FROM THE DESK OF DATA LEADERS: KEY TRENDS & CHALLENGES FOR 2024

MORE THAN 50 TOP EXECUTIVES EXPRESS THEIR VIEWS ON THEIR DATA AND AI MATURITY

EXECUTIVE SUMMARY

How could we introduce our Data Leaders Trends & Challenges 2024 report with anything other than generative AI? The torrent has swept in at an unprecedented speed, rapidly becoming one of the priorities of data offices.
Our qualitative study of over fifty top data executives and managers from large and medium-sized French companies confirms that the launch of ChatGPT over one year ago has propelled generative AI beyond the experimental stage, making it a central component of business strategy across the industry. With an intuitive interface, generative AI has become accessible to the general public and has now established its presence on the strategic agenda in the boardroom.
It's a paradigm shift that has hightened expectations and increased the demands on Data and IT Departments. In fact, 80% of respondents believe that data is gaining priority within their company with the development of generative AI.

We asked top executives about AI. Their priorities concentrate around four topics:

- **Rapid launch of new experiments:** These initial experiments meet expectations and form early beliefs about the value of technological uses and choices. By the summer of 2023, 25% of respondents had already initiated at least one experiment, and more than 2/3 had launched strategic working groups on the subject. Today, these figures are likely to increase significantly. While there are many potential usages, the majority of the experiments that have been observed involve the usage of "RAG" (for 'Retrieval Augmented Generation'), i.e. the ability to retrieve context-specific data from an external database and make it available to an LLM when it is asked to generate a response. The next wave should be based on the deployment of office applications such as Microsoft 365 Copilot, which makes the technology available throughout the company.
- **Training for users:** This large-scale deployment will require interaction with generative AIs to be treated as a skill that needs to be widely mastered, or risk sub-optimal or, conversely, use of the technology.
- **Assessing the risks and establishing an overall framework:** Data managers are particularly concerned about the reliability of models, which are known to be hallucinatory, and whose performance is difficult to measure with all the risks (operational, financial, reputational) that this entails. This context, along with the publication of the EU AI Act, is putting trustworthy AI at the center of concerns. Building trustworthy generative AI is a challenge identified by the majority of companies, and first good practices are therefore emerging.
- **Adapting operational models to the specificities of generative AI:** Beyond the POCs and experiments that are currently being carried out, the respondents share a number of questions about the elements that need to be integrated in order to move from initial use to production in 2024. As far as technology is concerned, while the time is ripe for testing, the most mature players are only just beginning to evolve their MLOps platforms and tools.

Generative AI is coming onto the scene at a time when most data offices have reached a considerable level of maturity: on average, 60% of AI applications are now in production, and 80% of companies have included data in their strategic plan.
However, data offices are still struggling to break through barriers and make a major impact on the scale of the company and its business model. Although the hybridization of organizational models between central team and local business relays is now a reality, many data offices are still essentially in the position of data 'Doer'. This creates both a bottleneck around usage and platforms, and difficulties in moving away from "tactical" use cases that are not strategic for the company.

In this context, data managers identify three challenges to increasing their impact across the company and breaking down barriers:

1 — **Being part of the company's strategic agenda:** To succeed, the respondents identify several key success factors:

- Meeting the expectations of top management and taking a strategic view of the contribution of data to the transformation of the company and its business model;
- Rebalancing their service offerings to become more effective enablers for Business Departments seeking autonomy and robust capabilities. Simultaneously, they are ensuring that services are designed for native integration into the overarching transformational programs of IT and Digital Departments;
- Supporting cross-functional and emblematic data usage, enabling them to position themselves as a third party and align the challenges of the various Business Departments;
- Co-sponsoring ambitious Business/Data projects to make data an integral part of the company's business model through robust and mature products that are embedded in business processes.

2 — **Operating Data Department through value:** While estimating ROI upstream of projects has become commonplace for prioritization and sponsorship purposes, the value actually generated by data and AI solutions is still largely unknown. Only 16% of CDOs are given responsibility for quantified value creation targets. The hype surrounding generative AI and its promise of productivity gains will accelerate the need to really measure the value of data investments.

Joint commitments to value creation by the business and data units, the Finance Department as a partner, and the formalization of a shared valuation method are all key success factors identified by data managers.

3 — **Implementing a Data Mesh approach to leverage data at scale:** To accelerate the implementation of strategic projects in production, data offices need to create a fertile ecosystem by making the necessary capabilities available to the various stakeholders. Nearly 80% of companies are starting to deploy data mesh principles to achieve this objective. But "Data Mesh projects" still too often emerge in an uncoordinated way, with no common trajectory with the stakeholders. And yet, more than a technological transformation, data mesh is above all a major organizational change aimed at decentralizing data management. The majority of CDOs are looking to deliver results quickly in order to maintain momentum and avoid encountering the same barriers as with data governance. In this case too, a number of best practices are emerging, moving away from the theoretical framework that is often considered unattainable to target realistic achievements around data domains and data products.

Taking up these three challenges is essential for data offices that are looking to take full advantage of the opportunities offered by generative AI and ensure they stand up to scrutiny. For many companies, the aim is to make 2024 the year in which these new use cases go into production and tools are deployed throughout the company, natively embedding this technology. This objective will be a "stress test" for the maturity of data offices and their ability to embark the whole company into a sustainable transformation.

Jonathan CASSAIGNE,
Vice-President, Data & AI Strategy, Capgemini Invent

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KEY TRENDS & CHALLENGES FOR 2024

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PRESENTATION OF THE BAROMETER

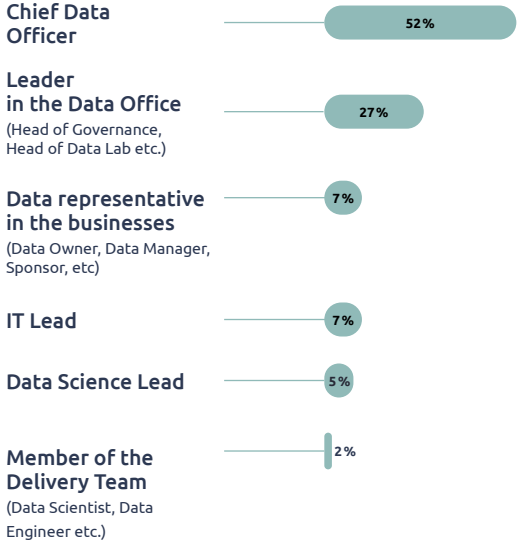
A panel of 53 respondents covering 7 main business sectors

We interviewed 53 CxOs and Data Managers from large and medium-sized companies and start-ups. During interviews, we discussed their challenges, their organizations, their priorities, their successes and their difficulties. The aim of these discussions was to:

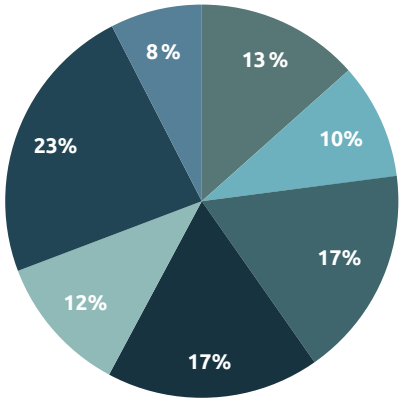
- Highlight the main issues shared by most data offices;
- Understand how data offices are tackling these challenges.

Positions held

% of respondents



Breakdown of companies by business sector



Insurance	AG2R, April, CCR RE, Groupama, Matmut, SCOR
Banking	Arkea, La Banque Postale, BPCE, BNP Paribas, Crédit Mutuel, LCL
Public sector	Ministry of Culture, Ministry of the Interior and Overseas, Unemployment Agency, Ile-de-France Region
Consumer products & goods/ retail / distribution	Chanel, Christian Dior Couture, Danone, Décathlon, ETAM, Eureden, L'Oréal, LSDH, Manutan, Terrena, Ynsect
Energy / Utilities	EDF R&D, Engie, GRTGaz, Orano, Schneider, Technip, Veolia Eau France
Industry	Arcelor Mittal, EGIS, Eramet, MBDA, Michelin, Modulaire Group, Plastic Omnium, Safran, Saint Gobain, setec
Other	GSF, Orange, Santeclair, Sodexo, SNCF

- Part 1 -

GENERATIVE AI AT THE HEART OF COMPANIES' CONCERNS

Generative AI replaces AI at the heart of companies' concerns

AI's renewed interest

The launch of ChatGPT at the end of 2022, and its adoption curve faster than any prior digital application, has paved the way for the generative AI boom. An AI comeback that even the most experienced observers had not anticipated. For the first time, AI is within everyone's reach, accessible online via an intuitive interface.
A paradigm shift that has profoundly changed the challenges faced by data offices. Discouraged by an uncertain ROI and difficulties to industrialize in production, companies had reduced their investment in AI in favor of less spectacular data projects (BI, Data Quality, etc.) by 2022.
But generative AI, with its promise of substantial productivity gains in many industries and its encouraging initial use cases, has put AI back on the companies' agenda.

Three technical capabilities for a wide range of usage

Generative AI adds value via three key capabilities

1 - Interfaces in natural language
Generative AI can interpret instructions expressed by a user in natural language, either written or spoken. This makes it much easier to interface with the tools, applications and services used by the company's employees, customers or partners.

2 - Content generation
Following a model and/or instructions given by the user, generative AI produces a variety of content in the form of code, images, video or text, for example. The content generated is based on the thousands of examples known to AI, but it remains novel because a) it is produced specifically to respond to the user request b) its creation is often determined in a partially random way.

3 - Documentary research & summary
On the basis of a user request, generative AI can identify, within a corpus, the documents containing relevant information, then use their content to formulate an informed response.

These three fundamental components can be deployed in solutions to meet a wide range of business needs, covering all corporate functions.

The most mature use cases pre-identified today are, for the most part, RAG-based (Retrieval Augmented Generation) on capabilities 1 and 3.

Function	Examples of use cases	Documentary research & synthesis	Content generation	Natural language interfaces
R&D	Offering product designs / chemical formulations	○	●	○
Purchasing	Analysing contractual clauses / commercial proposals	●	○	○
Supply Chain	Generating fleet inspection reports based on field audio recordings	○	●	●
Production	Analysing incidents' root causes and suggesting ways of improving them	●	○	○
Marketing & Sales	Developing hyper-contextualized sales scenarios	●	●	○
After-sales Market	Offering personalized responses to customers via a chatbot	●	●	●
Finance	Automating the drafting of financial reports	●	●	○
IT	Automating the software engineering cycle (specifications, development, support)	●	●	●
Data	Creating structured data based on images or text	●	●	●
HR	Offering personalized responses to employees via a chatbot	●	●	●
Other	Assisting employees with their day-to-day tasks (emails, document searches etc.)	●	●	●

● Essential capability ○ Optional capability

Value drivers

EFFICIENCY

- Faster work
- Acceleration of business processes
- Focus on higher-value tasks
- Lower level of skills required to perform certain tasks

QUALITY

- More creativity
- Better dissemination of experience/expertise within the company
- Spending more time on improvement than on the draft

A mixture of interest, concerns and scepticism

Companies are only just beginning to embrace generative AI. Overall, they are seeking to form initial convictions about potential value, and to move forward cautiously.

68%

of respondents have already launched strategic or operational working groups on generative AI

Among them

25%

had already initiated at least one experiment by July 2023

The main concerns relate to:

- The performance and robustness of models which are known to hallucinate;
- The legal implications and intellectual property issues;
- Service providers & vendors lock-in;
- Costs;
- Impact on employment and skills.

We are wondering about how to use these models: fine-tuning, cost, storage and intellectual property issues »

CDO, banking sector

High expectations of CDOs & CIOs

The promise of democratized AI has increased the number of requests made to Data and IT Departments.

