and even directly selling data-based products, services or utilities.

1.1 Main objectives and scope

The aim of this “story” is to investigate how companies and organizations create and measure economic benefits by leveraging data generated through business operations, publicly available data or data collected via electronic devices and sensors (i.e. IoT). Through extensive desk research and a series of in-depth interviews, the story aims at:

- Providing a better understanding of data monetisation today and define data monetisation practices within the overall framework of B2B data sharing;
- Understanding how companies approach data monetisation in Europe today and identify the main types of data monetisation practices;
- uncovering the underlying benefits that companies achieve by monetizing data and identify the main hindrances to a further development of data monetisation;
- Propose a preliminary set of policy conclusions to support data monetisation efforts in Europe.

1 European Commission, Digital Transformation Monitor Big data: a complex and evolving regulatory framework, January 2017


1.2 Methodology and structure

The underlying research question informing this story is: How can companies and organizations generate revenue from data? To respond to this query, the paper combines literature review, desk research and a series of in-depth interviews with representatives of companies and organizations that aim at increasing their existing incomes (or making new ones) from the data that they generate and/or have access to.

Literature review and secondary research helped shedding light onto the overarching phenomena of data sharing and data re-use within which the essence of data monetisation occurs. To this effort, five in-depth interviews were added with the ambition to develop real-life case studies and examples providing fact-based evidence on the phenomenon of data monetisation in Europe today. Table 1 presents an overview of the interviews carried out for the realization of this document. It has not been possible to draw direct information from one of the interview as the company (Bosch) was not willing to publicly disclose the content of the interview.

Table 1 – In-Depth Interviews with Data Companies and Organizations

<table>
<thead>
<tr>
<th>Company/Organization</th>
<th>Industry/Sector</th>
<th>Country</th>
<th>Description</th>
<th>Interviewee(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAWEX</td>
<td>Information Technology / Start Up</td>
<td>France</td>
<td>Data marketplace where organizations meet, buy and sell data, directly and securely.</td>
<td>• Didier Navez (VP Strategies and alliances); • Laurent Lafaye (co-founder); • Fabrice Tocco (co-founder)</td>
</tr>
<tr>
<td>Pirelli</td>
<td>Manufacturing</td>
<td>Italy</td>
<td>Multinational tyre manufacturer</td>
<td>• Carlo Tornai (Head of Data Science and Analytics)</td>
</tr>
<tr>
<td>TIS (Transport for London)</td>
<td>Local government / Transport</td>
<td>U.K.</td>
<td>Local government body responsible for the transport system in Greater London,</td>
<td>• Rikesh Shah (Head of Commercial Innovation)</td>
</tr>
<tr>
<td>BT (British Telecom)</td>
<td>Telecommunications</td>
<td>U.K.</td>
<td>British multinational telecommunications holding company</td>
<td>• Yousaf Hafeez (Head of Business Development at BT Financial Technology Services)</td>
</tr>
<tr>
<td>Bosch*</td>
<td>Automotive parts, power tools, security systems, home appliance, engineering, electronics, motorized bicycle motors</td>
<td>Germany</td>
<td>Multinational engineering and electronics company</td>
<td>• Patrick Ackerer (Bosch Software Innovation)</td>
</tr>
</tbody>
</table>

Source: IDC, 2018

*Not disclosable at the request of the interviewee.
The current document is structured along three main sections.

- The first section (chapter 2) introduces the concept of data monetisation under the context of the wider phenomenon of data sharing in Europe. It describes how data monetisation practices are currently implemented in Europe today and provides some elements as to the size of the phenomenon and obstacles faced by European companies engaging in data monetisation.

- The second section (chapter 3) is devoted to an overview of the real-life case studies that formed the bulk of the primary research underpinning this story.

- The final section (chapter 4) the main lessons learnt from the case studies and provide a few conclusive remarks with possible policy directions in the years to come.
2. Data Monetisation – An Overview

2.1 The broader Context: Data sharing

The concept of data monetisation is to be apprehended within the broader context of data sharing between companies (B2B Data Sharing). Indeed, a key constituent of the “data market” as defined and analyzed by IDC and the Lisbon Council is the exchange of data between organizations producing and holding data (data supplier companies, representing the supply side of the market) and organizations using or re-using data (data user companies, representing the demand side of the market). This data exchange between data suppliers and data users is at the core of B2B data sharing, that is the exchange of data resources with multiple applications or users in different organizations.

While B2B data sharing is usually understood as comprising both the supply and the demand side of data exchange, a further distinction between the companies that make data available and those that are granted access to data can prove of help in the analysis. In a recent study authored by Everis, ‘data sharing’ is linked to the data supply side, namely the companies that generate or store data and exchange them to other companies, “either for free or against some kind of remuneration or compensation, including economic or in kind”. The demand-side, i.e. companies that access data from other companies, is instead defined as “data re-use”.

