

Acelera
pyme

A data-driven strategy for your SME

January 2023



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

Contents

1 > Introduction	03.
2 > What is a data-driven strategy?	05.
3 > Strategic data model	08.
4 > Steps to implement a data-driven strategy	10.
5 > Advantages of a data-driven strategy for SMEs	18.
6 > Conclusions	21.
7 > References	22.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

1. Introduction

In today's world, SMEs and freelancers face a myriad of challenges to stay competitive and succeed in their industry. With the increasing complexity of the market and the growing amount of data available, it is becoming increasingly important for these businesses to use a data-driven strategy to inform their decisions and improve their performance.

Data-driven strategy, or **data-driven strategy**, is particularly important for the **self-employed and SMEs**, as it allows them to make informed decisions and compete with larger companies. However, implementing a data-driven strategy can be challenging, especially for companies with limited resources.

At the moment there are a large number of self-employed and SMEs that are not aware of the value that a data-driven strategy can bring them. According to the INE survey of the first quarter of 2022 "ICT in companies", **only 3.77%** of companies with **less than 10 employees** used Big Data in their organisations, **12.67%** of companies with **between 10 and 49 employees**, **23.34%** of companies with **between 50 and 249 employees** and **44.20%** of companies with **more than 250 employees**. [REF-1] [REF-2] [REF-2]

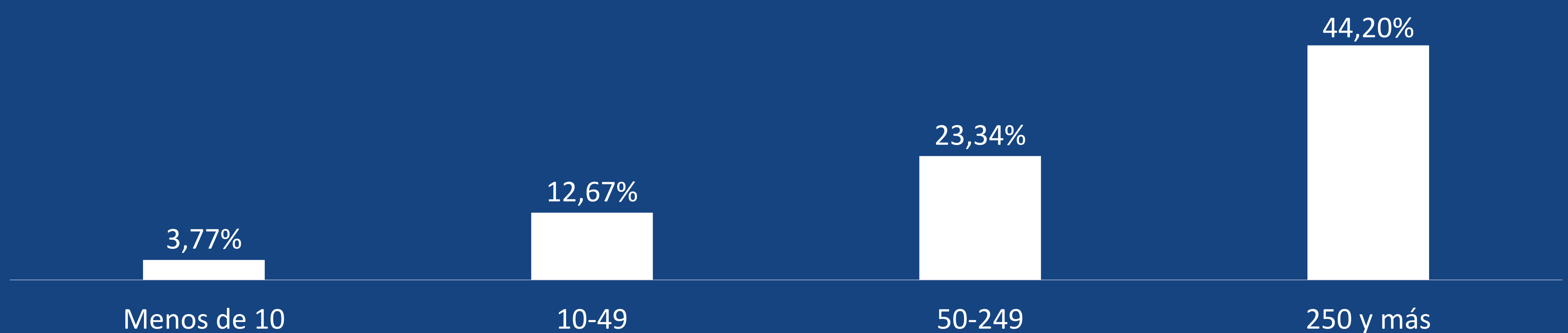


Illustration 1. Own elaboration based on INE data.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



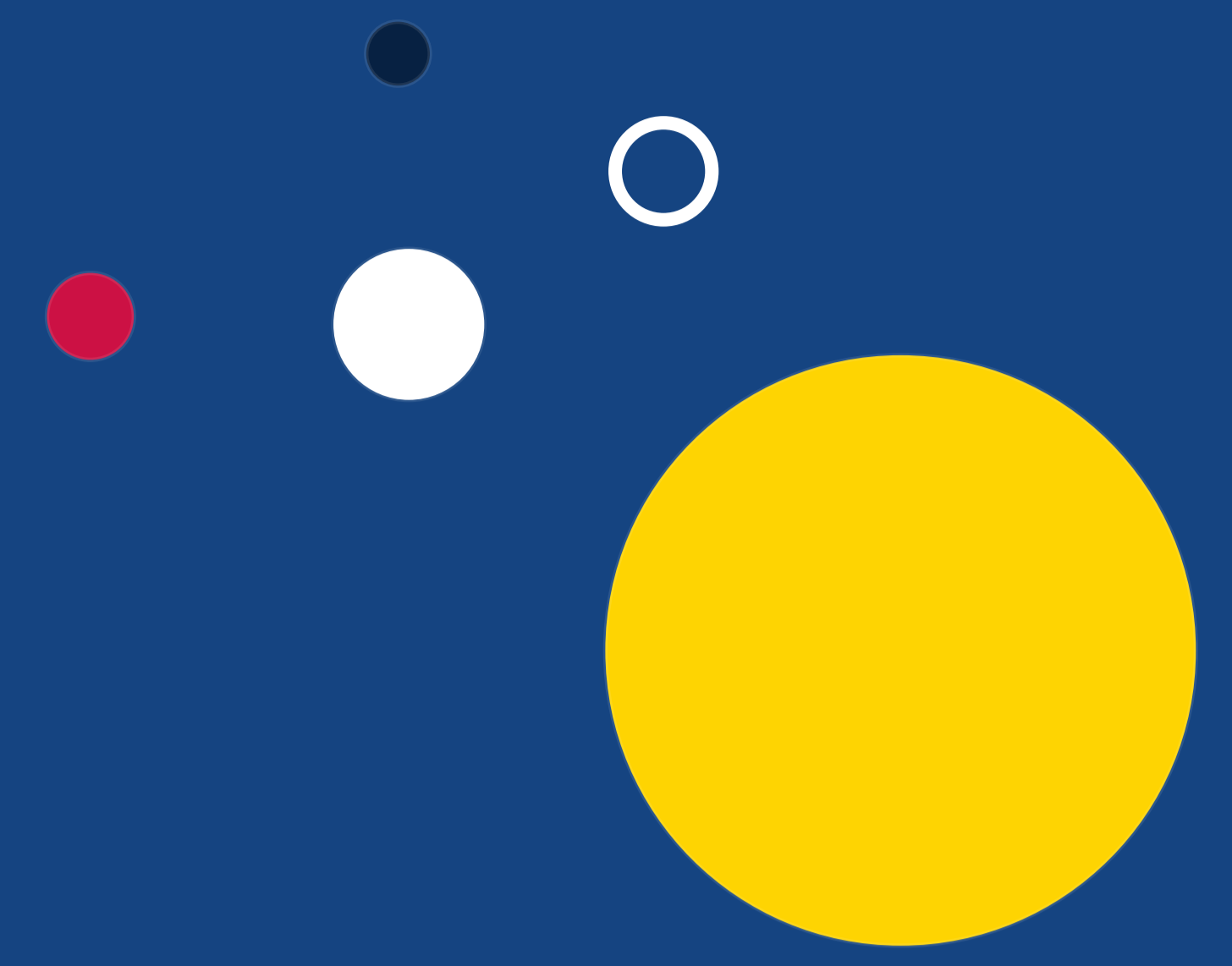
VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA



This indicates that while the use of data for strategy and decision making is **growing**, its use depends on the size and, in many cases, the resources of the company itself. There are still many small and medium-sized enterprises that are reluctant to use big data analysis to make more informed decisions. However, in order to encourage all companies to use it, it is worth noting that, in order to be a data-driven company, it is not necessary to use Big Data or other complex technologies, but that smaller-scale data analysis is also very useful and within the reach of any business.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

2. What is a data-driven strategy?

Context

An SME or a self-employed person with a data-driven strategy in their company is characterised by incorporating data into their strategy and maximising the value of this data for their business and supporting and reinforcing its operation. Normally, the operations of a company with a data-driven strategy will involve:
[REF-3]

- Integrate data and advanced analytics into corporate strategy, to be more competitive in the market and identify new business models.
- Provide the company with structures, roles, processes, policies and services oriented towards the exploitation and intelligent use of data.
- Develop and foster a culture where decision-making is based on data.
- To have the technological architecture and infrastructure in place to organise, manage and store information, facilitating the implementation of the data strategy.

The transformation to a data-driven organisation requires facing a number of challenges that are not always directly related to technology. These include::

- Implementing data culture
- Data governance and data security
- Democratisation of information
- Integration in the organisation
- Data quality
- Specialised talent

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



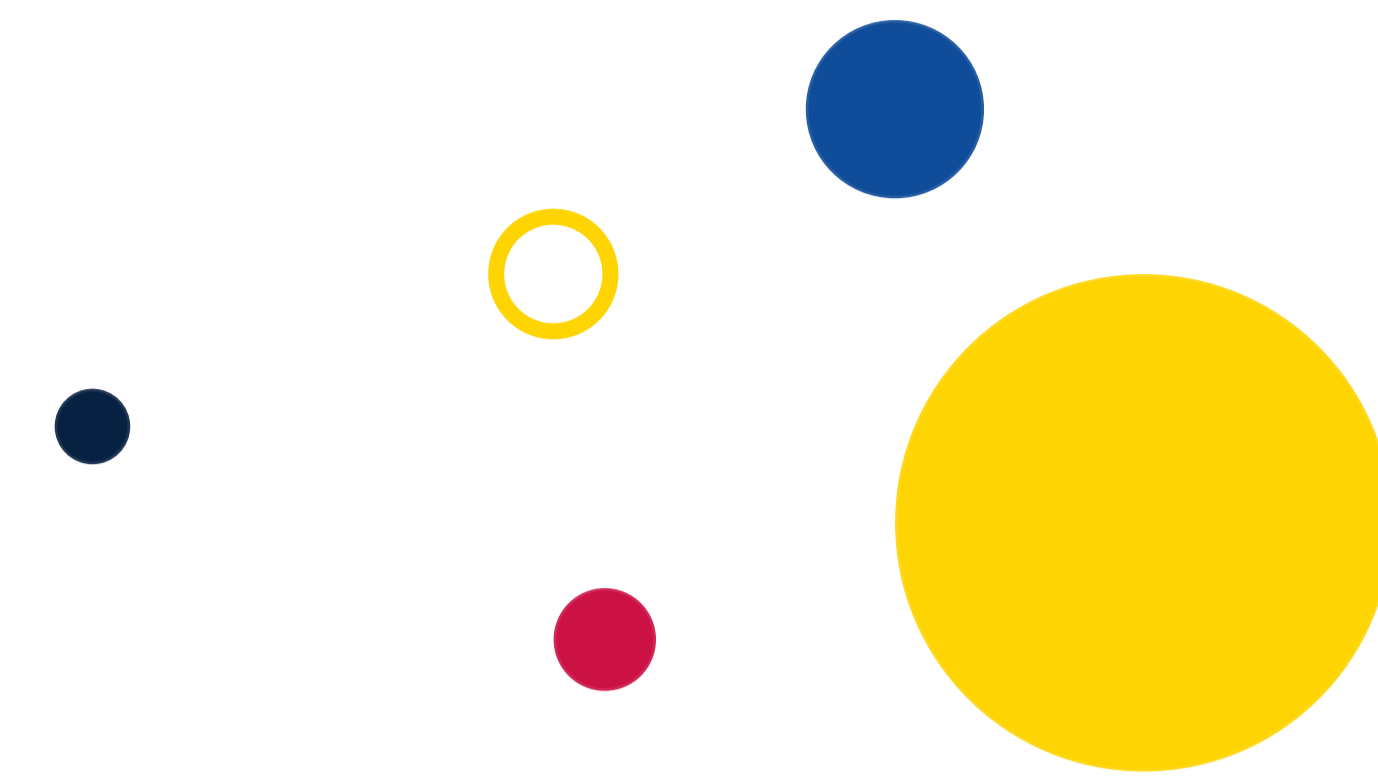
VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA



The correct management of these challenges is always a decisive factor in achieving the orientation towards this type of strategy. Thus, in many cases, the poor handling of these challenges means the failure of the process; in this sense, Forbes mentions eight possible causes of a poor transition to an SME with a data-driven strategy: [REF-4].

- Poor quality data
- Incorrect analysis
- Inadequate recommendation
- Incomplete communication
- Misinterpretation
- Wrong decisions
- Incorrect execution
- Lack of capacity for continuous learning and adaptation