80%

of respondents believe that data is gaining priority within their company with the development of generative AI

On the one hand, this interest represents an opportunity to obtain sponsorship and budgets, including for support functions that were previously less active in data and AI. On the other hand, expectations of Executive Committee and business units will test the data operational model that has been put in place over the last few years. Data and IT Departments will undoubtedly have to develop these around key strategic questions:

Which ambition?

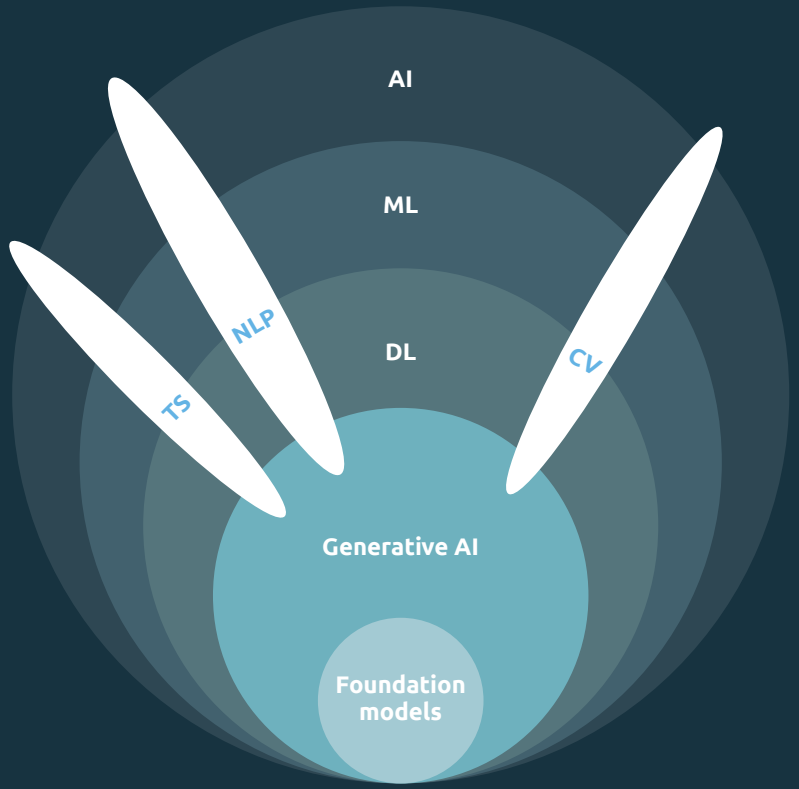
- Which use cases should be explored?
- Should generative AI be prioritized at the expense of other AIs?
- How to mitigate the risks associated with this technology?

How to succeed?

- Should the technological stack be upgraded?
- Which organization and which governance?
- Is there any need to recruit and train?

ZOOM

What is generative AI?



- AI -

Artificial Intelligence

Computer science discipline that aims to create systems capable of performing tasks that generally require human intelligence.

- ML -

Machine Learning

A sub-field of AI that focuses on developing techniques, which allow computers to learn from data and improve their performance on specific tasks without being explicitly programmed.

- DL -

Deep Learning

A sub-category of Machine Learning that uses network-structured algorithms to represent relationships between data. This approach is more expensive but can offer better performance in many contexts.

- NLP -

Natural Language Processing

Branch of AI that focuses on the understanding, generation and manipulation of text and speech by computers.

- TS -

Time Series

Branch of AI that focuses on chronological data sequences. It aims, for example, to understand and predict trends over time and to detect anomalies.

- CV -

Computer vision

Branch of AI that enables computers to see and understand by analyzing images and videos.

- Generative AI -

Theories and techniques for generating new, previously non-existent data (text, image, sound, etc.) based on specific instructions.

- Foundation models -

Artificial intelligence models trained generically on large-scale data, and which can be adapted to a large collection of specific tasks.

Generative and discriminative AIs are synergistic

Generative AI should not be seen as the new generation of AI that has come to replace previous practices. Generative and discriminative AIs will continue to thrive side by side, and often co-exist within the same solution.

Complementary strengths and weaknesses		
Generative AI		**Discriminative AI**
Creating, synthesizing	< >	Detecting, classifying, measuring
Versatile	< >	Narrower, more targeted field of action
Higher costs (training and inference)	< >	Lower costs (training and inference)
More humans in the loop to interact	< >	Uses less based on human interaction

Key Terms

Vector
Mathematical representation of words, images or other elements enabling a computer to evaluate the semantic distance between concepts and perform calculations such as *king – man + woman = queen.*

LLM - Large Language Model
These models are used as inputs for text-based generative AI applications. They are statistical representations of a language, built on training sets up to several billion words. An LLM is designed to predict the next most likely word in a sequence such as "the sky is ..." (blue, grey, etc).

Hallucination
LLMs rely on their knowledge of the statistical relationships between the concepts that make up a language. This enables them to construct sentences that are often intelligible and coherent. On the other hand, the truthfulness of the statements generated by LLMs is never guaranteed. LLMs tend to produce "hallucinations" or factually false content, which is not always easy to spot without prior knowledge of the subject.

Emergent capabilities
The performance of an LLM depends on the size, nature and quality of its training set, as well as the number of parameters it has at its disposal to model the language. This performance is not linear.

Fine tuning
LLMs such as GPT are described as "foundational". They provide the basis for generative AI applications (e.g. ChatGPT) but may need to be reworked or "fine-tuned" to achieve sufficient performance in real-life conditions. Fine tuning is a form of re-training that involves providing a dataset of examples to be reproduced by the machine.

Prompt engineering
In addition to fine tuning, the model's performance depends very much on the data it has available to respond to each request. This data is contained in the "prompt" or instruction it receives. Prompt engineering is the discipline that optimizes the way LLMs are queried within an application.
It is based on a number of elements such as:
- Question asked by the user (prompt design);
- Examples to be followed (few shots learning);
- Contextual data from the company's document database (Retrieval Augmented Generation);
- Use of several LLMs in sequence (Chaining);

The four challenges Chief Data Officers face to stay in the race

1. Initializing first experiments fast

A clear-sighted approach to avoid disappointment

CDOs must help the Executive Committees and the business lines calibrate their expectations. As it was the case with Deep Learning a few years ago, the rise of generative AI is accompanied by false promises and inflated expectations.

Rapid POC Development

To date, only a few features are mature (see table below). The challenge for companies will therefore be to quickly test generative AI on their data and use cases to asess its performance precisely.

A 2-wave deployment

The first wave of generative AI will leverage features integrated into office applications such as Microsoft Copilot 365. These tools will be able to cover a large proportion of current business needs, but will reach their limits when it comes to more specific use cases, requiring, for example, the mastery of company-specific concepts or access to internal documents & databases.

Companies need to quickly identify the use cases which require bespoke implementation, while adjusting for changes in vendors' features. Experiments will need to be launched without delay to enable companies to stay in the race.

Generative AI features to date

Text/voice	Code	Image/video	Structured data
Summarizing	Completing	Increasing the resolution	Detecting anomalies
Translating	Translating	Modifyin/Styling	Generating graphical representations
Interpreting/ reformulating	Optimizing	Describing/ Interpreting	Describing/ Interpreting
Respond factually with sources	Documenting	Generating from natural language	Filling in missing values
Solving logical/analytical problems	Generating from natural language	Moving from 2D to 3D	

● Mature ● Emerging ○ Embryonic

Generative AI has significantly increased top management expectations regarding AI and data. We now need to support top executives in this area and quickly communicate what we can do, and what we can't do, otherwise we run the risk of doing things that are counter-productive.

Olivier MONNIER,
CDO, MATMUT

2. Assessing the risks and establishing an overall usage framework to be refined gradually

Despite its significant potential, generative AI presents risks and limitations that users need to be aware of. Companies need to quickly establish a framework that defines for users:
a) The field of opportunities;
b) The best practices to be adopted for responsible use.

This must be done iteratively as the technology and legal framework evolve.

Limits

- **Hallucination**
  Difficulty in guaranteeing the accuracy of results.
- **Toxicity**
  Occasional use of inappropriate, coarse or hateful language.
- **Bias**
  Reproduction of unfairly skewed content.
- **Performance measurement**
  Difficulty in automating performance measurement given the subtlety of the language and the random nature of the content generated.
- **Costs**
  Prohibitive training costs for many companies (several million Euros for a state-of-the-art model). Inference costs can rise rapidly for applications that are heavily used and/or require a lot of data in context.

Risks

- **Reputation**
  Malfunction of applications interacting with end users, customers or business partners.
- **Law**
  Grey areas around intellectual property (training data and and generated content) and ethical use.
- **Supplier**
  Possible dependence on generative AI suppliers and limited sovereignty over model governance.
- **Operational**
  Decision-making based on erroneous information.
- **Security**
  Cybercrime, data leaks, deepfakes, etc.

3. Training users to avoid disappointment

How one interacts with generative AI has a major impact on its performance. Change a few words in the instructions and the result obtained can change completely.

Example with two different prompts

Standard few-shot prompting

Input

Q: Roger has 5 tennis balls.
He buys 2 more boxes of tennis balls.
Each box contains 3 tennis balls. How many tennis balls does he now have?

A: The answer is 22.

Q: The cafeteria chef had 23 apples.
If he used 20 to prepare lunch and bought 6 more, how many apples does he have ?

Model Output

A: The answer is 27 ✗

Chain of Thought prompting

Input

Q: Roger started with 5 balls.
He buys 2 more boxes of tennis balls.
Each box contains 3 tennis balls. How many tennis balls does he now have?

A: Roger started with 5 balls.
2 boxes of 3 tennis balls each represent 6 tennis balls.
5 + 6 = 11.
The answer is 11.

Q: The cafeteria chef had 23 apples.
If he used 20 to prepare lunch and then bought 6 more, how many apples does he have?