This distinction is beneficial as it allows data-monetisation to be analyzed under the framework of data sharing as directly referring to the supply-side part of the data exchange. Indeed, B2B data sharing (referring to supply of data) appears to be well established in Europe, although still a relatively recent phenomenon. According to the main results of the study though, companies that make available their data do engage in a panoply of other activities and continue to derive the bulk of their revenues from businesses that are not in direct relationship with data exchanges. While European companies are indeed making their data available and actively contributing to Europe’s data economy, B2B data sharing’s potential is not fully exploited yet both in quantitative terms (companies – mainly large enterprises - share only a minimal part of the data that they generate and do it with a very restricted number of other companies) and in industry terms (companies share data primarily with organizations belonging to their own sector, industry or supply-chain ecosystem). In other words, European companies are definitely engaged in B2B data sharing – and in data monetisation with it – but the extent and future development of the phenomenon is heavily affected by the actual business strategy of the involved organizations, the sector they belong to, their actual size and by the business benefits that the involved organizations perceive and obtain in the exchange.

2.2 What is Data Monetisation?

The very concepts of Data Economy and Data Market rest on the idea that data is a “production factor” just as land, labour and capital. Data are therefore considered as a valuable asset adding value to a company’s (or group of companies’) value chain. IDC sees two types of value chains for deriving value out of data. Figure 1 illustrates the chain of logic from treating data as a valuable asset to examining where the value is realized to the ultimate end of recognizing how that value is measured. All of the boxes in blue are internally facing reference points. These are long-standing activities related to improving data management, governance, and internal decision making. The second value chain (green) is externally facing, and this is where data monetisation occurs.

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4 The European Data Market Study (SMART 2013/0063); Update of the European Data Market Study (SMART 2016/0063), ongoing.
5 Study on data sharing between companies in Europe (SMART 2016/0087), April 2018
7 Final Report, page 60-62
9 "Data Monetisation“ and “Data as a Service” — What Do They Mean?”, IDC Perspective, February 2018
In fact, for most companies, the data produced along the value chains are being used internally to improve productivity, better manage costs, and enhance customer relationships. Data monetisation is fundamentally different. It shifts the focus from putting data to use internally to creating new revenue externally.

While the easiest measurable form of monetisation occurs when a data service or data-enhanced product is sold, monetisation also manifests itself through discounted pricing arrangements (e.g., a business receives a discount on the purchase of IoT-enabled industrial goods when it agrees to provide the seller with data from the devices). There are therefore three primary paths towards realizing that value for data:

1. Direct revenue from data sale/licensing;
2. Additional revenue from bundling data with other services or products;
3. Exchange premiums/trade advantages or discounts.

The first path to data monetisation (Type 1) is revenue generated directly from data sales or some form of data licensing. This is notably the case of companies in the information services industry, such as credit bureaus, which collect data about people or organization and then sell the credit ratings as a service. Type 2 (Additional revenue bundled with other solutions) is obtained when a service provider (e.g., a software provider) combines its "regular" solution with additional value-added services. For instance, human capital management systems now offer the option to include workforce demographic, time and attendance, system usage etc. as an add-on service with the human capital management software itself. Exchange premiums or trade discounts (Type 3) does not entail net-new revenue for the data. Instead, something else of value is exchanged. As an example, producers of consumer goods may offer retailers discounts if the retailers will provide point of sale data and other customer information.

A company may choose to monetize its data along more than one path — to either serve different clients or work with different data sets. Indeed, there are situations where it may not make sense to charge a fee for access to the data service. In a case where the data service is being offered to existing customers, a company may decide to offer a data service in pilot mode to better judge the value perceived by customers. Or, a company could also decide that offering free data service is a strategic move that ties customers to its current offerings and raises the cost of switching vendors.

Table 2 below provides a summary of the three types of data monetisation identified by IDC and a few generic examples.