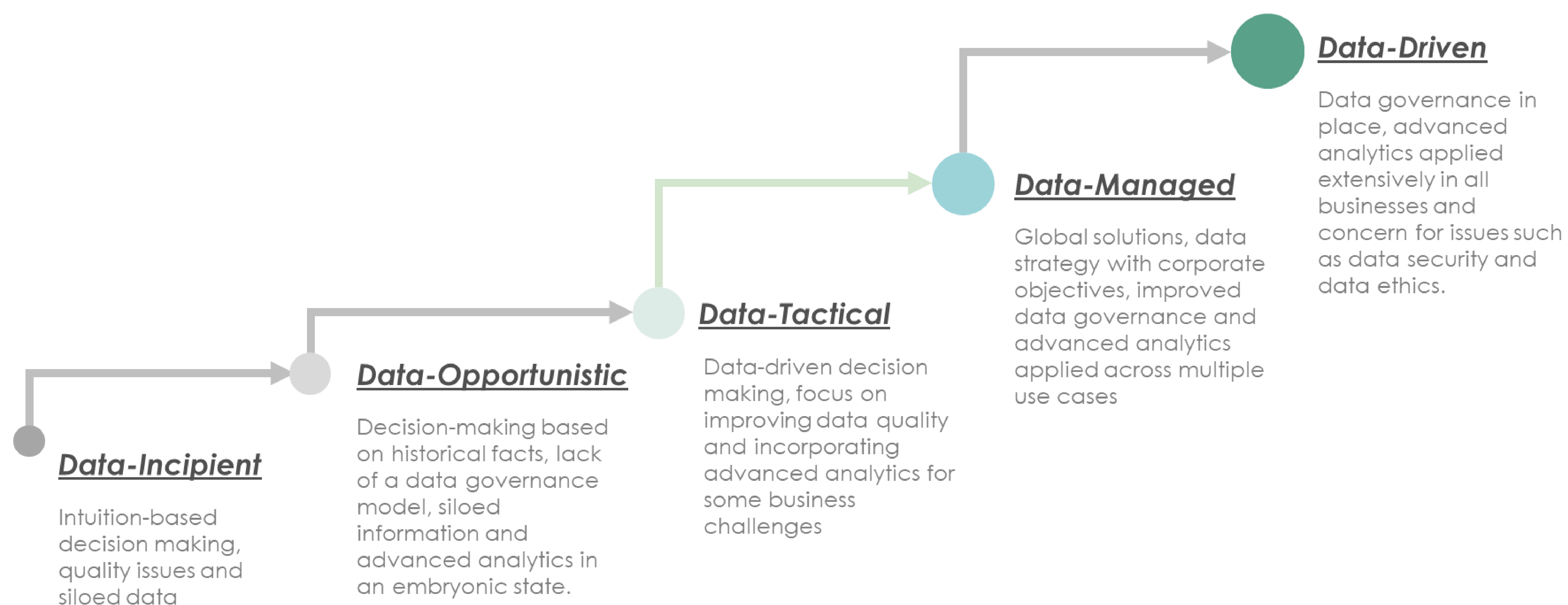
The prior visualisation and definition of contingency tools to safeguard the strategy from these problems will be a key factor in guaranteeing success.

Along with the correct planning and management of these risk factors, there are others, such as the maturity level of each organisation, as this substantially affects the process of becoming a data-driven organisation.

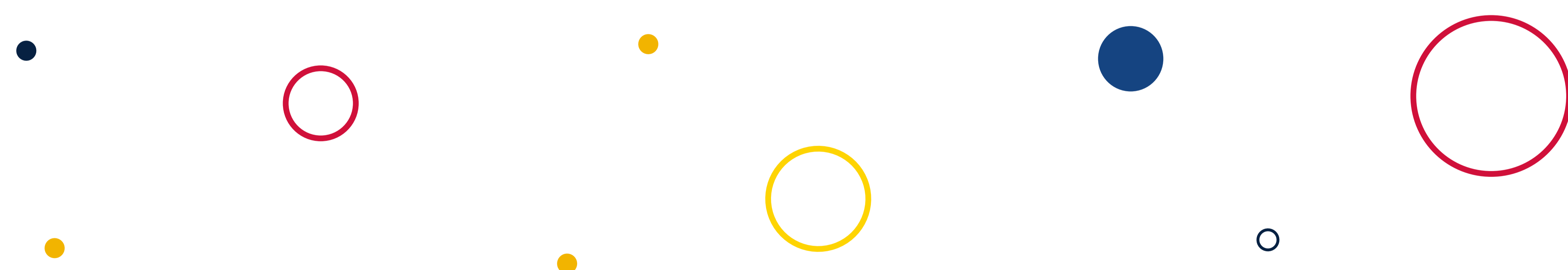
The approach, speed and requirement to become a data-driven organisation will vary depending on the strategy, the current organisational and operational model, the people and the technology. These levels (from lowest to highest level of maturity) are known as **Data-Incipient**, **Data-Opportunistic**, **Data-Tactical**, **Data-Managed** and **Data-Driven**.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



It is a gradual process that involves an evaluation of the strategy and procedures of each organisation. Constant evolution, the search for new opportunities and the innovation and management of current processes will make it possible to become a data-driven organisation.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es