Model Output ✓

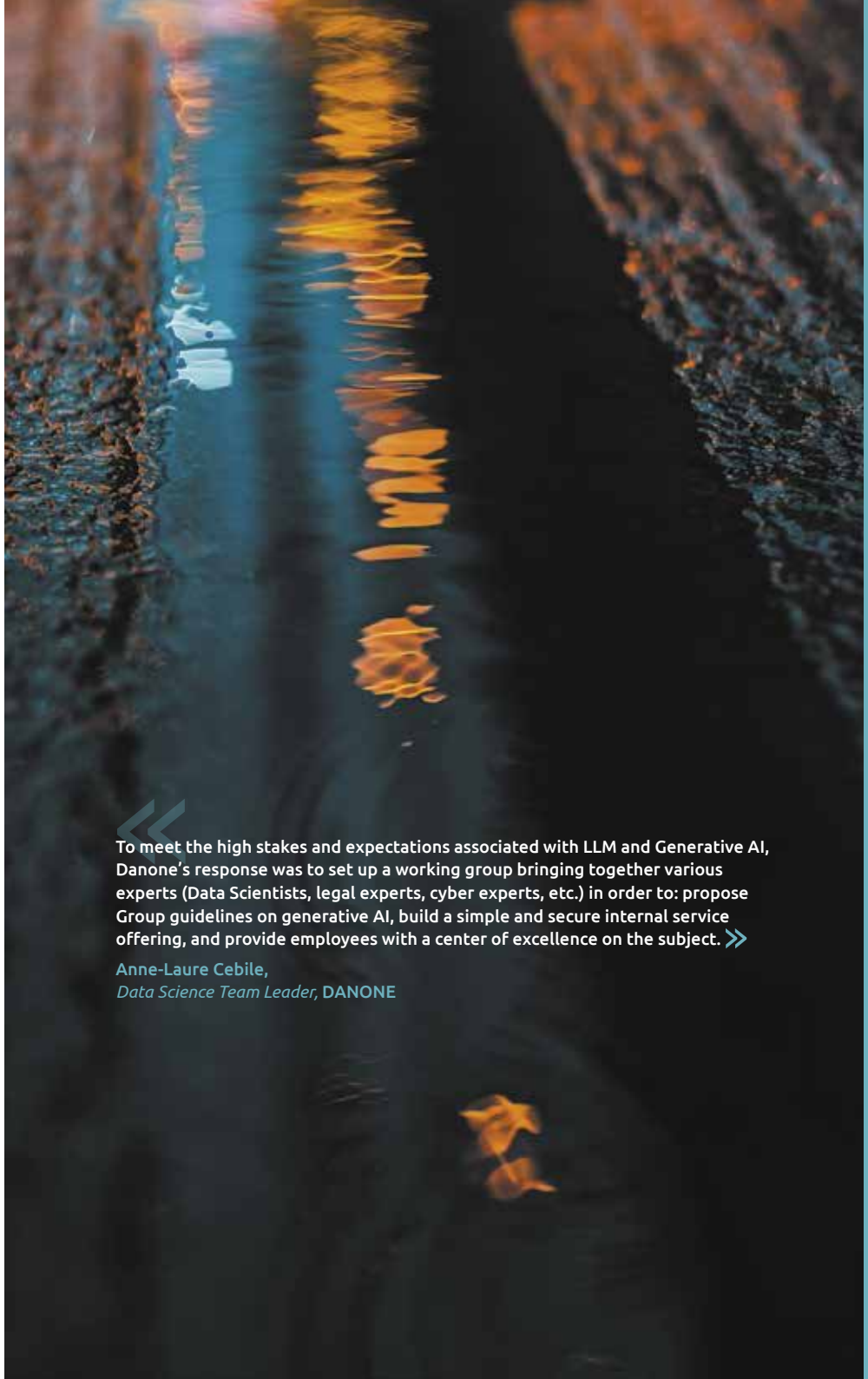
R : The cafeteria chef originally had 23 apples; he used 20 to prepare lunch. He therefore had 23 - 20 = 3. He bought 6 more apples, so he has 3 + 6 = 9.

The answer is 9.

Companies will therefore have to treat interaction with generative AI as a skill to be mastered widely by their employees. If they don't act quickly, they run a number of risks.

- **Sub-optimal usage:** users don't take full advantage of AI capabilities
- **Excessive usage:** users make too many attempts to achieve a satisfactory result, thereby over-consuming the AI.
- **Loss of interest:** users confuse their own shortcomings with those of the technology.

To mitigate these risks, companies have started to implement large-scale training programs in the form of a "Prompt Academy".



> To meet the high stakes and expectations associated with LLM and Generative AI, Danone's response was to set up a working group bringing together various experts (Data Scientists, legal experts, cyber experts, etc.) in order to: propose Group guidelines on generative AI, build a simple and secure internal service offering, and provide employees with a center of excellence on the subject. »

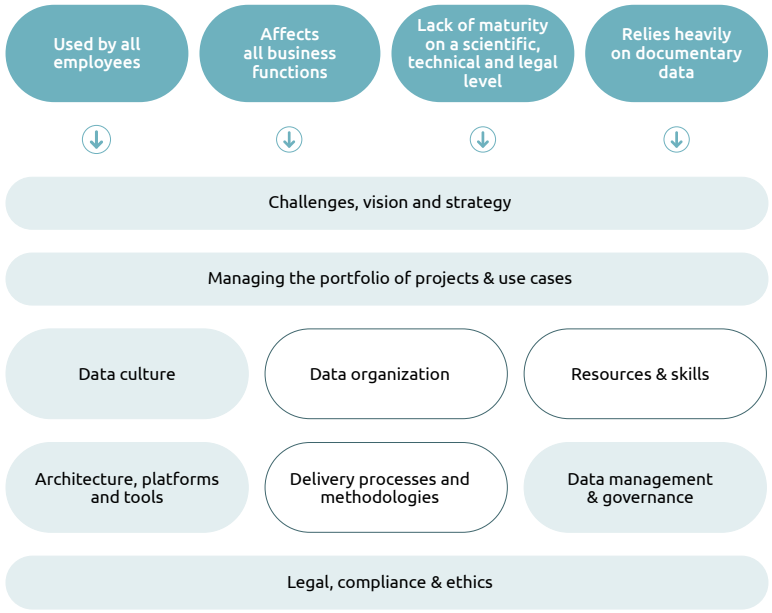
Anne-Laure Cebile,
Data Science Team Leader, DANONE

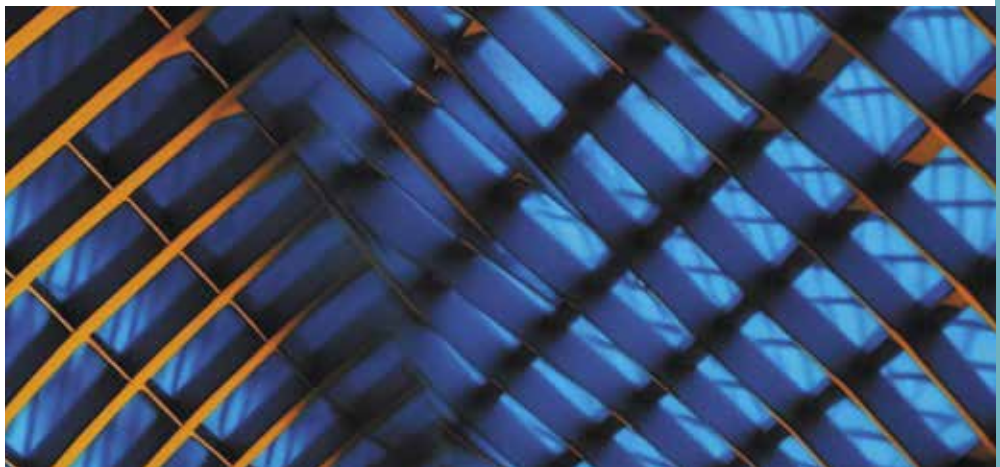
4. Adapting the data & AI strategy and operating model

Generative AI puts the strategies and operational models of Data and IT Departments to the test. Its specific features can make it complex to master.

Specific features of generative AI	Capacity put to the test for the company
Used by all employees	• Deploying and operating AI solutions at company scale • Steering large-scale change management programs • Monitoring and supervising the use of AI solutions to mitigate risks in a context prone to 'shadow data'
Affects all business functions	• Right-sizing data and IT staff to meet business demands (risk of bottlenecks • Upgrading the technological stack in line with business needs
Lack of maturity on a scientific, technical and legal level	• Formulating and implementing a strategy as a matter of urgency to avoid being left behind • Striking a balance between freedom to experiment and initiatives channeling • Ensuring agile delivery processes
Relies heavily on documentary data	• Improving the quality and accessibility of documentary databases • Spreading Knowledge Management best practices

Overview of the GenAI impact





Deploying generative AI into production poses new challenges

Measuring and optimizing performance

To take LLMs out of the laboratory, data offices will need to strengthen their ability to measure and monitor the model performance in live conditions.

Our recommendations

A) Offering generative AI developers a Test Bench

The performance of generative AI depends on a multitude of factors. Beyond the model, it is the choice of vector stores, prompt strategies (chaining, agents, etc.), the design of prompts and even the UX that determine the AI's performance for a given task.

The *Test Bench* enables developers to draw up a protocol for comparing several configurations in parallel. Today, the market is expanding to offer solutions dedicated to generative AI via players such as Weight & Biases or WhyLabs.

B) Integrating user feedback at scale

Measuring performance is difficult to automate because language is a nuanced and ambiguous subject. It is therefore essential to obtain continuous feedback from users, both during the experimentation phase and during the run.
Their role will be to point out and qualify the AI's mistakes so that the developers can:

- Recommend new ways of interrogating the model;
- Optimize the model via fine tuning or new prompt strategies, for example;
- Clarify the model's area of validity: what it can or cannot do.

Avoiding vendor lock-in

The LLM market is gradually becoming concentrated around a handful of state-of-the-art models held by dominant players such as OpenAI and Anthropic. This makes corporate customers vulnerable to:

- Obsolescence
  Technology advances so fast that a model can be superseded by the competitors in a matter of months.

- Decommissioning
  As new versions are created, the models on which applications are based can be decommissioned.

- Pricing changes
  Suppliers are currently stimulating market penetration by selling at a loss. It is possible that prices will increase in the future

- Ethics
  The company that consumes a model is dependent on the ethical choices made by its supplier. For example, it has no control over the source of training data, which may be subject to intellectual property constraints.

Our recommendations

A) Building model-agnostic architectures

Generative AI architectures must respect the principle of decoupling models from other technological building blocks. It must be possible to replace one ChatGPT with another without making any significant changes to the rest of the architecture, including data pipelines, vector stores, agents or pre-designed prompts.

B) Offering generative AI developers a *Model Hub*

The Model Hub gives generative AI developers access to an extensive library of models via APIs. The market is currently structuring itself to offer turnkey Model Hub solutions. The main cloud providers are developing their offers on this market. AWS Bedrock and Azure ML are offering access to a multitude of proprietary or open source LLMs, hosted on their servers.

Is your company "GenAI-Ready" to seize the opportunity?

AXES	KEY ISSUES	ENABLING CAPABILITIES
#1 **Challenges, vision and strategy**	Upskilling the Executive Committees and proposing a short- and medium-term strategy	• Ability to mobilize all the company's business functions • Data office close to the Executive Committee in the role of strategic advisor
#2 **Managing the project portfolio**	Channelling the influx of new projects and guiding "make or buy" decisions	• Effective governance and processes to identify use cases • Technology watch capacity in place
#3 **Organization & governance**	Establishing a framework for effective and responsible use, taking into account the limits and risks of generative AI	• Mature governance integrating business, data, legal, IT and cybersecurity • Ability to set up genAI-dedicated task forces
#4 **Resources and skills**	Assessing the impact on the skills of generative AI developers and users	• Existence of a structured data sourcing network, particularly for data engineers who are crucial for generative AI use cases • Existence of a Data Academy and/or an equivalent training structure • Close relations between the Data team and the HR Department
#5 **Data culture**	Continuous communication to keep pace with market and technological evolutions	• Close-knit relationship with business lines to drive upskilling at scale • Close relations between the Data team and the communication/transformation teams
#6 **Architecture, platforms and tools**	Upgrading the technological stack to enable the development and use of generative AI in production	• Partnerships with Cloud providers • Mature governance of the technological stack
#7 **Data management & governance**	Moving from Data Management to Data & Knowledge Management	• Some degree of centralization of key document databases • Mature Knowledge Management practices • Classification of sensitive data to mitigate the risk of data leakage
#8 **Delivery processes & methodologies**	Carrying out the first experiments and drawing up convictions on the key success factors in production and the specific features of production-grade generative AI solutions	• Mature experimentation and in-production capacity (MLOps stack) • Close relationship with business-side users to set up feedback loops
#9 **Legal, compliance & ethics**	Mitigating risks without restricting the organization in a regulatory context that is still unclear	• Governance in place between Data and Legal Departments • AI monitoring and governance capability in anticipation of the AI Act

SUCCESS STORY 1

Leader in the luxury **fragrance** sector

Challenges

Business line employees had come up with numerous use cases for generative AI leveraging LLMs and distribution models. The major challenge was to channel these initiatives and take advantage of this momentum to identify, prioritize and respond to the businesses' needs.

To achieve this, the client needed to:

- Raise awareness and demystify generative AI among stakeholders;
- Inspire employees with concrete examples;
- Imagine impactful use cases likely to bring significant added value to the company.