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10 IDC PlanScape: Data Monetisation, IDC Planscape. March 2018
**Table 2: Types and Examples of Data Monetisation**

<table>
<thead>
<tr>
<th>Types of Data Monetisation</th>
<th>Examples</th>
</tr>
</thead>
</table>
| 1. Direct revenue from data sale/licensing | - Credit report services provided by credit bureaus to companies that extend credit  
- Enhanced customer information provided by information service company to wholesale or retail supplier |
| 2. Additional revenue/value bundled with other solutions | - Compensation benchmark information sold with human capital management systems  
- Comparative purchase price data bundled with procurement software  
- Live geolocation data with shipping service |
| 3. Exchange premiums/trade discounts | - Retail sales data shared with goods producer in exchange for price discounts  
- Use of crop management software platform in exchange for providing crop yield data  
- Industry information clouds, where all contributors get access to peer data, which they would have had to pay for otherwise |

### 2.3 Data Monetisation in Europe Today

Sharing data across companies with the aim of generating new or additional revenue streams is still in an early stage. Yet, research-based evidence suggests that an increasing share of companies is using information and analytics to monetize data and generate growth. At the end of last year, McKinsey & Company conducted a survey\(^\text{11}\) across 530 C-level executives and senior managers representing a full range of industries and company sizes worldwide. The results revealed that the primary objective of the respondents’ data-and-analytics activities was to generate new revenue. As such, data monetization was seen as one of the key ways to create new revenue streams but appeared to be fairly new - of the 41 percent of respondents whose companies have begun to monetize data, a majority responded that they began doing so just in the past two years. The results also highlighted considerable differences among industries: more than half of the respondents in basic materials and energy, financial services, and high tech reported their companies to have begun monetizing data. What is more, a correlation was visible between industry-leading performance and data monetization practices. Indeed, respondents in high-performing companies\(^\text{12}\) were more likely to have started monetizing data in more than one way, including adding new services to existing offerings, developing entirely new business models, and partnering with other companies in related industries.

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\(^{11}\) “Fueling growth through data monetization”, McKinsey & Company, December 2017  

\(^{12}\) Defined as organizations with annual growth rates of 10% or more for both organic revenue and earnings before interests and taxes (EBIT) over the past 3 years.
industries to create pools of shared data (Figure 2 – left-hand graphic). Perhaps unsurprisingly, high performers also see a top-line benefit: they are three times more likely than others to say their monetization efforts contribute more than 20 percent to company revenues (Figure 2 – right-hand graphic).

**Figure 2: Ways to create new businesses through data monetisation and contribution of data monetisation to total revenues**

<table>
<thead>
<tr>
<th>Ways in which organizations have created new businesses to monetize data</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding new services to existing offerings</td>
<td>78</td>
</tr>
<tr>
<td>Developing entirely new business models</td>
<td>45</td>
</tr>
<tr>
<td>Joining with similar companies to create a data utility (i.e., shared data mart where companies pool related data)</td>
<td>29</td>
</tr>
<tr>
<td>None of the above</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contribution of data monetization to organizations' total revenues</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;20%</td>
<td>17</td>
</tr>
<tr>
<td>11%–20%</td>
<td>15</td>
</tr>
<tr>
<td>1%–10%</td>
<td>30</td>
</tr>
<tr>
<td>&lt;1%</td>
<td>19</td>
</tr>
<tr>
<td>Don't know/ not applicable</td>
<td>11</td>
</tr>
<tr>
<td>All others, n = 153</td>
<td>49</td>
</tr>
</tbody>
</table>


Europe may not share the same enthusiasm vis-à-vis data monetisation but is rapidly catching up. Earlier this year, IDC conducted a study and a survey on IoT in Europe. As a key source of data that are constantly and increasingly exchanged, the study shed some light onto data monetisation as well. For example, when asked about the key factors driving European companies to invest in IoT today, only one fifth of the respondents mentioned the creation of new revenue streams (i.e. Type 1 and Type 2 of our data monetisation categorization above) as a possible driver (see Figure 3 below).
In the already quoted study conducted by Everis, the majority of the interviewed data supplier companies (approximately 40%) indicated that they shared data for free to a specific group of users and with no or little restrictions - a mild form of open data policy in action – while another 8% opted for a true open data policy (i.e. sharing data for free to a wide range of users with no or little restrictions, 8%). Interestingly, though, a total of 58% adopted some sort of remuneration to share data with other companies thus indicating that monetising data is becoming one of the key reasons behind the data exchange. Nor is the amount of revenue generated by the data exchange appears to be particularly high (see Figure 3 below).

Table 3 Conditions to share data

<table>
<thead>
<tr>
<th>Conditions under which data are shared with other companies</th>
<th>No. responses</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>For free to a specific group of users and with no or very little restrictions</td>
<td>20</td>
<td>40%</td>
</tr>
<tr>
<td>Compensated by the provision of a service on a basis of individually negotiated conditions</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>Remunerated to a group of users on a basis of individually negotiated conditions</td>
<td>14</td>
<td>28%</td>
</tr>
<tr>
<td>Remunerated to a wide range of users on a basis of fair and non-discriminatory conditions</td>
<td>9</td>
<td>18%</td>
</tr>
<tr>
<td>Remunerated and on an exclusive basis through individually negotiated conditions</td>
<td>6</td>
<td>12%</td>
</tr>
<tr>
<td>For free to a wide range of users and with no or very little restrictions (“Open Data”)</td>
<td>4</td>
<td>8%</td>
</tr>
</tbody>
</table>

Indeed, when asked about the actual income possibly generated by data sharing practices, the majority of respondents (34%) indicated an amount lower than € 5,000 as a yearly average of earnings derived by some kind of remunerated data sharing followed by some 24% reporting earnings between € 5,000 and € 50,000 and 22% with earnings of more than one million Euros (see Figure 4 below). These figures need to be taken with caution due to the limited size of the sample and the difficulty displayed by the respondents in providing exact revenues generated by data sharing activities.