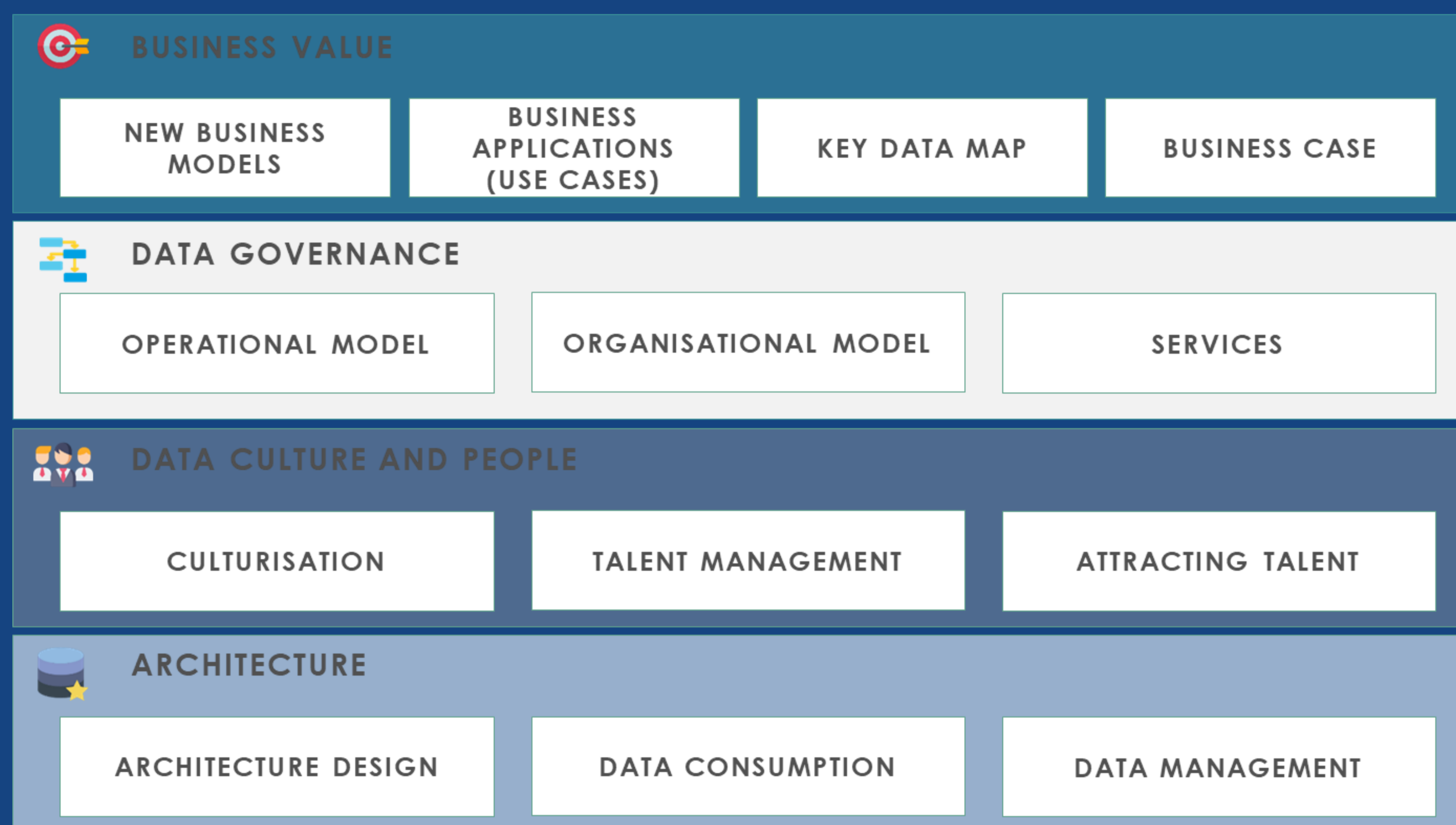


UNIÓN EUROPEA

3.Strategic model of data

The following is a strategic data model that helps organisations to transform themselves, become data-driven and build the capabilities and tools needed to respond to major business challenges.

This model is based on four dimensions that help shape the data strategy, all of which form the foundation on which the data model is built..



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



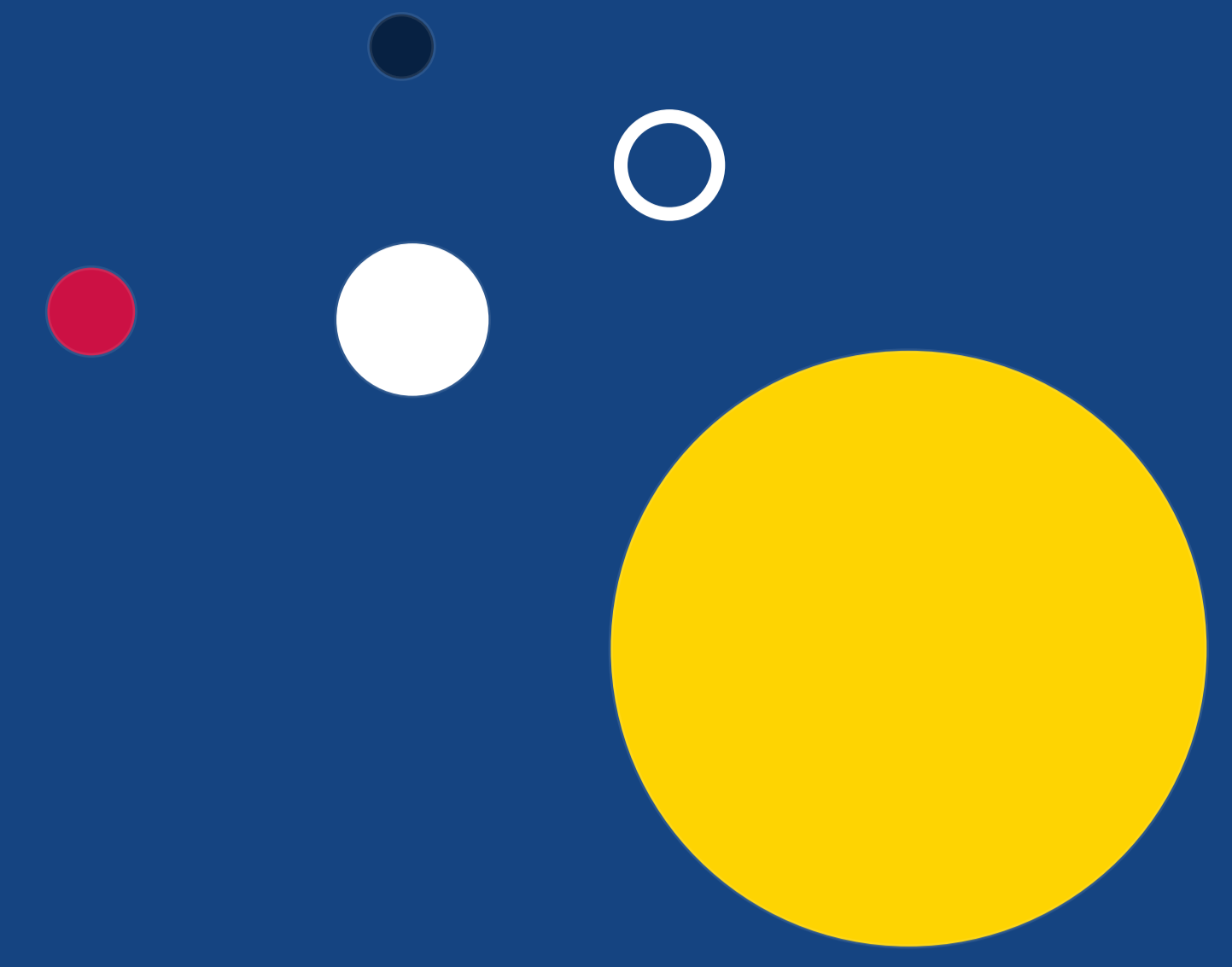
VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA



Each of these four interrelated dimensions seeks to answer the following questions:

- **Business Value**

- What are the use cases and business applications that will have the biggest impact on the bottom line?
- How can companies use data to gain competitive advantage?

- **Data governance**

- What is the best organisation to implement a data strategy?
- What are the key roles and responsibilities needed?
- What are the processes, services and coordination mechanisms to be implemented?

Data culture and people

- What talent do we need to manage and exploit data? Where can we recruit it? How do we develop internal talent around data? How do we address cultural change at all levels of the organisation?

Architecture

- What is the necessary technology and architecture that will ensure the achievement of the stated objectives?

Having answers to all the above questions allows the company to configure a data-oriented strategy, but, above all, one that is ready to implement a data-driven strategy.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

4. Steps to implement a data-driven strategy

4. 1. Identify opportunities for the implementation of a data-driven strategy.

Identifying potential opportunities and/or situations where a data-driven strategy is beneficial is an important step for any self-employed or SME in the process of developing and implementing a data-driven strategy. By identifying opportunities for data-driven decision making, SMEs can focus their efforts on the areas of their business where data can have the greatest impact and generate the most value.

The process for identifying such opportunities involves first assessing the data needs and capabilities of the business. This will help to understand what types of data need to be collected and analysed to inform decision making, and what resources are available to support these efforts. Some questions to consider include: [REF-5].