Result

A campaign of 40 awareness & ideation workshops was conducted with the business units. The use cases were classified into three categories.

Category 1
Use cases that can be launched very easily, as they only require the training of users and the purchase of licenses.

Category 2
Use cases that should be developed at a later stage, because they raise confidentiality issues or require the development of a complex interface or application.

Category 3
Use cases to be launched only when an external player proposes a solution because they are too complex to develop, or use cases that major players are in the process of developing in order to integrate them into tools (MS Teams, Gmail, etc.).

Identifying the right sources of value. »

KPIs

- **400+** participants;
- **81 used cases** identified
  (20 Category 1 / 40 Category 2 / 9 Category 3);
- **Use cases spread** across all the company's departments and often transversal;
- **2 prioritized use cases** were chosen and developed, with high added value, facilitating other related subjects.

Key lessons

- The prioritization of generative AI use cases is based on criteria that differ from the usual criteria for prioritizing AI use cases. In fact, these use cases often meet additional challenges, such as their ability to have an impact (value generated, cost savings, etc.), in addition to complexity criteria that are not yet fully mastered and are evolving on a daily basis.
- It is necessary to distinguish between use cases that fall within the scope of generative AI and those that can be carried out using other techniques, thus enabling further cost savings. Some of the ChatGPT use cases proposed by the business units, could be covered by less expensive models with equal or superior performance.
- During the ideation campaigns, the users to be prioritized are those needing to search for information within large quantities of textual information and other documents. These use cases (known as RAGs) are of high value and can be effectively handled by generative AI and new tools such as vector databases.

SUCCESS STORY 2

Company in the **financial services sector**

Challenges

An investment fund managing over €1bn in assets wanted to significantly accelerate its crucial due diligence phase. Due diligence can involve analyzing 10,000 to 20,000 documents to verify very precise elements and validate (or not) a decision to buy the company in question.

To help its teams, the company wanted to:

- Build an intelligent assistant with human-like interactions using the capabilities of GPT3.5/4;
- Retrieve information from a large corpus of documents, explore it and summarize the key facts;
- Provide a ChatGPT-like interface to interact with the assistant and visualize the retrieved documents.

Result

We developed a web application to help due diligence teams analyze a large corpus of documents (over 1 million documents).

This virtual analyst can be used in a number of ways (in-house document search, summary, information extraction, web search, etc.) for 3 categories of user:

- Analysts, who need to know about and analyze all documents;
- Specialists, who will look for very specific information (sectoral or functional) in the documents;
- Partners who want a quick answer to a few specific questions and to prepare his interactions with the company being analyzed.

The solution was put into production and used for each new due diligence.

Fast industrialization of a high-performance solution. »

KPIs

- **50+** users
  including the company's partners as the solution's first ambassadors;
- **Operational gain**
  significant on each due diligence.

Key lessons

The performance of the solution does not rely solely on the performance of the LLM:

- The user interface is key to driving the adoption of the solution by users, in particular by personalizing the agent so that the user has the impression of having a conversation with someone. To achieve this, the interface needs to be intuitive, offering prompt suggestions, etc;
- The integration of agents, each with their own role, area of validity and specialization, allows for more capabilities to be offered with better results, closer to the user's needs;
- The use of high-performance tools such as vector databases and multi-language embedding models is necessary to guarantee an optimal solution.

The human link must not be neglected to ensure the performance and relevance of the solution. They are involved involved throughout the solution's lifecycle (training, definition of the validity domain, implementation of controls and test sets, etc.). Their feedback and test cases are key to improve the solution.

ZOOM

AI Act & Trusted AI:
an acceleration to mitigate regulatory and operational risks

Generative AI highlights the need to address trusted AI related concerns

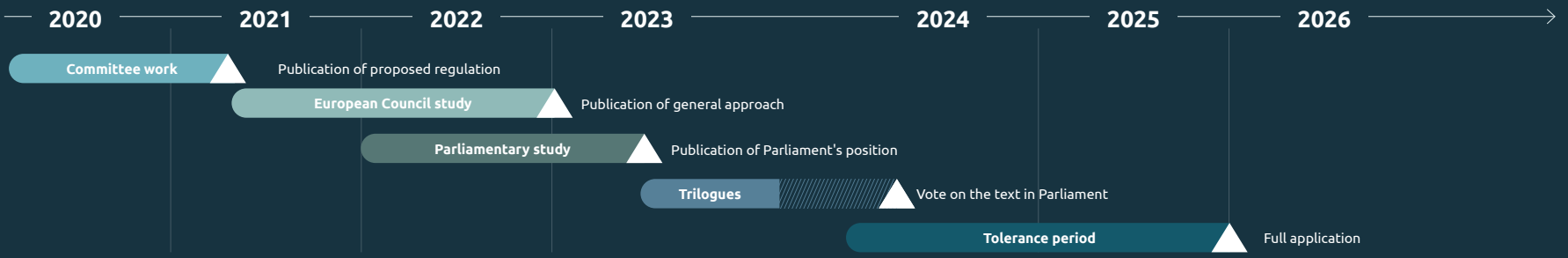
The arrival of generative AI, and LLM in particular:

- Increases the number of possible uses for AI, and is therefore prompting top data executives to embrace trust and model governance topics;
- Sparks new questions specific to the LLMs' nature, such as respect for intellectual property and protection against hallucinations.

At the same time, the AI Act is shaping up and is being enriched to meet the requirements of generative AI

The European Parliament proposes regulations around the usage of AI. By focusing on the risks associated with the usage of AI rather than the technology itself, the AI Act is intended to serve as a baseline that can withstand the changing context, and uphold the protection of fundamental rights.
The vote on the final text and the period of tolerance before the actual fines are levied are prompting companies to follow the deployment timeline in order to prepare themselves.

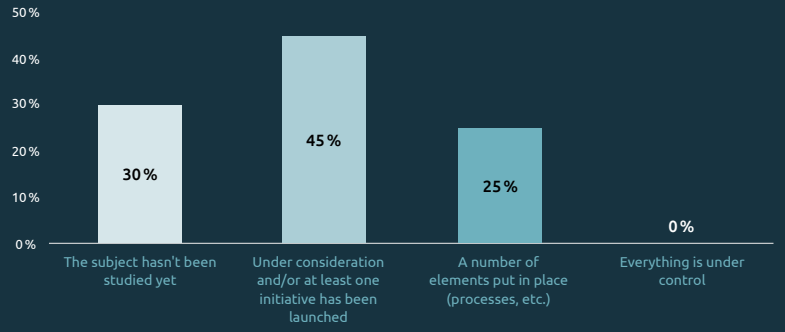
Timetable for deployment of the AI Act



Companies are concerned about the AI Act, but generally remain unsure about how to prepare for it

The GDPR regulation has left its mark on many businesses and pushes organizations to get ahead of the upcoming regulation. However, the scope of this subject is not yet clearly understood and actions to assess or remedy risks are yet to be undertaken.

Chart showing companies' compliance with the AI Act
% of respondents



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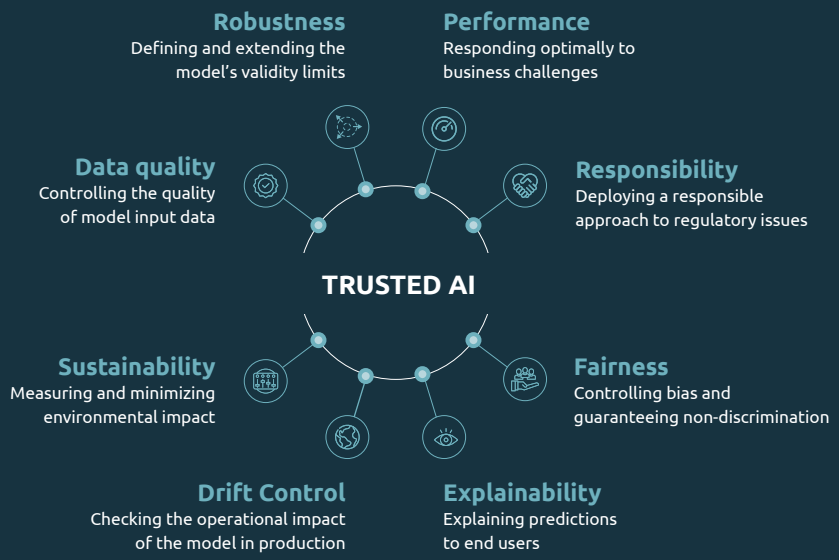
AI Act & Trusted AI:
an acceleration to mitigate regulatory and operational risks

To meet these challenges, trusted AI must be based on 8 pillars

These themes are those assigned by the IA Act, but they also represent major challenges for organizations.



Although trusted LLMs and the ability to audit these models are still an area of research, we have already identified specific guiding principles for each pillar of the trusted AI framework.

	Weaknesses	Design actions	Audit actions
Responsibility	• Generation of illegal or toxic content	• Upskilling and training users on how to use LLMs, in particular ChatGPT, to avoid being affected by known weaknesses of the tools	Characterizing possible jailbreaks
Performance	• Hallucinations • Targeted capabilities	• Optimize prompt though prompt engineering • Rather than taking a "bare bone LLM" approach, integrating LLM models into a wider system of technical building blocks (business layer or logical model for reasoning, searching, calculating, optimizing, etc.) to leverage the LLM brick for what it does best: natural language processing	Accounting for hallucinations
Robustness	• Specific domain usage • Non-reproducibility	• Establishing and differentiating the domain usage of each LLM to adapt responsibility and performance to the relevant & approved scope • Reducing temperature	Quantifying the uncertainty of results
Data quality	• Arbitrary representation of the world	• Human validated output to analyse, fact-check and censor generated content	Characterize the training set

	Weaknesses	Design actions	Audit actions
Fairness	Gaps in service quality	• Implementing a content "firewall" on users' inputs to ensure that no unwanted themes are addressed, for example using an intention detection model or prompt engineering	Quantifying performance gaps by domain
Explainability	Content generated without citing any source	• Connecting to a search engine (RAG) • Forcing explainability by-design by putting in place source quotation with a UX enabling users to check reliability for themselves	Evaluate the relevance of the quoted sources
Drift Control	Continuous API updates	• Collecting users' feedback on an ongoing basis • Implementing a strategy of automatic tests by area of validity to detect weaknesses and monitor changes and monitor performance and users' feedback	Carrying out detailed audits on a regular basis
Sustainability	Uncontrolled usage costs	• Implementing a FinOps strategy • Ensuring that the solution is fit for purpose: some LLM uses can be met with less energy-intensive technologies such as NLP	Carrying out a carbon assessment of the use case

We recommend a 4-pronged approach to mitigate risks effectively and sustainably.

Building the foundations

- Macro-diagnosis
- Strategy
- Program framework (governance, KPIs, etc.)
- Change management plan

Change management and skills development

- Change management & skills development
- Onboarding & animation of impacted communities
- Upskilling of Executive Committees
- Raising employee awareness
- Managers training
- Data scientists training

Integrating trust by design for future AIs

- Definition of target processes
- Definition of the internal audit framework
- Technical assets

Integrating trust by design for future AIs

- Definition of target processes
- Definition of the internal audit framework
- Technical assets

Summary and analysis

Given the unprecedented speed of the generative AI emergence – a mass-market technology, some of whose uses will be based on tools made available to as many people as possible – Data executives are faced with new challenges. First of all, they need to be able to respond to the demands of their top management and rapidly launch new use cases for generative AI. But while the potential opportunities generated by the adoption of this technology are immense, the technological environment and associated risks are still in the discovery phase.