Nevertheless, a comparison between the average annual income from B2B data sharing and the total revenues generated by the companies taking part to the survey might shed some additional light (see Figure 5 further below). In fact, the majority of the companies earning more than 1 million Euros from B2B data sharing activities are making more than 100 million Euros as their total revenue and are to be considered _de facto_ as large companies. Figure 5 shows the comparison between the average annual income of data suppliers from their data sharing activities and their total revenue in the past three years revealing, not surprisingly, a direct relationship between the proportion of companies engaging in B2B data sharing and the total revenues generated by the organizations under consideration.
Figure 4 Average annual income of data suppliers resulting from B2B data sharing activities during the last three financial years

Source: Study on data sharing between companies in Europe (SMART 2016/0087), Everis, April 2018. Page 43

Figure 5 Comparison between average annual income from B2B data sharing activities and the company’s total revenue (the percentage indicated is a proportion of the total number of data suppliers)

Source: Study on data sharing between companies in Europe (SMART 2016/0087), Everis, April 2018. Page 43
2.4 Obstacles to Data Monetisation

If the income generated by data monetisation may not represent a primary source of revenues yet is because the overarching phenomenon of data sharing encounters several obstacles in its possible future development path.

Technical obstacles such as interoperability barriers, security barriers and infrastructure costs stand out as the primary hindrances to B2B data sharing according to the Everis study\textsuperscript{14}. This is coupled by the legal uncertainty surrounding data access rights and by the difficulty to understand the legal requirements on data protection in B2B data sharing, especially with regards to the type of data that can be shared and the costs that could be associated with the necessary anonymisation and aggregation processes. Together with data protection requirements, additional restrictions introduced by EU legislation on data privacy (better: the lack of understanding thereof) may also constitute a potential legal barrier to full data sharing practices in Europe. Moreover, monitoring difficulties (that is difficulties in controlling what others can do with data), lack of appropriate skills and localization restrictions in place, such as national legislations or other regional practices that limit the geographical extent of the data exchange can negatively affect the ability of many European companies to fully engage in data sharing practices and, as a result, in exploiting the advantages of data monetisation.

That said, one third of the companies that are currently not sharing data see a possibility for engaging in B2B data sharing within the next five years according to the same study\textsuperscript{15}. What is more, those companies that are likely to engage in B2B data sharing in a near future appear to realise that this activity may bring benefits to their company, including possible additional revenues from data monetisation practices\textsuperscript{16}. On the other hand, IDC predicts\textsuperscript{17} that by 2021, 40% of European IoT projects will create opportunities for new revenue streams and business optimization by monetizing data. The path is therefore set and it is unlikely to be reversed but policy action is needed to accelerate the trend.

\textsuperscript{14} Study on data sharing between companies in Europe (SMART 2016/0087), April 2018. Page 74-78
\textsuperscript{15} Ibidem, page 44-45
\textsuperscript{16} Ibidem, page 45.
\textsuperscript{17} European IoT: What to Expect in 2018, IDC Presentation, February 2018
3. The Case Studies - What We Found So Far

As specified in section 1.2 and table 1 above, the present story was developed through ad-hoc desk research and five in-depth interviews that were conducted among different companies in sectors ranging from information technology to manufacturing, local government, telecommunications and engineering. One company did not provide the consent to disclose the information collected during the interview. As a result, the story does not feature a specific case study for this company but makes use of its content in the analysis of the main findings and in the drafting of the preliminary conclusions.

This section provides an overview of the case-studies that were developed from the interviews as well as an initial analysis of the findings obtained through this primary research effort.

3.1 Case Studies’ Overview

DAWEX

Founded in 2015, Dawex is a France-based data marketplace that operates worldwide connecting companies with the end goal of selling and buying data. Over the years, Dawex has expanded its operations to a wide array of industries, from automotive, to energy, from agriculture to retail, healthcare and, more recently, financial services. The company applies user-friendly technical solutions to ease the process of selling and buying data. Data can be shared using different formats, particularly those that can be easily accessed utilising standard enterprise software, or through Dawex API.