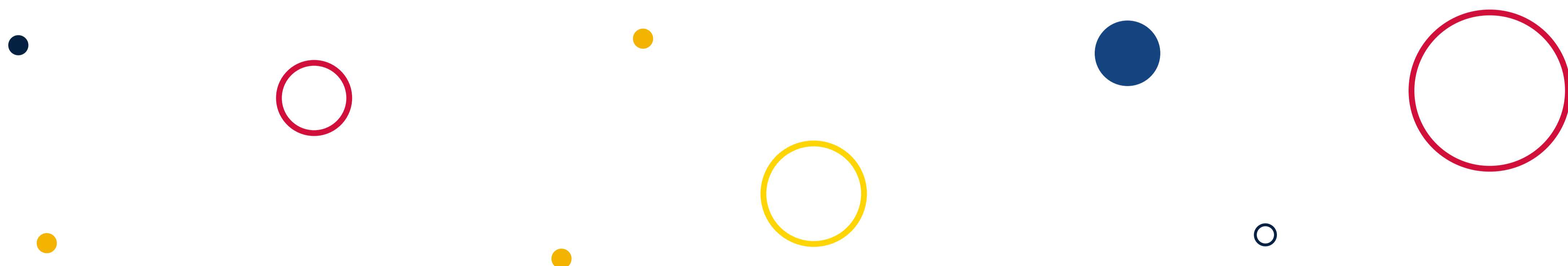
- ¿What kind of decisions need to be made on a regular basis?
- What data are currently collected and how are they used?
- What data could be collected that would be useful to inform decision-making?
- Are the tools and skills available to collect, analyse and interpret the data?

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

Once a self-employed individual or SME has a clear idea of their data needs and capabilities, they can begin to identify specific opportunities for a data-driven strategy. Some areas where data can be particularly useful in informing decision making include:

- **Marketing and sales:** Data can be used to better understand the customer base, target marketing efforts and optimise the sales process.
- **Operations and supply chain management:** Data can be used to improve efficiency and reduce costs by optimising production processes, inventory management and logistics.
- **Product development:** Data can be used for the design and development of new products and to optimise the performance and features of existing products.
- **Human resources:** Data can be used to improve employee performance and retention by identifying key drivers of employee satisfaction and productivity.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

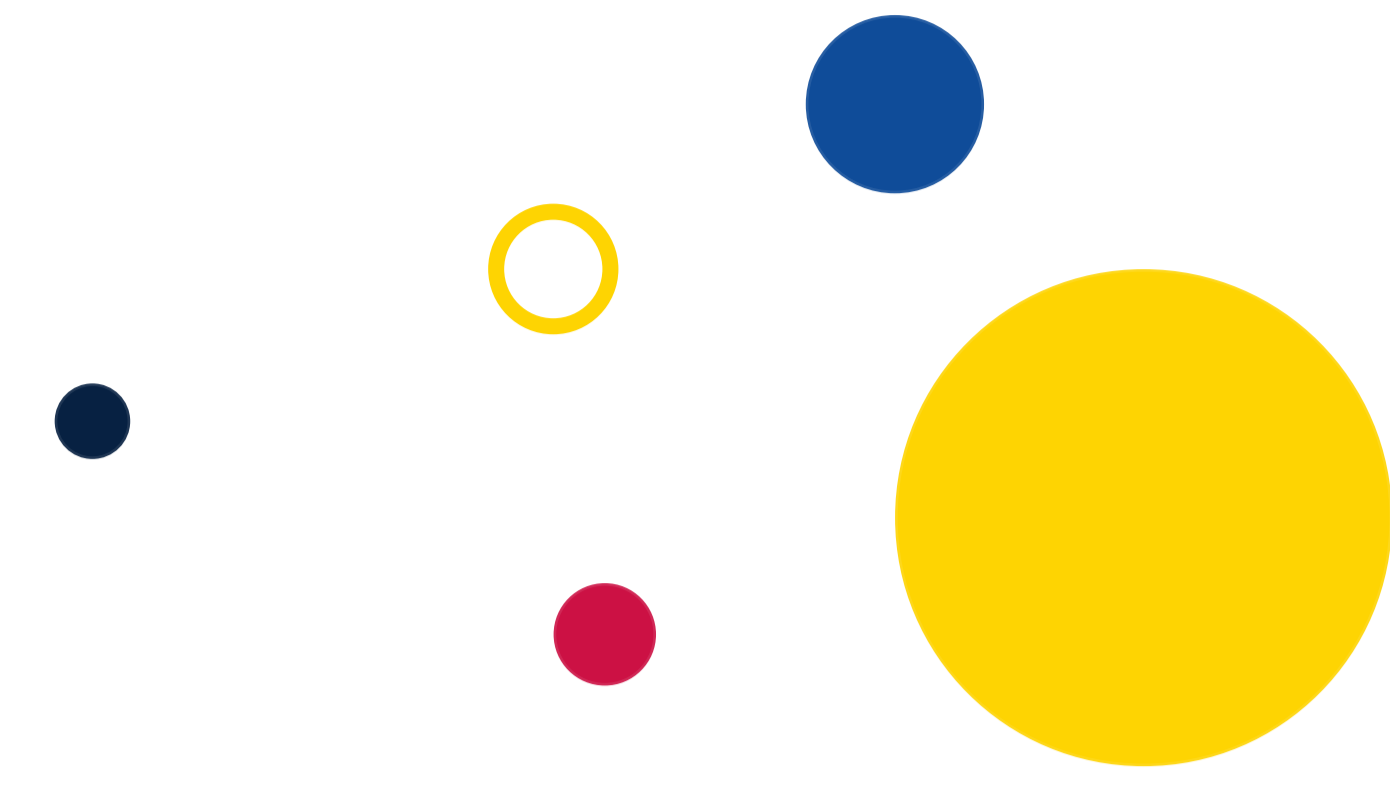
Having identified potential opportunities for a data-driven strategy, it is important to **prioritise them based on their potential impact and feasibility**. Some factors to consider when prioritising data-driven initiatives are the potential return on investment, the difficulty of implementing the initiative and the resources required. The potential risks and challenges of each initiative, and how these risks can be mitigated, should also be considered.

Finally, it is important to be proactive and continually look for new opportunities for data-driven strategy. As the SME evolves and new sources of data become available, new opportunities may arise to use data to make decisions and drive business success. By regularly reviewing and reassessing its data needs and capabilities, a self-employed or SME can ensure that it is making the most of the data at its disposal and staying ahead of the competition.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



4.2 Data collection and analysis

Having identified the opportunities for implementing a data-driven strategy in the company, the next step is, based on these opportunities, to collect and analyse data to enable decision making in the company.

In this sense, the process starts with the collection. First of all, it is important to choose the right data sources and tools for the existing needs, i.e. depending on the existing opportunity, the specific and global objectives of the company and its needs, budget and resources, some data sources will be used or others. Some common data sources in SMEs are:

- **Customer data:** Includes data on customer demographics, preferences and purchasing behaviour. This type of data can be collected through customer surveys, online analytics tools, social media data and transaction data.
- **Operational data:** This includes data on production processes, supply chain management and employee performance. This type of data can be collected through sensors, automation systems and human resources tools.
- **Market data:** Includes data on industry trends, competitors and economic conditions. This type of data can be collected through market research companies, online databases and government agencies (INE, datos.gob.es, CNMV, Eurostat, etc.).