Data executives must therefore define a strategy to support this transformation:

- Experimenting with generative AI on a first set of use cases via software solutions ("buy") and internal developments ("make")
- Managing the risks and the spread of AI, which can quickly get out of control without clear guidelines
- Preparing the transition of generative AI experimentations into production by:
  - Adapting the operational data model to take account of the specific features of generative AI in terms of skills, training, delivery model, etc;
  - Making the right technological choices according to its objectives and constraints.

Finally, the adoption of these new use cases will only be sustainable if users can have confidence in a technology that is not designed to be reliable. One of the key challenges of 2024 will be to bring trusted generative AI into production, within the framework defined by the EU AI Act.

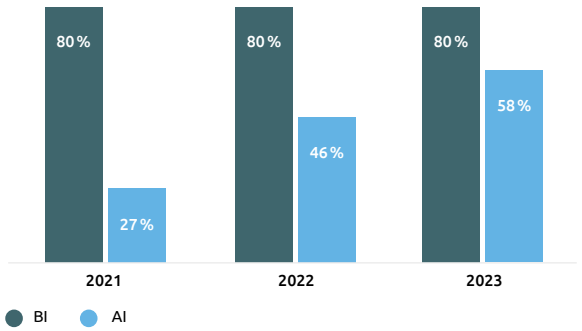
- Part 2 -

HOW ORGANIZATIONS SEEK TO TRANSFORM THEMSELVES THROUGH DATA

Companies master data and AI at scale

More and more use cases in production

Changes in the industrialization rate of BI and AI solutions



Almost **6 AI products out of 10 industrialized**
i.e. **25% more** than in 2022

We are industrializing more easily now, but the challenge is time-to-market.

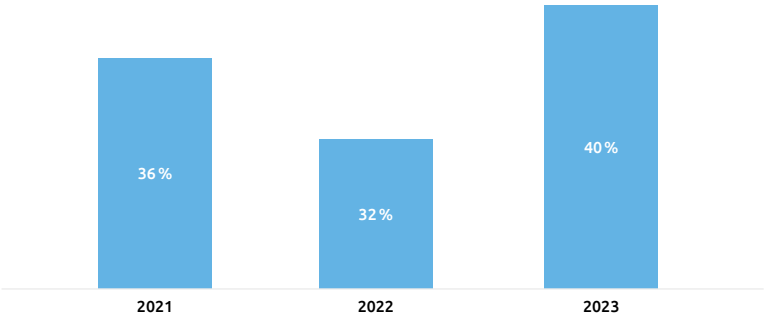
Head of AI Factory,
luxury goods sector

We have a good industrialization rate thanks to a realistic selection and prioritization of the use cases that we investigate.

Antoine Ly,
Chief Data Science Officer, SCOR

AI gaining ground in data portfolios

Change in the proportion of AI projects (vs. BI)



In 2023, AI accounts for **40%**
of use cases in project portfolios.

After a downgrading of AI projects in 2022, in favor of projects based on mastered practices and technologies, **AI is now regaining ground in portfolios thanks to:**

- The arrival of generative AI which has revived interest in AI;
- Upskilling efforts are bearing fruit, and business lines are now spontaneously reporting AI use cases;
- The development of data teams within the business units allows for more use cases to be developed, giving them ownership over their implementation;
- Investments in data foundations these last years (creation of datasets, APIs, putting repositories under control, etc.) has made it easier to deal with AI projects with greater peace of mind.

The relationship with the IT Department as a key success factor

IT Departments are more comfortable with data

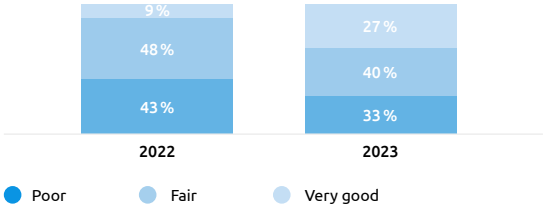
Collaboration between the IT and Data offices is improving as their respective mandates are becoming clearer, making the transition from AI to production much smoother. **As for projects, the main success factors remain:**

- The hybridization of data and IT skills (Data Engineer, Machine Learning Engineer);
- The greater end-to-end involvement of the IT Department from the scoping phase through to deployment.

In terms of strategic alignment between the IT and data offices, the CDOs see an improvement in:

- Synchronization of data and IT roadmaps;
- Better understanding of data base development needs.

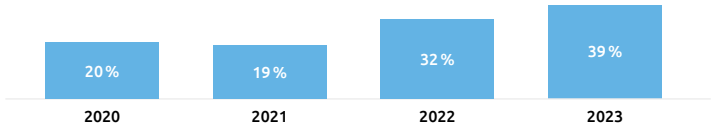
Changes in the level of data offices upskilling



The return of data to IT Departments

The changes in organizational structure which have occured over the last few years are both the cause and the result of the closer relationship between Data and IT Departments.

Changes in the share of Data offices reporting to IT Departments



In 2023,
39%
Of Data offices **report to IT Departments** – a figure that has been rising steadily over the past 3 years.

Other key success factors have been identified

- The **ability to involve** and empower the business lines thanks to the upskilling process;
- The **right technological choices** based on coherent IS ecosystems (Move-to-Cloud, Publisher Suites, etc.);
- Mastering **MVP and Agile methodologies** to deliver short-term value;
- Better control of the **AI use cases production:** integration into operational processes (AI/digital products) and integration into the IS ecosystem;
- The creation of **complementary product teams** with clearly identified roles for Data Scientist, Data Engineer, Machine Learning Engineering & Ops and Product Owner/Manager;
- A **data culture** in the business lines, which means that it is now possible to be realistic about the promise of value in use cases.

As well as new challenges

The time-to-market

for bringing products into production due to preliminary data management work (clarification of management rules, consolidation and cleaning of repositories, ingestion on the Data Platform, etc.).

Managing the scalability

of the business environment and IT environment, impacting both data and the products in production, in particular the conservation and documentation of knowledge.

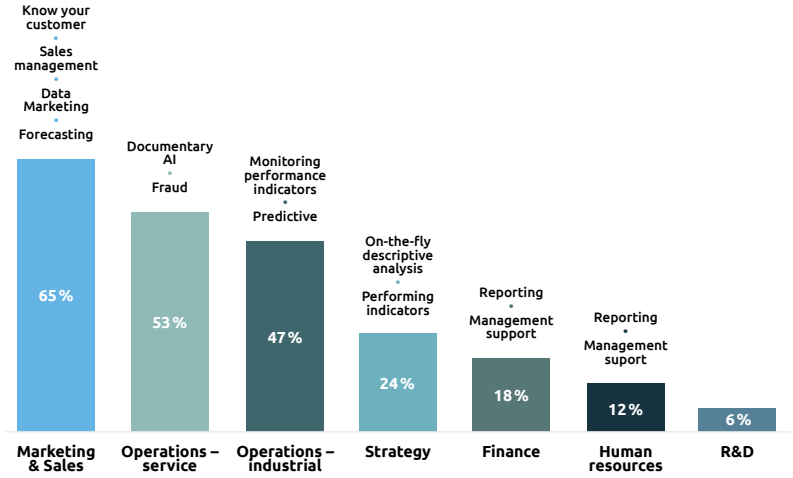
Data and AI are being adopted by everyone in companies

Use cases are covering all business functions

As in 2022, the Marketing & Sales and Operations functions are benefitting greatly from the use cases in production. The majority of use cases for the Marketing & Sales functions are aimed at improving customer relations, while the use cases for Operations are designed to improve processes.

We are also seeing a substantial increase in use cases in production to benefit strategy, as top executives have taken hold of BI as a decision-making and management aid, thanks to reliable BI systems, and of AI as a strategic priority.

Business functions with the most use cases in production, and the main "flagship" use cases in widespread use



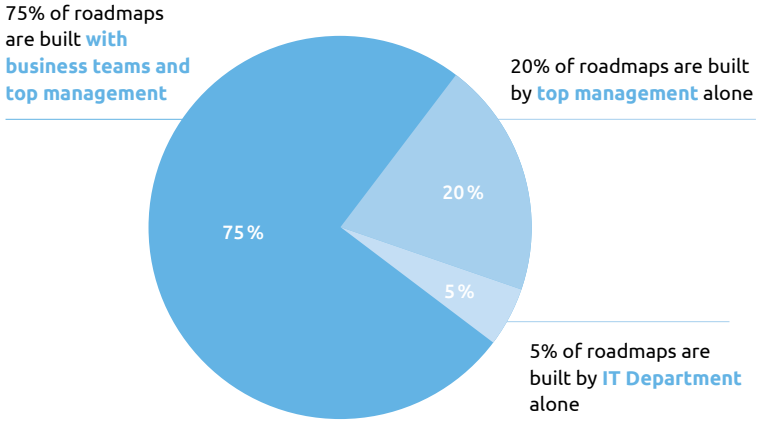
In 2023, **Marketing & Sales is** one of the **TOP 3 Business Departments** to benefit from from the most data use cases, **for 65% of companies**

Businesses are coming up with more and more use cases of their own. This phenomenon is accelerating with the rise of generative AI. »

Chief Data Officer, banking sector

Use case roadmaps built in collaboration with business teams

As data is now expected to be used to create use cases by all the stakeholders managing the transformation, the roadmaps are being built in collaboration with the main project partners:



Data is identified as a core enabler for the business transformation

Data capabilities are recognized as a key asset and are increasingly being incorporated into companies' strategic plans, often as one of the pillar of the digital transformation. As a result, most data activities are now the subject of coherent planning through an annual roadmap.

77% of Data offices have formalized a strategic roadmap

80% of companies have included data in their strategic plan

ZOOM

Data for ESG and sustainable development

Data must now face up to the challenges of ESG and sustainable development

In all the business areas managed by the Data offices, sustainable development issues are multiplying and seem to be part of the backdrop to the new challenges facing the data function.

50%
of Data offices are mobilized to meet sustainable development challenges

The dynamic around data has been accelerated by ESG needs, in particular by the desire to make our reporting more robust. »

Laurent MISSET,
Data & Analytics Director,
CHANEL

Data offices are involved in meeting ESG regulatory challenges

Data teams need to organize themselves to support the needs of the business lines. They must enhance their service offer to meet the challenges of regulatory measurement and reporting, as well as be ready to support use cases for reducing the environmental impact linked to the business activities.

Extra-Financial Regulatory Reporting

40%
of Data organizations contribute to regulatory reporting

Measuring and drawing up ESG reports remains one of the main contributions made by data teams to CSR Departments. The main difficulty encountered lies in the acquisition of granular data, in order to shift from ad hoc reporting based on orders of magnitude to industrialized dynamic management that meets regulatory obligations (in particular CSRD).

One of the difficulties is to find the right data, factualizing a situation and having a coherent measurement. »

Lilian PLACET, *Head of Data,* GSF

Data office intervention to meet operational challenges

Other ESG-related use cases mainly target issues such as reducing carbon footprint, improving energy performance or climate resilience, depending on the sector.

Share of organizations addressing each sustainable development theme, and main sectors that have taken up the subject

Decarbonization	Energy performance	Climate adaptation & resilience	Biodiversity	Quality Health Safety
48%	29%	16%	3%	7%
FMCG	Energy	Insurance	Institutions	Services
Retail / Luxury	Industry	Banking	Construction	Industry
Industry	Services	Energy		
Transport				

48% of data offices address decarbonization issues, and
29% address energy performance issues

ZOOM

Initial initiatives emerge as key success factors

To accelerate the "Data for Sustainability" approach, in order to build robust data foundations across the enterprise, and thus be able to construct "actionable"

1 **Structuring a dedicated Sustainability Data Domain**

We have created a Sustainability Data Domain as a foundation for our use cases, in particular 80% of the Group's extra-financial reports.