In little more than two years, Dawex has managed to progressively enlarge its data offer in distinct sectors and to get 2,000 companies on board of their platform, of which 45 % are based in Europe (with a majority of them in France), 38 % in the United States, and the remaining 17 % in other countries (mostly based in Asia).

The value of data and the actual price of the transaction is estimated by data suppliers and is to be agreed with the data buyers. In principle, the data point price is established without the marketplace’ intervention and depends on a multitude of factors, including “age” and “history” of data. The platform, however, has an option to ask for help if data suppliers are find it difficult to propose an opening price for their data. In this case, Dawex can assist in different ways, for example by estimating the price of a survey for a company to collect the same data the data supplier wishes to share through (i.e. sell on). For its services, Dawex’ business model is based on a transactional-based revenue formula. The company makes profit from the data transactions between data suppliers and users – it can request a per-transaction percentage commission, a subscription, or a set of variable fees based on optional services.

Some additional figures regarding Dawex (year of reference: 2017)

- 2,000 registered companies;
- 200 of those companies generate over $1 billion (approximately more than € 870 million) in sales revenue;
- + 2,300% more registrations in 1 year;
- 23 different activity sectors;
- 60 countries;
- + 40% per month matching data supply / data demand;
- User portfolio: 60% buyers / 40% sellers

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18 Study on data sharing between companies in Europe (SMART 2016/0087), April 2018.
PIRELLI

Pirelli – one of the largest tyre manufacturers worldwide, headquartered in Italy - established its first Data Science and Analytics unit in 2016 combining huge and ever-increasing amount of production line machines data with wider in-house data ecosystem (research labs, test tracks, suppliers, customers, weblogs, social media) to increase efficiency.

The biggest source of data for Pirelli’s Data Science and Analytics unit rests with the production line machines. They measure the operational parameters for tyre-making along with the quality of the product throughout the cycle. Armed with this information, the company can build predictive models that can revealing in real time the expected quality of a tyre, based on how it is made. With this, Pirelli can move from predictive to prescriptive models and actually suggest corrections in the parameters of the machines during the production process, as well as in the deployment of individual machines, to create the best quality and efficiency. The system will "learn" each time it makes a change and as a result the process will be continually improved.

In 2017, Pirelli officially launched the Connesso system, a digital connected platform that continuously collects and tracks data from tyres on the road. This provides drivers with constant updates on their tyres’ status, while allowing fleet managers to enhance replacement scheduling and efficiency optimization. Pirelli Connesso is an integrated tyre platform which connects via an app interface with the driver providing key information and real time data about pressure and temperature, use and maintenance of every tyre, whilst offering localised and personalized services to provide bespoke mobility and a more informed, safe, efficient and pleasurable driving experience. Connesso creates a network of consumers and the sales centres: the Pirelli system can integrate with other smartphone applications and complement the device by providing new contents and functions. In the future, the Connesso app will be able to notify the driver of motorsports events in the area and provide the opportunity to review workshops and share opinions on the received service with other Connesso community users.

The business model behind the Connesso platform is a pay-per-use fee: the driver pays to access the data obtained by its car and to use the value-add services provided by Pirelli. Little is revealed in terms of actual fees and revenues generated by the platform. Pirelli’s latest half-year financial report though states that “the [company’s] EBIT margin adjusted without start-up costs attested itself at 18.0%, a growth of +1.5% compared to the previous financial year. Start-up costs which equalled euro 23.2 million (euro 26.8 million the previous financial year) were relative to new businesses (Velo and Connesso), to the conversion of Aeolus brand production into Pirelli brand production in the manufacturing plant in Jiaozuo for the Car sector, and to activities for the digital transformation of the Company”19. Considering that Connesso is a recently launched venture, the expectations to obtain significant revenue streams in the near future are substantial.

TRANSPORT FOR LONDON (TfL)

Transport for London (TfL) is a local government body responsible for the transport system in Greater London. TfL has responsibility for London’s network of principal road routes, for various rail networks including the London Underground, London Overground, Docklands Light Railway and TfL Rail, for London’s trams, buses and taxis, for cycling provision, and for river services. The underlying services are provided by a mixture of wholly owned subsidiary companies (principally London Underground), by private sector franchisees (the remaining rail services, trams and most buses) and by licensees (some buses, taxis and river services). The Directorate for Transport Innovation at TfL is responsible for delivering the London Mayor’s transport strategy, which involves creating value in the future mobility space from market innovators including start-ups, academics, transport operators, regional agencies, R&D organisations and corporations. This involves on-going engagement with this community, utilising the right procurement processes, developing the right culture and providing the right level of access to data and policy makers.