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



red.es



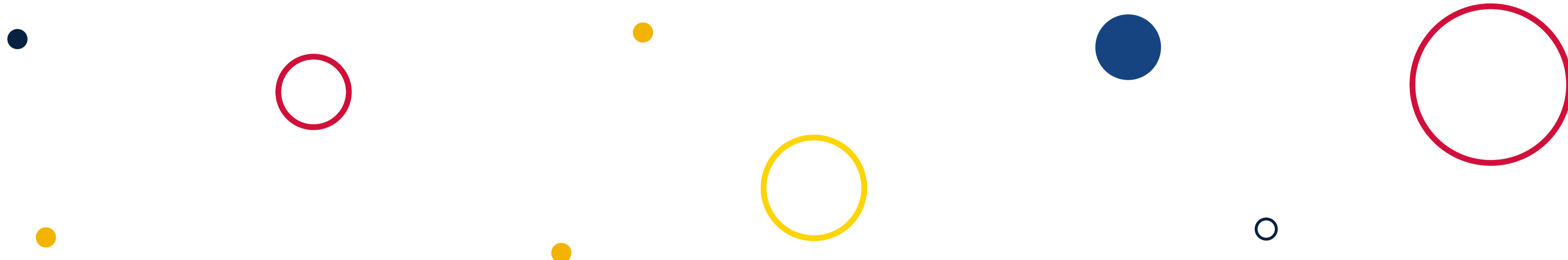
UNIÓN EUROPEA

Once the data sources that are most relevant to the business have been identified, tools and techniques must be selected to collect and analyse the data. Some common tools and techniques include:

- **Spreadsheets** (Microsoft Excel, Google Sheets, Apple Numbers, OpenOffice Calc): Spreadsheets are a simple and effective tool for organising and analysing data. They can be used to sort, filter and calculate data, as well as to create tables and graphs to visualise the results.
- **Data visualisation software** (Google Charts, Infogram, DataWrapper, Tableau, Microsoft Power BI, SAP Analytics Cloud, Looker): Data visualisation software can help SMEs and freelancers turn raw data into visual representations that are easier to understand and communicate.

However, it is essential to work with data that meets the following characteristics: [REF-6].

- It is necessary to **have quality data** that is highly accurate, complete, from a reliable source, current and relevant.
- It needs to be **properly processed and**, to this end, the data must be properly identified and extracted, which implies, among other things, that it has a structured form.



Fondo Europeo de Desarrollo Regional

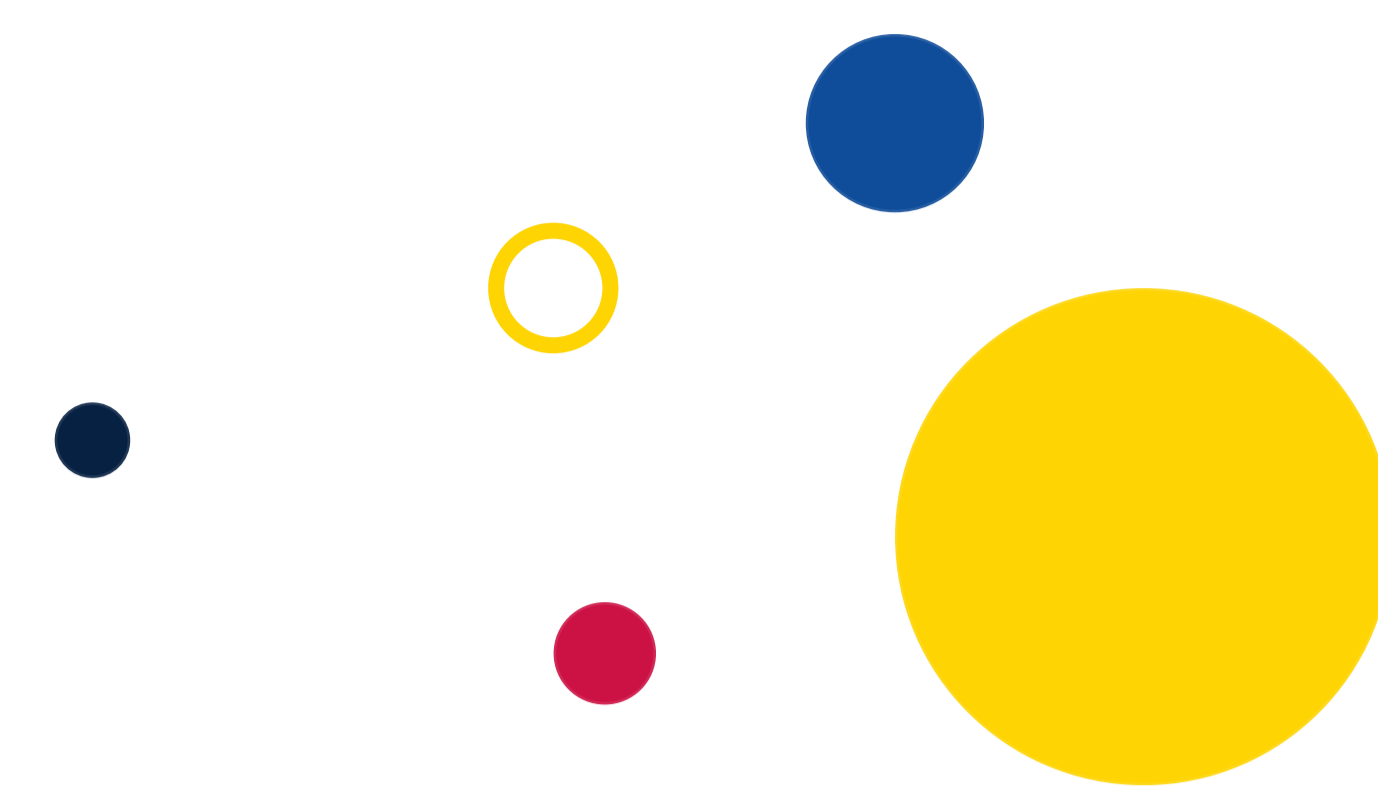
"Una manera de hacer Europa"

For all this, the extracted information must be correctly processed before focusing solely on its visualisation. On the website datos.gob.es it is possible to access a report, updated in 2021, which includes a list of the main data extraction, processing, analysis and visualisation tools developed in the field of open software (free versions are also available). This list complements the tools mentioned above and is grouped according to their main functionality: [REF-7].