Charles-Antoine ROBELIN,
Head of Data Platform, DECATHLON

2 **Capturing hot/dynamic data for realistic analysis and action**

We are building up data bases and have structured a scope 1, 2 and 3 carbon data product so that we can measure with "hot/physical" data and no longer convert euros into carbon.

Alexis TRICHET,
Head of Strategy, Data & Customer Knowledge, ORANGE

3 **Feedback in operational processes and dynamic inclusion in decision-making**

Our AI models enable us to make better use of energy, by increasing or decreasing our plants' throughput, to reduce the amount of gas burnt.

Chief Data Officer, industry sector

The first major use cases are already generating value

3 examples of use cases in production, integrated into core business processes

RETAIL
INTEGRATION OF CARBON INDICATORS INTO THE REFERENCE FRAMEWORKS

Integrating carbon indicators into product or supplier reference systems, so that environmental impact is taken into account in day-to-day stock and supply management quotidien

INDUSTRY
CARBON-FREE LOGISTICS

Optimizing operations, flows and supply chains, and intelligent warehouse management

INSURANCE
CARBON-FREE LOGISTICS

Use of historical climate databases and predictive models to forecast the probability of occurrence of a climate risk and quantify its human, material or financial impact

The aim is to transform the Purchasing base into CO2 so that emissions can be managed.

Chief Data Officer, industry sector

Major challenges to be dealt with

The main challenges that data offices need to address if they are to meet the stakes of sustainable development

- **Adopting specific methodological frameworks** (carbon equivalence, life cycle assessment, etc.) to understand the data and be able to model them according to the company's needs;
- **Taking ownership** of external reference databases (ADEME, etc.) and making them available to speed up reporting and enable use cases to be created;
- **Establishing CSR data governance** throughout the data life cycle;
- **Organizing themselves** as an industry to measure and act consistently according to shared data standards between partners / subcontractors / suppliers in order to facilitate the implementation of impactful data & AI use cases;
- **Aligning CSR & data roadmaps** to identify the main levers for reducing impact, while controlling the associated data perimeter to be able to measure, act and monitor using data & AI;
- **Limiting the environmental impact** of the usage of data and AI, particularly from an energy consumption perspective.

Companies are now seeking to transform themselves through data

Generating value at every level of the company

In order to create value through data, the expectations and needs of the company are evolving, prompting data offices to diversify their range of services so that they can play the role of Doer, enabler and strategist all at the same time.

The CDOs are expected to act as strategists to bring about in-depth change

CDOs are increasingly mobilized in their role as strategic advisors to make the most of the opportunities generated by data & AI and impact the company's business model.

We are working directly with the CEOs and functional management of the various companies to think about the major strategic use cases beyond the instruction of operational quick wins that bring immediate value.

Sophie GALLAY, *Group Data Director,* ETAM

The ambitions driven by data are part of the company's overall strategy. One of our key objectives, for example, is to promote and support innovation across the Group.

Chief Data Officer,
banking sector

Our overall ambition is to support the business, which has an EBITDA improvement program to which we contribute.

Fabien DENEUVILE,
Head of Data Science,
Modulaire Group

Business models still relatively unaffected

Now that they have the capacity to deliver the right use cases to serve the business lines and to deliver tactical gains in operational efficiency, the Data & AI Departments need to demonstrate their ability to generate strategic advantages and new revenues to impact the company's business model.

80%
of companies are now seeking to create value by acting on both their costs and their revenues.

Value creation on the top line

- Turnover
- Market share
- Sales volume
- Average basket

€

Value creation on the bottom line

- Costs
- Margin
- Productivity

Data used to be fairly operational (internal uses), but now we're looking for growth: we're now fully supporting the value proposition, with data services and products integrated into our catalogue of offerings.

Group Chief Data & Digital Officer,
services sector

Value potential still poorly estimated at company level

ROI rarely measured in production

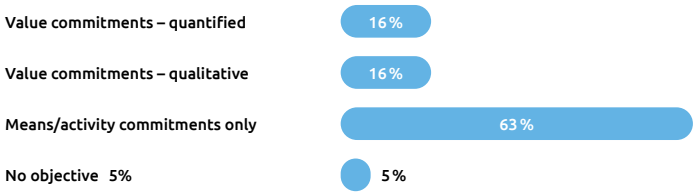
Estimating ROI upstream of projects has become commonplace for the purposes of prioritization and sponsorships. However, the real value generated by data and AI solutions is still largely unknown.

A lack of value-based management

2/3 of Data offices manage their activity exclusively on the basis of resource or activity objectives. The remaining third are partially committed to business metrics, but without any quantified commitment.

It is clear that a large part of the value generated remains diffuse and qualitative: customer/employee satisfaction, image, risk mitigation, etc. Nevertheless, estimating the euros saved or gained thanks to data remains a prerequisite for asserting its legitimacy and convincing the business units.

Type of objectives pursued by Data offices in 2023



Only
16% of CDOs are incentivized on quantified value creation objectives.

Data Departments struggle to scale up their impact

Data Departments struggle to develop use cases that can be replicated at a corporate level: impact on several Business Departments, deployment on significant geographical scales (several plants, several countries, etc.). The use cases developed so far are mainly tactical and meet specific, not very cross-functional, needs.

A number of difficulties have been identified:

- Disparity of business processes;
- Disparity of IT systems;
- Dimmature platforms;
- Data governance that does not allow for uniform and consistent scaling up.

In order to land emblematic projects, Data Offices need to refocus their efforts on implementing a "fertile" ecosystem by providing the necessary capabilities (Data Platform, data and tools governance framework, self-service offer, organizational model deployed, etc.).

We prioritize the scaling up of current use cases over the development of new Proofs of Concept. This enables us to demonstrate the value added to the business units, and therefore to better engage them in the ongoing transformation projects. »

Hind MECHBAL,
CIO, CCR RE

Data Offices expected to act as enablers of large-scale, rapid transformation

Having deliberately taken on the role of Doer in the early stages, CDOs are now seeking to position themselves as "Enablers" to increase their capacity to industrialize and cover all the opportunities for creating value through data.

To achieve this, Data Offices seem to want to dedicate their strength as Doers to the implementation of strategic use cases for the group, and delegate the realization of tactical use cases to business teams so that they can concentrate on their role as enablers.

> **It is not the role of the Data Department to take on the entire data value chain; our value tomorrow should be in the high-level part and in building capacity.**
> *Group Data Director,* luxury goods sector

Expectations of the Data Office acting as an enabler come from both the business teams...

1. The upskilling programs launched in recent years and the level of data culture among the business populations mean that they are now able to identify use cases, express their needs and request the resources to implement them on their own
2. Certain no code/low code technologies are seen as accelerating decentralization (mainly PowerBI and Dataiku)
3. Mature business units want to be able to experiment autonomously, without being involved in formal project processes

...and the IT Department

1. Growing expectations from IT Departments to include data as a pillar of IS programs (CRM, ERP, E-Commerce, etc)
2. gital products requiring data expertise to build robust architectures and a coherent digital ecosystem

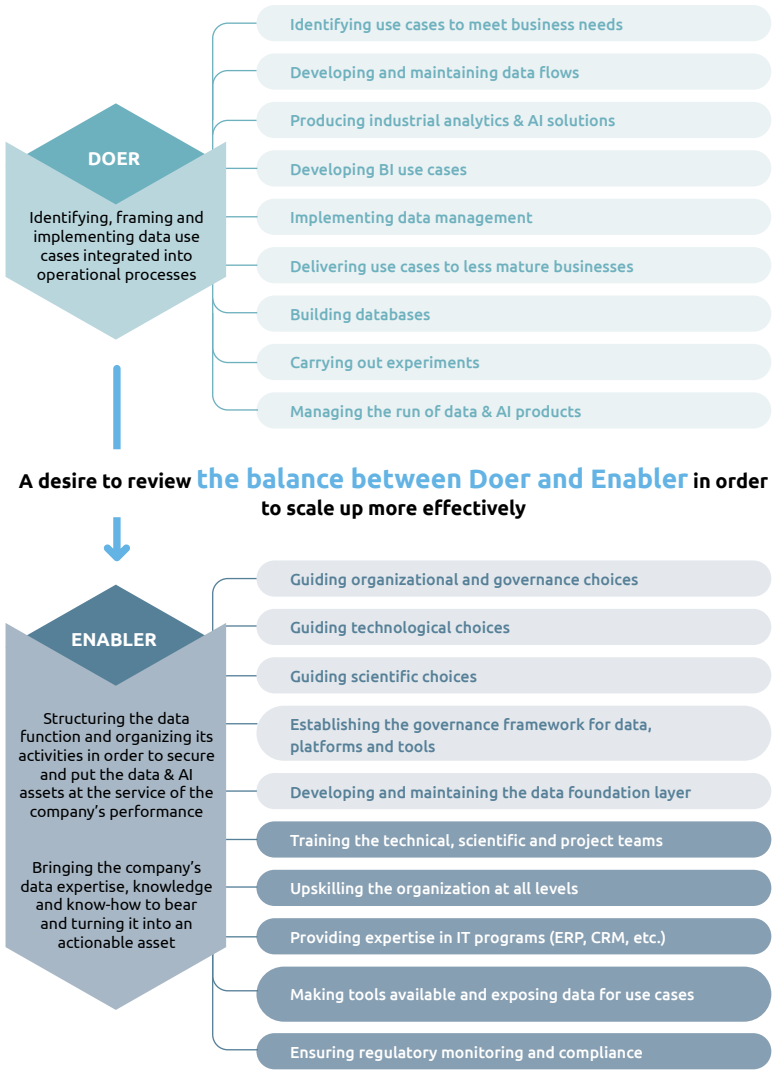
The majority of respondents feel that their main **focus is on "delivering finished products",** and

more than 60% of departments

want to move towards a "provision of resources" service offer

The need to rebalance the services offered by Data offices

In order to scale up, the most mature data offices must gradually hand over the production of "tactical" use cases to the business teams, and rely on hybridization and Data Mesh to avoid becoming a bottleneck in the face of the increasing volume of use cases to be dealt with. So they take on the role of enabler.



> We have put in place a data service offer for everyone: providing tools to facilitate implementation from data exploration to industrialization.
>
> *CDO,* a services player

> Today, we mainly work with finished products; we need to establish self-service governance to make data available and respond to the business craze around PowerBI.
>
> **Lilian PLACET,**
> *Deputy CIO Office,* **GSF**

> We have succeeded in spreading the use of Dataiku, which now covers 80% of our Data Science projects.
>
> *Chief Data Officer,* banking sector

> Our aim for 2023 is to move closer to a 50/50 split between finished products and the provisioning of tools.
>
> **Laurent BEUGNET,**
> *Chief Data Officer,* **Orano**

Summary and analysis

The Data offices are now effectively delivering value in a tactical way, thanks to their mastery of the industrialization of use cases for the benefit of all the company's business lines. However, although use cases are now in production and the calculation of a forecast ROI per project has become systematic, the contribution of data to the company's strategic challenges is still difficult to estimate and quantify.

This value generation through use cases seems to come up against two difficulties:

- The bottleneck position of the data office in its role as Doer;
- The scaling up of use case.

At the same time, the data culture of the business units now enables them to be autonomous in the proactive identification of use cases and sometimes in their implementation. However, these teams are now looking to the Data offices in their role as ENABLER to structure a fertile ecosystem (tools, data, skills and governance framework) and promote innovation for the business.

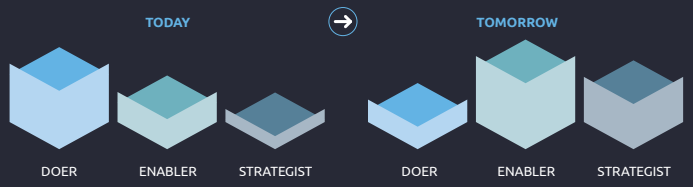
On the other hand, Data offices are now expected by their Executive Committee to act as STRATEGISTS to successfully impact business models.