TfL does not have a strategy to directly monetise data but rather to provide cost saving through optimisation. This strategy is focused on three central tasks:

19 Pirelli SPA – Half Year Financial Report, 30th June 2018
a. Making data available through the TFL open Data Portal:

TfL has made over 30 data sets, including real-time travel feeds, available to developers via the TfL open-data website (https://tfl.gov.uk/info-for/open-data-users/) and the GLA London Datastore (https://data.london.gov.uk).

Some statistics include:
• Over 5,000 developers have registered for the open data
• Developers have created 700 apps
• 42% of Londoners are using Apps powered by TfL data
• New services are reaching millions of users.
• Nearly 500 third-party apps are now benefiting from TfL’s live open data.

All the datasets are free of charge for developers to use in their own software and services.

b. Partnerships with private organisations

TfL has directly worked with a wide range of professional and amateur developers, ranging from start-ups to global innovators, to deliver new products in the form that customers want. TfL will typically launch a challenge for data companies like reducing congestion in a particular area. It will then run hackathons and acceleration programs around these challenges. It works with small companies and start-ups as well as established companies in the data domain.

One example is the partnership with Amazon Web Services both to improve the agility and responsiveness of its own digital services, and to establish a third-party developer ecosystem (primarily of tech start-ups) that can leverage its openly-licensed travel data stream to build their own travel-planning applications for Londoners.

c. Provision of an Open API for data fusion and integration

TfL open data covers a wide variety of different quality, accuracy and data formats. In order to encourage users to use data has simplified access to this data by building a front-end unified API. Historically, the data from each dataset was shared with users in different formats and structures. This made the development of applications difficult as you will need to write code for and separately integrate each dataset. The unified API presents all the data that is semantically similar in the same format, enabling developers to develop one set of code which is able access all of the data quickly, making application development easier.

Available datasets include:
• Journey Planning (current and future)
• Status (current and future)
• Disruptions (current) and Planned works (future)
• Arrival/departure predictions (instant and web-sockets)
• Timetables
• Embarkation points and facilities
• Routes and lines (topology and geographical)
• Fares

TfL encourage software developers to use these feeds to present customer travel information in innovative ways - providing they adhere to terms and conditions but most of the data developed, collected or used by TfL is available as open data or through Open APIs and is free of charge.

However, TfL data has significant value added in comparison to the original raw data. It is filtered, cleaned elaborated with modelling tools which improve value in comparison with original

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raw open data sources. For example, Tesla is collecting real time information about road quality, obstacles and road works. It is expecting to sell this information back to PAs in the future, and TfL might expect to do the same types of things.

Advantages of TfL’s current approach can be summarized as follows:

- Saved time for passengers. TfL’s open data allows customers to plan journeys more accurately using apps with real-time information and advice on how to adjust their routes. This provides greater certainty on when the next bus/Tube will arrive and saves time – TfL estimates the economic benefit of this at between £70m and £90m per year.

- Better information to plan journeys, travel more easily and take more journeys. Customers can use apps to better plan journeys, enabling them to use TfL services more regularly and access other services. Conservatively, the value of these journeys is estimated by TfL at up to £20m per year.

- Creating commercial opportunities for third party developers. A wide range of companies now use TfL’s open data commercially to help generate revenue, many of whom are based in London. Having free and up-to-date access to this data increases the ‘Gross Value Add’ (analogous to GDP) that these companies contribute to the London economy, both directly and across the supply chain and wider economy, of between £12m and £15m per year according to TfL.

- Leveraging value and savings from partnerships with major customer facing technology platform owners. TfL receives back significant data on areas it does not itself collect data (e.g. crowdsourced traffic data). This allows TfL to get an even better understanding of journeys in London and improve its operations.

**BT RADIANZ**

BT Radianz is a business-to-business e-commerce company that provides IP networking and scalable connectivity to the global financial community. The company’s shared market infrastructure is a neutral platform that provides access to pre-trade, trade, and post-trade applications across the straight-through processing (STP) chain.

The company’s services help to do business in the capital markets while its platform is designed to bring together a networked financial community connecting customers worldwide. The platform allows customers to take propositions to market faster and execute trading options under secure conditions. For this reason, the platform follows a set of multi-layer security, intelligence, regulations and processes and does not allow public internet connectivity.

The portfolio includes the BT Radianz Cloud — the world’s largest secure networked financial community — that offers its members access to thousands of applications and services from more than 400 providers critical to the everyday running of the global financial sector. The Radianz Cloud allows fast, secure, reliable access to foreign exchange applications and services around the world including more than 40 FX trading venues. These venues allow financial services institutions to trade 99 per cent of currency pairs, for example USD/EUR (US dollars to euros), or GBP/JPY (pound sterling to yen). Furthermore, BT offers managed hosting in more than 20 data centres globally via its BT Radianz Hosting capabilities21.