Main functionality	Tool
Web scraping	Parsehub
	Scrapy
	Table Capture
	IMPORTHTML function
Data cleaning	Open Refine
	Talend Open Studio
Data conversion	Mr. Data Converter
	Beautify Converter
	Tabula
Data analysis and Programming languages	Weka
	Knime
	Orange
	R
	Python
	GNU Octave
Visualisation	Kibana
	Tableau Public
	SpagoBI
	Grafana
APIS and visualisation libraries	Google Chart Tools
	JavaScript InfoVis Toolkit
	D3.js
	Matplotlib
	Bokeh
Visualisation and processing of geospatial data	Carto
	OpenLayers
	OpenStreetMap
	Geocoder
	Geopy
	GDAL
	PROJ.4 y PROJ.4S
Social network analysis	Gephi
	NodeXL

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

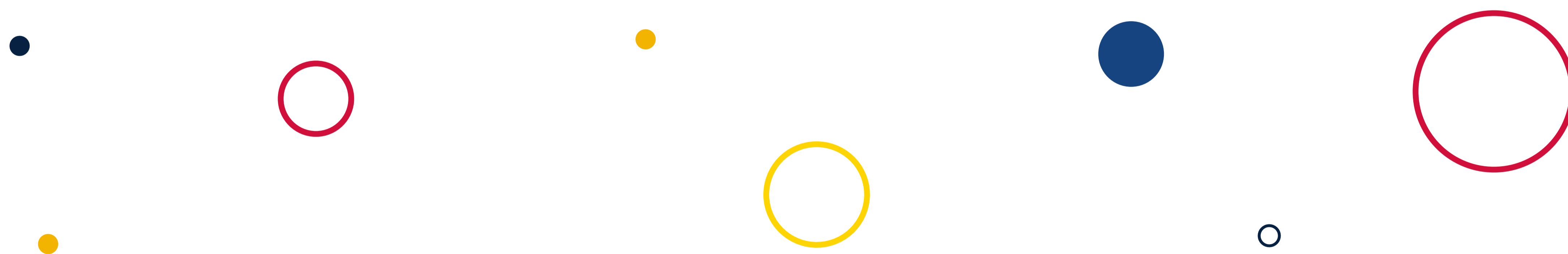


4.3 Implementing a data-driven strategy

Having identified the opportunities for the development of a data-driven strategy, and having collected and analysed the data, proceed to implement the strategy effectively so that it is applicable to both SMEs and the self-employed.

The first thing to do is to **communicate the results of the data analysis to key stakeholders**, both in the process and the outcomes of the process. This could include investors, managers, employees or even customers. It is important that everyone is aware of how the information from this data is being used, so that they know **how decisions will be made and how this can benefit the SME**. Effective communication **can help foster support and collaboration** in the implementation of the data-driven strategy.

Next, data-driven decision making needs to **be integrated into the company's business processes**. This may involve changing existing processes or creating new processes to take full advantage of data information. It may entail setting up a data team or appointing a manager in the SME to make decisions based on the analysed data. It is also important to ensure that **all employees have access to the relevant data information** and know how to use it to inform their decisions.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

Another key aspect of implementing a data-driven strategy is to **measure and evaluate the impact of the efforts invested**. This will help SMEs and self-employed individuals determine whether their data-driven initiatives are having the desired effect and make adjustments accordingly. To measure impact, it is important to **establish clear objectives and success metrics**. This will help determine whether the data-driven strategy is having the desired effect, as well as **identify areas where it can be improved**. Some **common metrics for measuring** the impact of a data-driven strategy include:

- **Efficiency gains:** This metric measures the ability of an SME to do more with the same number of resources and, in its most optimal indicators, even by reducing the number of resources. For example, it can measure the time it takes to complete a process or the amount of materials used in a production run.
- **Cost reduction:** Implementing a data-driven strategy can help reduce costs for a business or SME in a number of ways, such as through process optimisation or by reducing downtime. Cost reduction can be measured in absolute terms or in terms of percentage reduction.
- **Increased customer satisfaction:** Data can help to better understand the needs and preferences of an SME's customers, which can improve customer satisfaction. Customer satisfaction can be measured through surveys or customer service ratings.
- **Increased sales:** A data-driven strategy can help optimise a business' marketing and sales strategy, which can lead to increased sales. Sales growth can be measured in absolute terms or in terms of percentage increase. To use this metric, it is important to have a basis for comparison, such as a previous time period or an established sales target. The current sales volume can then be compared to the baseline to determine whether there has been an increase or a decrease.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

5. Advantages of a data-driven strategy for SMEs

In general, having a data-driven strategy has a number of associated benefits, for example:

- Personalise and improve the relationship with the customer by better understanding their needs.
- Increase sales through better customer acquisition, loyalty and retention.
- Reduce costs and optimise current processes by improving the operating model.
- Diversify and create disruptive business models by identifying new sources of revenue.
- Consolidate information in the organisation and eliminate silos by improving the elaboration and decision making processes.
- Develop a new, more analytical and innovative data culture in the company.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