Data Offices are therefore expected to play a triple role in addressing value creation at all levels of the company:

- Data as a STRATEGY, for executives and top management who need a technological/business vision;
- Data as an ENABLER, for Business Departments in need of autonomy and robust capabilities;
- Data as a Doer, to accelerate the company and the transformation of less mature business lines and cross-functional departments.

Organizations today are looking to rebalance their service offering to better distribute the Doer role and better meet expectations in their role as enabler and strategist. To achieve this, data offices will need to rely on an appropriate operating model and mature, consistent governance of platforms, data and tools.

Transforming the role of data offices to meet the challenges the company faces



- Part 3 -

THREE MAJOR CHALLENGES TO BE MET IN 2024 TO GENERATE DATA-DRIVEN VALUE

Challenge #1
Being part of the company's strategic agenda

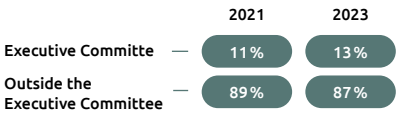
A function still too remote from the Executive Committee?

Data & AI initiatives transform ways of working, organization and often even customer/supplier/employee relations, and as a result, Chief Data Officers (CDOs) play an increasingly strategic role within companies.

However, since the role of CDO emerged, its hierarchical position in relation to the Executive Committee has not changed much.

Less than 15% of CDOs report directly to the Executive Committee. This applies to companies of all sizes and maturities, but they all share one thing in common: a desire to accelerate the use of data as a means of differentiating themselves or catching up with the market.

Share of Data Departments reporting to IT Departments



In 2023, only **13%** **of CDO** report directly to the Executive Committee

The majority of data offices are two levels below the Executive Committee, but many CDOs and data professionals are campaigning for a more direct link with top management, with the aim of gaining greater visibility and influence over the company's strategic agenda.

While this may be beneficial, it is not strictly mandatory. In fact, the most mature CDOs has already developed their position as leaders and their ability to influence without being formally attached to the Executive Committee. **To succeed, they rely on 3 principles.**

1. Putting data and AI on the agenda of decision-makers: moving from awareness to action
2. Being part of major IT and digital transformation programs as a cross-functional third party player
3. Being part of business transformations: build strong, ongoing partnerships with Business Departments to co-construct common trajectories

1

Putting data and AI on the agenda of decision-makers: moving from awareness to action

Since 2020, the most mature CDOs have generally given a prominent place in their roadmaps to the data & AI upskilling of executives and top management. On the whole, the programs that have been launched have borne fruit, enabling data to be included in companies' strategic plans with dedicated budgets.

However, the data and AI ecosystem evolve rapidly, driven by major advances:

- Technological (e.g. generative AI);
- Regulatory (e.g. the European AI Act);
- Socio-economic (e.g. impact of AI on employment and work organization).

Increasingly, decision-makers turn to the Data Department to help them decrypt these challenges. The ability of CDOs to act varies according to their maturity and scope of action. The most mature of them seize the opportunity proactively, to step outside their natural remit and lead interdisciplinary think tanks in order to propose company-wide strategies via a range of services.

In this way, they take on a more strategic advisor-type of role rather than simply evangelist one. The less mature ones, usually more focused on a Doer role, tend to adopt a wait-and-see attitude.

To meet these advisory expectations, Data Departments also take on new mandates:

- **Proposing a strategic interpretation of technological trends**
  Ensuring that they are able to "digest" technological disruptions such as generative AI by experimenting rapidly, so that they can build up convictions about the potential for the company and the opportunities that may or may not be seized.
- **Representing the company within the data ecosystem and the industry**
  Raising the profile of the company's data initiatives within the sector and among tech players, so as to benefit from technological partnerships, remain at the cutting edge, be at the heart of sector thinking and thus be a market maker and drive the transformation of the company.

2

Taking part in major IT and digital transformation programs as a cross-functional third party

Data Departments are increasingly expected to contribute their expertise to cross-functional programs. To meet this need, they put themselves in a position to be part of IS programs and participate in the overall coherence of the company's IS (business rules, data models, architecture decisions, etc.) to lay out the foundations for future use cases.

The value of data depends largely on its ability to circulate unhindered throughout the enterprise. In a bank, for example, the data produced within the payment division is of major interest to marketing, in terms of customer knowledge.

However, data is still largely siloed by design, making it difficult to cross organizational barriers. This is due to a lack of recognized leadership and resources for cross-functional data transformation, which is pushing business units to prioritize the data initiatives that will directly benefit them in their own areas.

Instead of operating within organizational divisions, the most mature CDOs act as third parties. They align the interests of the business units that produce and consume data, secure sponsorship and, where necessary, call on the businesses to pool their resources on joint projects.

This involves launching "foundation" projects to prime the pump: identifying high-potential cross-functional playing fields (core business data areas, for example) to prepare the data assets for third-party use by the business units, and encouraging the development of use cases.

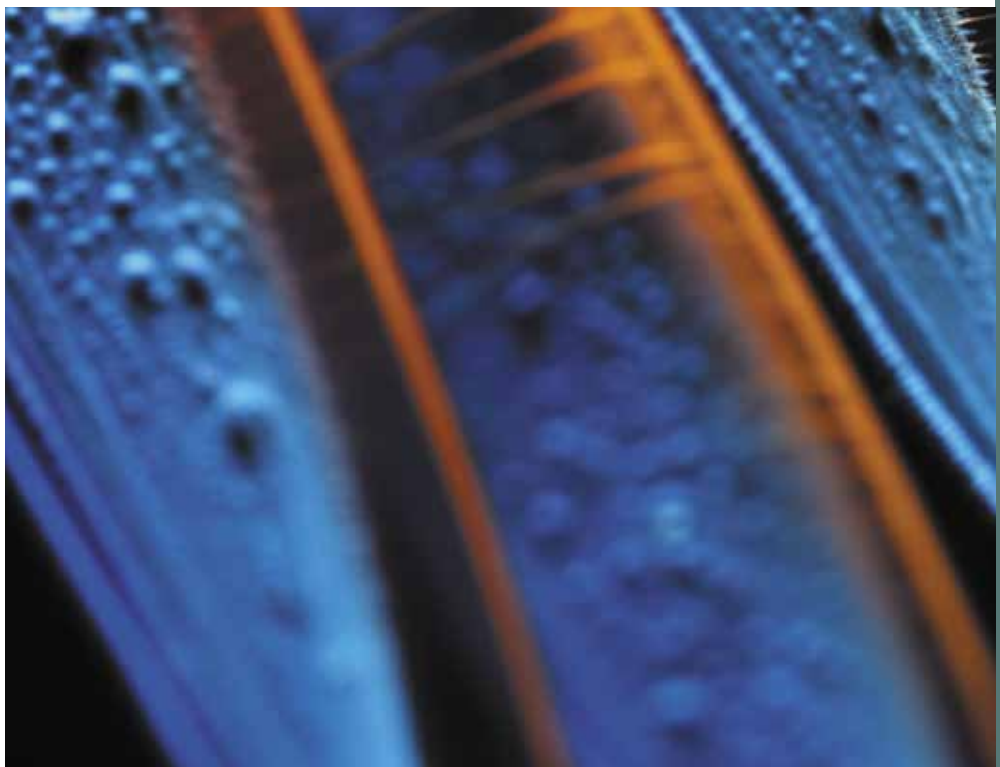
3

Being part of business transformations: build strong, ongoing partnerships with Business Departments to co-construct common trajectories

The most mature Data Departments now find themselves in a position to co-sponsor ambitious business/data projects. They blend data into the company's business model through robust, mature products, built to last and embedded in business processes (or in product catalogues, service offers, etc.).

This results in mature products that integrate, for example, the service catalogues offered to customers as a market differentiator.

This close collaboration involves supporting the business line in the business thinking behind the leverage of data (data product business model, data monetization, etc.) and aligning the CDO/Management teams.



SUCCESS STORY

Leader in the **engineering sector**

Challenges

Aimed at becoming a world leader in the engineering and mobility sectors, the group has initiated a major business transformation plan. It is keen now to make rapid progress on its data transformation to turn it into a major growth accelerator for the group.

A significant evolution of the data value proposition was therefore expected to support the company's operational and strategic challenges.

Approach

In order to build a holistic value proposition, the central organization in charge of data defined and implemented a comprehensive strategic plan with a 2/3-year time horizon based on:

- The Group's ambitions, in order to define quantified objectives;
- The Group's transformation needs, to use data as a foundation for IS and digital programs (CRM, ERP, BI, etc.);
- The operational needs of the business teams, to identify the right use cases (AI, Optimization, etc.).

This strategic plan was then rapidly put into motion across all the dimensions of data (Data Platform, use cases, deployment of the data function, data foundations, etc.), thanks to strong sponsorship of the Executive Committee and good synergies with the Group's other transformation programs (IT & Business).

The target operating model has been defined, taking into account the specificities of the business lines, such as their varying degrees of maturity, the data complexity to be addressed, and the request for autonomy from the data management teams. This is one of the reasons why the Group opted for the rapid deployment of a Data Mesh approach, both technically and organizationally.