In its essence, BT Radianz operates like a traditional data marketplace, but it is focused on the financial industry and on capital market clients. Capital market operators that subscribe to the platform can feed their data into the platform libraries – including derived data and internally generated data – and put them on sale or, conversely, search for and request data in and from the libraries.

The data that are more often exchanged and part of a transaction are:

- Expressions of interest
- Records of trades
- Sentiment analysis data (from the market, Twitter, etc) to predict trading movements

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• Credit card data, i.e. spending data

This data can be used internally to drive trading strategies or sold to third parties. The typical data sellers recurring to BT Radianz include the stock exchanges and investment banks; these entities may sell to data aggregators/disseminators like Reuters or Bloomberg, or to their customers, and other credit institutes.

As in the case of Dawex, BT Radianz does not intervene in the actual selling or buying of data between the subscribers of its platform, nor does it establish the price of the data. The company’s business model is based on a per-transaction fee or subscription fee paid by the subscribers of the financial community.

### 3.2 Common Themes and Findings across the Case Studies

While certainly not exhaustive and fully representative, the four case studies featured in this story allow for the emergence of a few common and overarching themes about the phenomenon of data monetisation.

**A neat and clear-cut form of data monetisation is hard to find.**

Data monetisation is part and parcel of the of the wider concept of B2B data sharing, whereby companies producing and holding data are willing to cede this data with companies wanting to re-use it. However, a data exchange resulting in the creation of straight revenue streams for data holders as a result of a direct sale (Type 1 of data monetisation according to our categorization in 2.2 above), or in the form of additional revenue in conjunction with the offering of other services (Type 2 of data monetisation), does not appear to be very common, at least in the case studies identified in this research.

Dawex and BT Radianz, for instance, constitute illustrative examples of different forms of data marketplaces that help the supply-side and the demand-side of the data market to get in contact, fine tune and technically allow for the data exchange but they do not participate directly in the data monetisation per se.

**Benefits such operational efficiency, cost optimization, and enhanced quality seem to prevail vis-à-vis data monetisation per se.**

In the case studies analysed during this research the stress appears to be primarily on indirect benefits such as operational efficiency, cost optimization, enhanced quality obtained through the data sharing rather than on the generation of direct revenue streams.

Pirelli Connessa, for example, seems to serve more the company’s needs of improving operations, production and maintenance process than the need to generate extra income. Transport for London opts for an open data API and even when it enters into partnerships with private organizations, it does so to establish a solid tech-based ecosystem not to obtain direct remuneration from the data exchange.

Despite this leaning towards non-monetary efficiency, optimization and quality, recent studies do unveil the existence of direct revenue streams related to data sharing practices. According to a recent survey carried out by McKinsey & Company, high-performer organizations (i.e. organizations with annual growth rates of 10% or more for both organic revenue and earnings before interests and taxes (EBIT) over the past 3 years) exhibit top-line benefit from the monetisation of their data, which can contribute to more than 20% to their revenues\(^\text{22}\). Everis\(^\text{23}\), on the other hand, points to a direct relationship between the average annual income derived by B2B data sharing activities and the total revenue of companies; as an example, the majority of companies earning more than 1 million Euros from B2B data sharing activities are those that make more than 100 million Euros as their total revenue.

**Platforms are the preferred means to perform and enable data monetisation.**


\(^{23}\) Study on data sharing between companies in Europe (SMART 2016/0087), April 2018, page 43
Buyers and sellers of data rarely connect directly. A technical platform in the form of a data marketplace or a simpler solution such as a website is usually preferred to exchange and monetize data. Uncertainties related to the actual value attribution of data, security concerns and technical difficulties in performing the actual data transaction are among the reasons of this choice.

Both Dawex and BT Radianz, for example, operate platforms that allow the data supply and the data demand to get in touch, while offering technical assistance, ensuring a safe transaction and providing advisory services on the evaluation of data. Dawex, however, is a multi-industry platform serving a panoply of sectors while BT Radianz specialises on financial services and the capital market.

**Medium to large companies are at the forefront of data monetisation.**

While certainly open to all sorts of companies, the services offered by most platforms enabling data sharing, and hence data monetisation, appear to be used primarily by medium to large companies. This is often due to the lack of awareness of SMEs towards data sharing and data monetisation, their relative early stage in the digital transformation maturity process and their limited availability of financial resources.