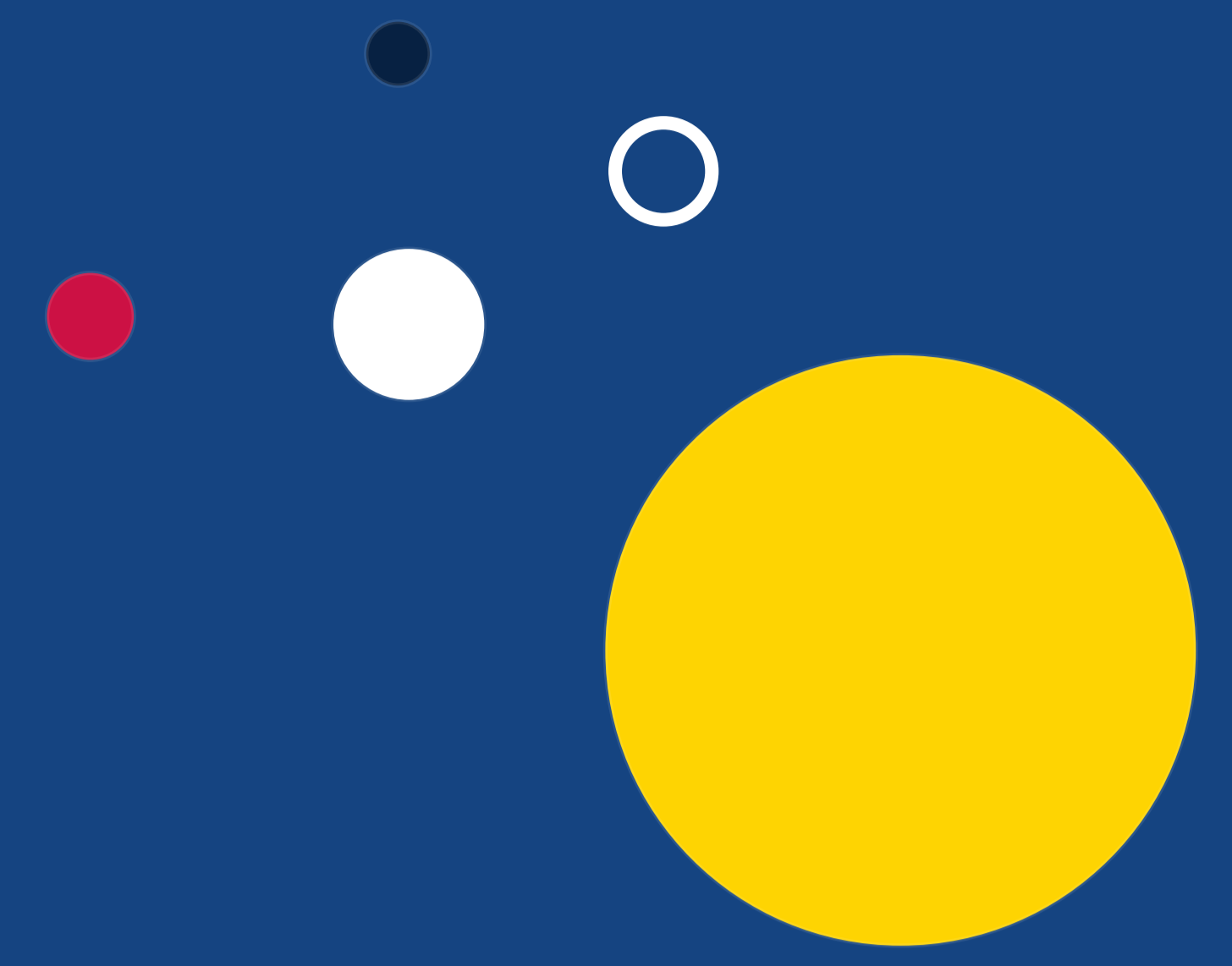
VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA



In addition, a business will see the benefits of having a data-driven strategy reflected as follows: [REF-8]

- **Increased efficiency and cost reduction:** A data-driven strategy can help SMEs optimise their processes and reduce costs by identifying areas of opportunity and room for improvement. For example, data can help identify inefficient processes or detect inventory or logistics problems.
- **Increased customer satisfaction and loyalty:** Data can help SMEs and freelancers better understand their customers' needs and preferences, which can improve customer satisfaction and customer loyalty. For example, data can help personalise the customer experience or identify opportunities to improve customer service.
- **Increased profitability and sales growth:** Data-driven strategy can help SMEs increase sales and profitability in a number of ways. For example, data can help optimise marketing and sales strategy or identify new business opportunities.
- **Increased competitiveness and competitive advantage:** SMEs that use data to support their decisions can have a competitive advantage over their competitors by being better informed.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



red.es



UNIÓN EUROPEA

- **Faster, more accurate decision-making:** Data-driven strategy enables SMEs and freelancers to make faster and more accurate decisions by providing a solid foundation of data to inform decisions. Data can help identify patterns and trends that may not be obvious to the naked eye and act accordingly.
- **Greater agility and ability to adapt to change:** Data-driven strategy enables SMEs to be more agile and better able to adapt to change by providing a continuous and up-to-date view of the business. Data can help identify changes in the market or in customer behaviour.
- **Greater visibility and control over the business:** A data-driven strategy enables SMEs and freelancers to have more complete visibility and control over their business by providing a comprehensive and up-to-date view of their operations. Data can help identify areas of opportunity and make data-driven decisions to improve business performance and success.



Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

6. Conclusions

In conclusion, implementing a data-driven business strategy can be particularly beneficial because, by providing a solid foundation of data to inform decisions, a self-employed or SME can increase efficiency, reduce costs, improve customer satisfaction and increase sales and profitability.

In addition, by using data to inform decisions, it is possible to have a competitive advantage over competitors, as well as allowing for greater agility and adaptability to change. On the other hand, it also allows for greater visibility and more complete control over the business itself, with the goal of making data-driven decisions and improving business performance and success. Implementing a data-driven strategy requires the correct identification of opportunities, data collection and analysis, and proper implementation and measurement, so that once implemented, it can significantly improve future performance and growth.

It is important to note that to get the best results and drive business success, data-driven strategy must be an integral part of the SME's own culture and must involve all levels of the organisation. It is essential to establish a responsible team and carefully define processes and protocols to collect, analyse and use data effectively. In addition, clear objectives and success metrics must be established to measure the impact of the strategy.

In summary, data-driven strategy is a valuable and powerful tool for driving the success of an SME, as well as an essential tool for informed decision-making and sustainable future growth.

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA

7. Referencias

[REF-01] – INE – Empresas con menos de 10 empleados: Las TIC en las empresas (primer trimestre de 2022) – Análisis de Big Data.
<https://www.ine.es/jaxi/Datos.htm?tpx=53924>

[REF-02] – INE – Empresas con 10 o más empleados: Las TIC en las empresas (primer trimestre de 2022) por agrupación de actividad económica (excepto CNAE 56, 64-66 y 95.1) y tamaño de la empresa – Análisis de Big Data.
<https://www.ine.es/jaxi/Datos.htm?tpx=53911>

[REF-03] – What exactly is a data-driven organization?
<https://www.cio.com/article/217767/what-exactly-is-a-data-driven-organization.html>

[REF-04] – 8 Pitfalls In The Data-Driven Decision-Making (DDDM) Process.
<https://www.forbes.com/sites/brentdykes/2022/08/31/8-pitfalls-in-the-data-driven-decision-making-dddm-process/?sh=656893057e16>

[REF-05] – ¿En qué consiste la estrategia de datos?
<https://aws.amazon.com/es/what-is/data-strategy/>

[REF-06] – Herramientas de procesamiento y visualización de datos
<https://datos.gob.es/es/documentacion/herramientas-de-procesado-y-visualizacion-de-datos>

[REF-07] – Informe herramientas de procesamiento y visualización de datos - Datos.gob.es

[REF-08] – Why a Data-Driven Culture Matters And How To Get There
<https://www.forbes.com/sites/forbestechcouncil/2020/01/22/why-a-data-driven-culture-matters-and-how-to-get-there/?sh=9b034b74b0f2>

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"

Acelera *pyme*

Fondo Europeo de Desarrollo Regional

"Una manera de hacer Europa"



VICEPRESIDENCIA
PRIMERA DEL GOBIERNO
MINISTERIO
DE ASUNTOS ECONÓMICOS
Y TRANSFORMACIÓN DIGITAL

SECRETARÍA DE ESTADO
DE DIGITALIZACIÓN
E INTELIGENCIA ARTIFICIAL

red.es



UNIÓN EUROPEA