As an example, Dawex offers and tailors its services to a wide variety of companies, including start-ups and SMEs. The lack of financial resources, though, is reported as one of the main obstacles for expanding the data market to the small businesses. BT Radianz overtly focuses on the financial market and operates with large enterprises such as stock exchanges, credit institutes and big aggregators or disseminators of data like Reuters and Bloomberg.

**Wide differences in digital maturity, uncertainty surrounding data ownership, and lack of data skills hamper the development of data monetisation.**

When facilitating the data transactions, the companies featured in this research observe a strict separation between their offered services and the ownership of data. Platforms like Dawex or BT Radianz do not own the data and ad-hoc licensing agreements are made available to data suppliers. Nevertheless, uncertainty surrounding the status of data ownerships and what the data re-users will actually be allowed to do with data is widespread. What is more, differences in digital maturity across industries (for example, financial services and retail on the one hand and education and public sector on the other hand) represent a serious obstacle to the development of data monetisation practices, so does the lack of data skills affecting primarily SMEs, while large, multinational companies such as BT, Pirelli or Bosch do have the technical and financial resources to build internally, or spin-off externally, ad-hoc units dealing with data science and analytics. The lack of financial resources and uneven levels of digital maturity across European companies should not leave other “softer” factors unexplored. Culturally speaking, European companies exhibit high level of risk aversity and a certain reluctance towards the concept of sharing. This is changing - the success of the sharing economy in Europe and in general the increasing collaborative consumption of resources being a visible manifestation – but the road leading to this change is still long and policy intervention could be of help.
4. Preliminary Policy Conclusions

The in-depth interviews that were conducted for the realization of this paper, and the ensuing case-studies, do not provide a representative sample of the current situation surrounding the phenomenon of data monetisation in Europe today, nor they intend offer exhaustive recommendations on how to approach data monetisation in the near future. Nevertheless, a few preliminary conclusions can be drawn from the research.

1. **Raise awareness about the advantages offered by data monetisation.**

Data monetisation appears to be a still unacknowledged and somewhat underestimated phenomenon by many companies in Europe today. Data holder and supplier companies need to become more aware of the opportunities offered by their data in terms of new revenue generation, additional income obtained in conjunction with the offering of other solutions and possible premiums or other forms of business advantages that can be achieved by sharing their data with other organizations. Data re-users, on the other hand, need to better understand the advantages of acquiring data from other companies for their internal usage (to improve productivity, better manage costs, and enhance customer relationships) or with the aim of creating brand new business opportunities.

2. **Create a trusted environment around data monetisation.**

Trust between data suppliers and data users is of paramount importance to enable data exchanges and allow for subsequent opportunities of data monetisation. Case studies such as those of Dawex or BT Radianz demonstrate that extra-efforts in user-friendly data exchange mechanisms, confidentiality, licensing and pricing agreements and, not least, clarity on data ownership, help build trust between data holders and data re-users thus fostering new possibilities of data monetisation.

3. **Improve clarity on the legal framework affecting data monetisation.**

Uncertainties about the regulatory environment around data sharing and data monetisation still abound. Indeed, a lot has been done to enhance data protection and privacy in electronic communications and to remove restrictions pertaining to non-personal data. Yet, most of the companies interviewed in this research seem to have little knowledge about these efforts and indicate a lack of legal clarity as one of the main reasons for not fully engaging in data monetisation exchanges. As companies cherish contractual freedom and direct bilateral agreements, awareness-raising measures are likely to produce more beneficial effects than fully-fledged regulatory measures in this respect.

4. **Increase funding for SMEs to engage in data monetisation.**

Effective data monetisation requires secure and first-rate technical solutions, advanced technical skills, as well as business acumen and the ability to understand how to use or re-use data in an increasing digitised economy. The case studies featured in this research indicate the lack of financial resources as one of the main hindrances to data monetisation practices, especially for SMEs and micro companies. To allow this fundamental sector of the European economy to fully benefit from data monetisation, additional funding and ad-hoc investment measures are advisable. The companies interviewed in this research, and other studies on data-sharing in the B2B environment pointed to the limited available financial resources as one of the key obstacles for European companies to effectively monetise data. SMEs in particular could greatly benefit from targeted financial aid aimed at scale up data sharing technical solutions or help companies to invest in marketing solutions and communication activities to increase awareness among potential data users.

5. **Extend research on data monetisation.**

Data monetisation may take several forms, evolve towards additional practices not yet known, and provide extra benefits not yet considered. More research on data monetisation mechanisms at play in other parts of the world, especially in the United States, Japan but also in China and

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24 "Fueling growth through data monetization", McKinsey & Company, December 2017
Study on data sharing between companies in Europe (SMART 2016/0087), April 2018
India, could be beneficial to help the European data economy grasp new opportunities related to data sharing and monetisation.
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