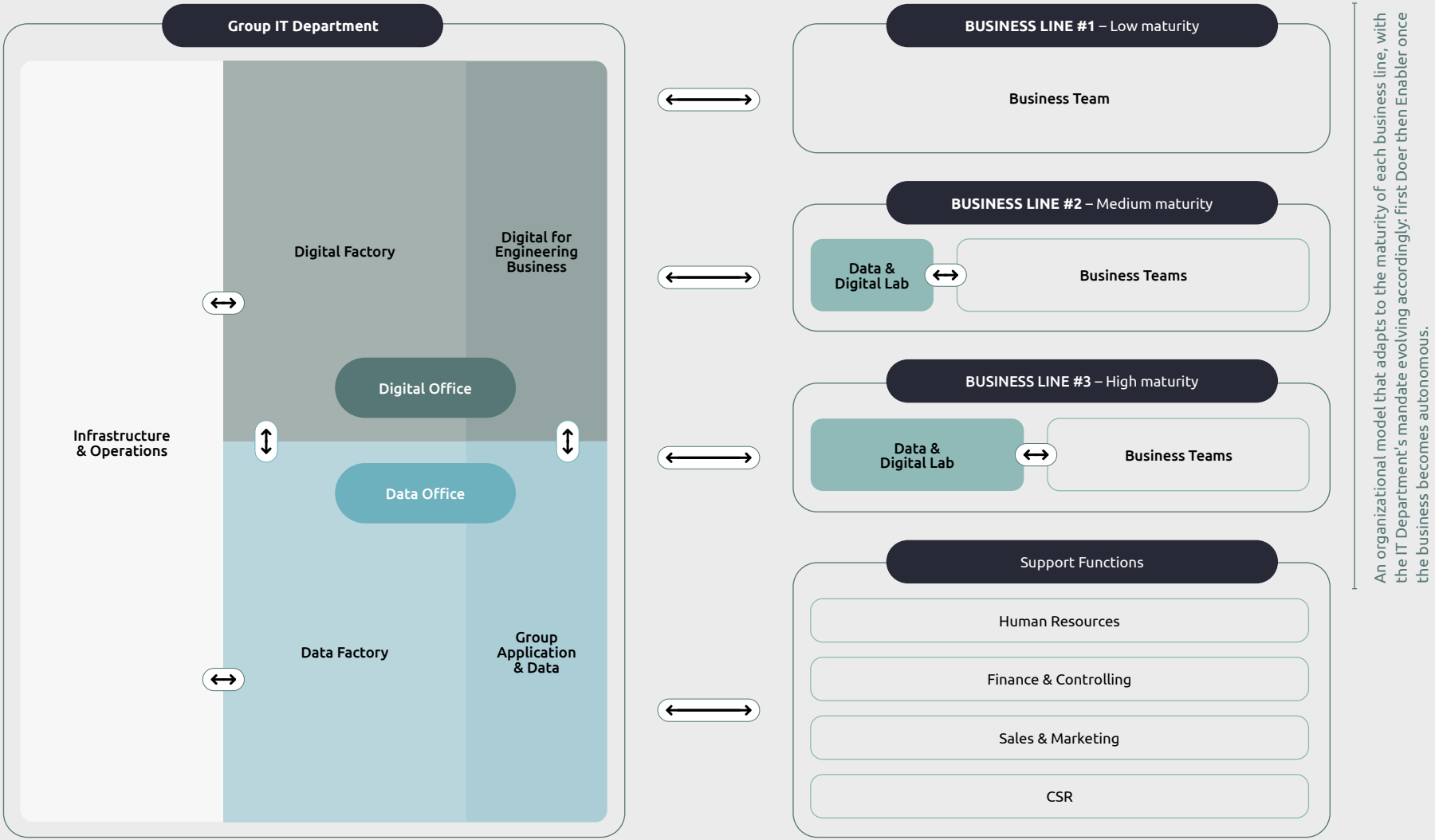
Results

- A clear, structured and shared vision of the Group's data strategy for the business lines;
- 5 major dimensions addressed in parallel to structure and drive the data transformation over 2 years;
- An organizational model and governance framework enabling us to:
  - Rapidly structure the activities and ensure the ramp-up of the business lines;
  - Adapt the level of hybridization and the service offer of the Data Factory and Data Office according to business needs, the areas concerned and the types of project: delivery of finished products, data or expertise provisioning, etc;
- A new process for valuing data/AI use cases that validates the economic, business and environmental benefits of use cases in collaboration with the Transformation and Finance Departments;
- A new Cloud Data Platform designed according to Data Mesh principles, capable of supporting the Group's data and technological transformation. This platform acts as a third party providing an ecosystem to deliver cross-functional and local use cases and providing tools for the digital transformation of the business lines;
- The first data/AI use cases are valued, framed and developed by the Data Factory and by local data entities from the very first months of the transformation for the core business and support functions.

Example of an organizational chart for the data function in engineering

SUCCESS STORY

A digital entity close to the core business teams to transform activities in depth by leveraging the power of digital and data products for engineers.



Collaboration between IT and support functions to provide effective support for cross-functional programs, drawing on the strength of the Data Factory

ORGANIZATION & DATA MESH ARCHITECTURE

- Data as a Product
- Data Contracts
- Data Product Owners

↔ **Interfaces defined according to a common and shared data governance framework:** mandates, roles, processes and comitology

SUCCESS STORY

Example of an organizational chart for the data function in engineering

Main data activities by entity

Data Office

- Data Strategy
- Data Governance & Data Management
- Training & Upskilling
- Recruitment & Organization

Infrastructure & Operations

- Data Platform Infrastructures
- Tool management & Administration
- FinOps

Data Factory

- Methods & Standards
- Data Platform Management
- Product Development

Digital for Engineering Business

- Portfolio Management
- Product Management

Group Application & Data

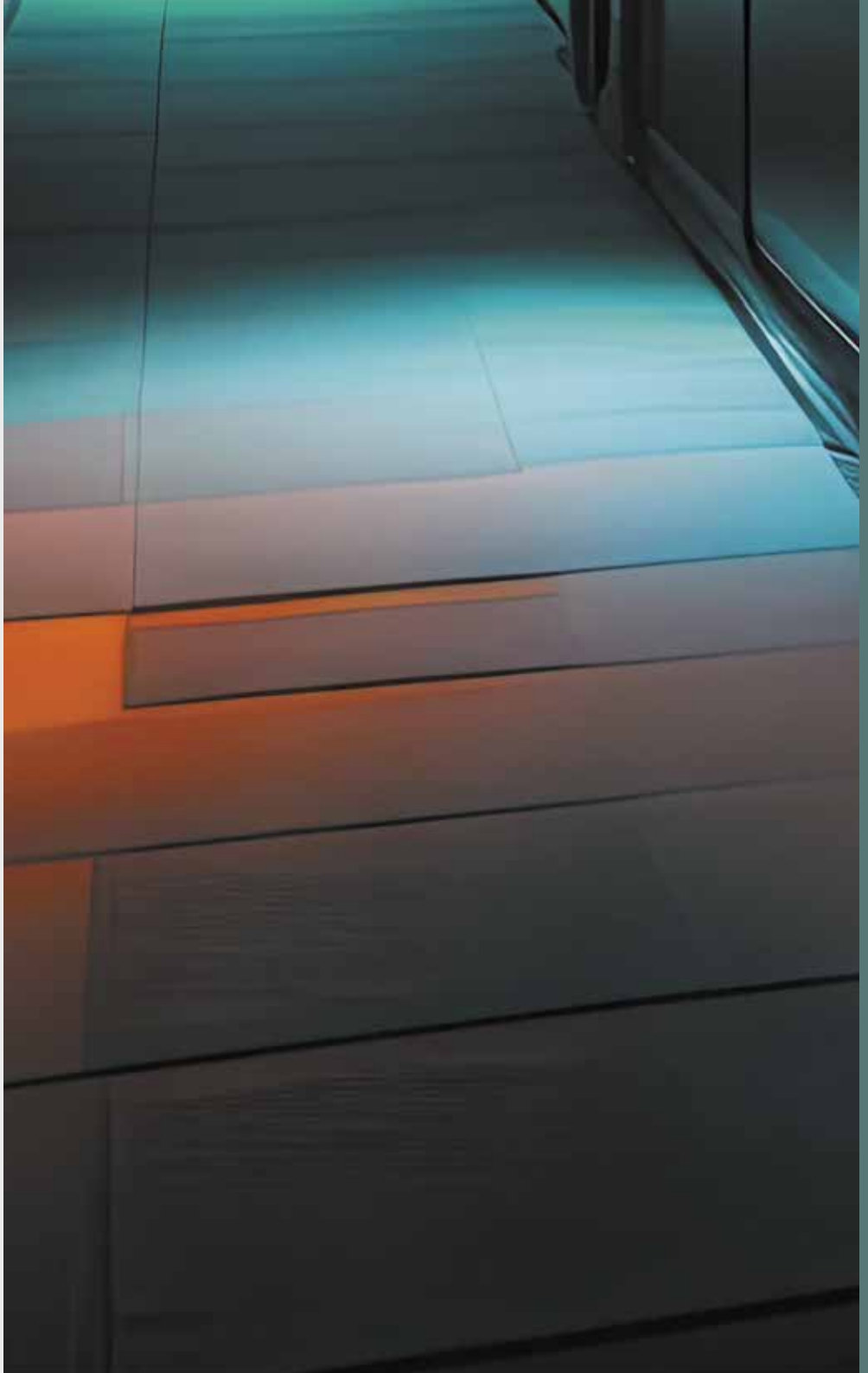
- Portfolio Management
- Product Management

Data & Digital Lab

- Portfolio Management
- Product Management
- Product Development

Business Team

- Data Product Ownership
- Ideation & Requirement Specifications
- Participating in Upskilling Sessions



Challenge #2
Operating data offices through value

Value commitments shared by both the business and the data office

More mature companies ask for shared business commitments from the CDO and the business lines to strengthen the alignment of their roadmaps.

This approach is generally based on the following principles:

- Each business line commits to an annual data cash-in in Euros;
- Projections are set jointly with a business representative attached to the data office, who is himself/herself incentivized;
- To achieve the objective, each representative helps his or her business line to:
  - Design a roadmap;
  - Steer the implementation of use cases in conjunction with the Data and IT Department.

The Finance Department as a partner

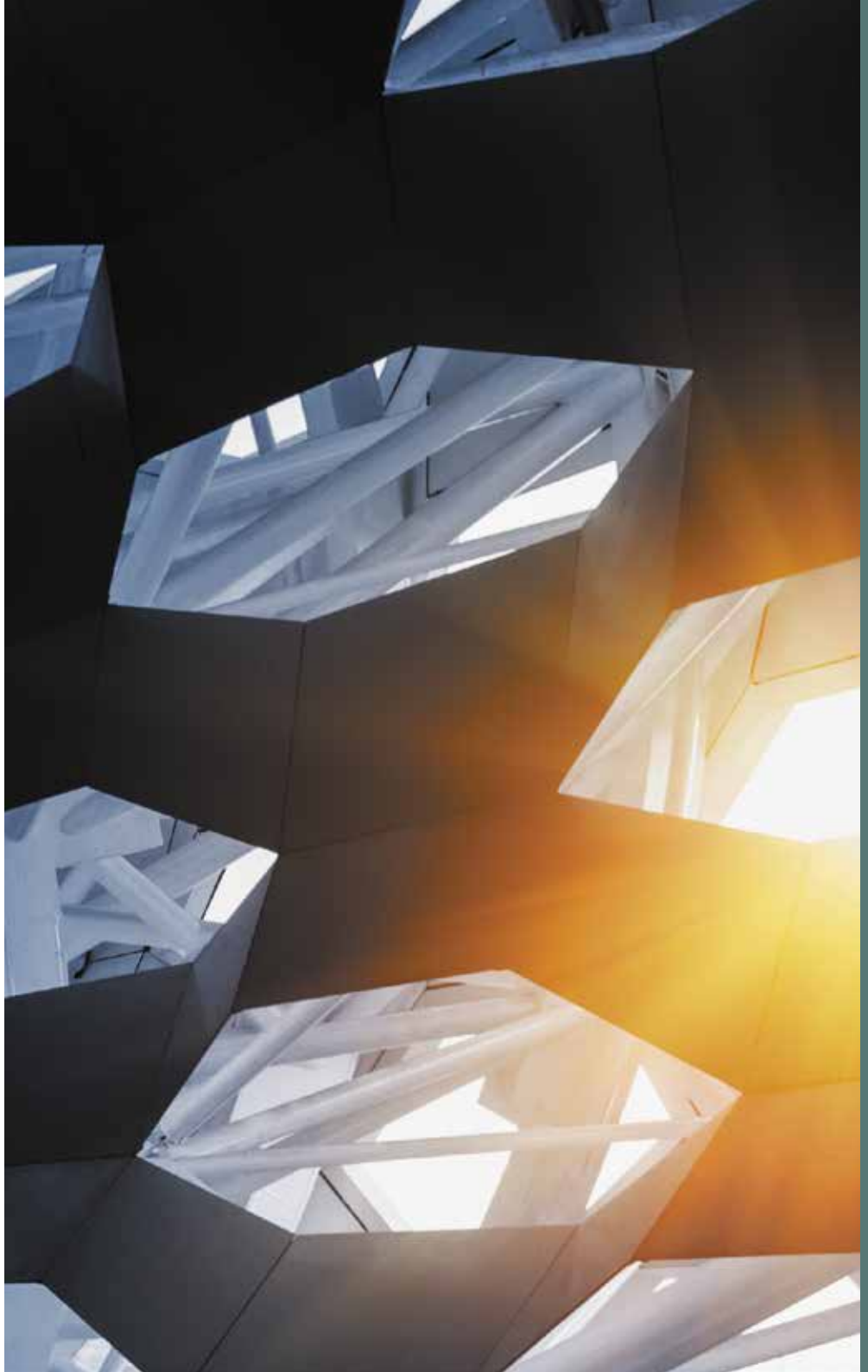
To fully assume their role as strategists, mature CDOs have set up measurement systems in collaboration with the Finance Department[1].

This Department is mainly involved at 3 levels:

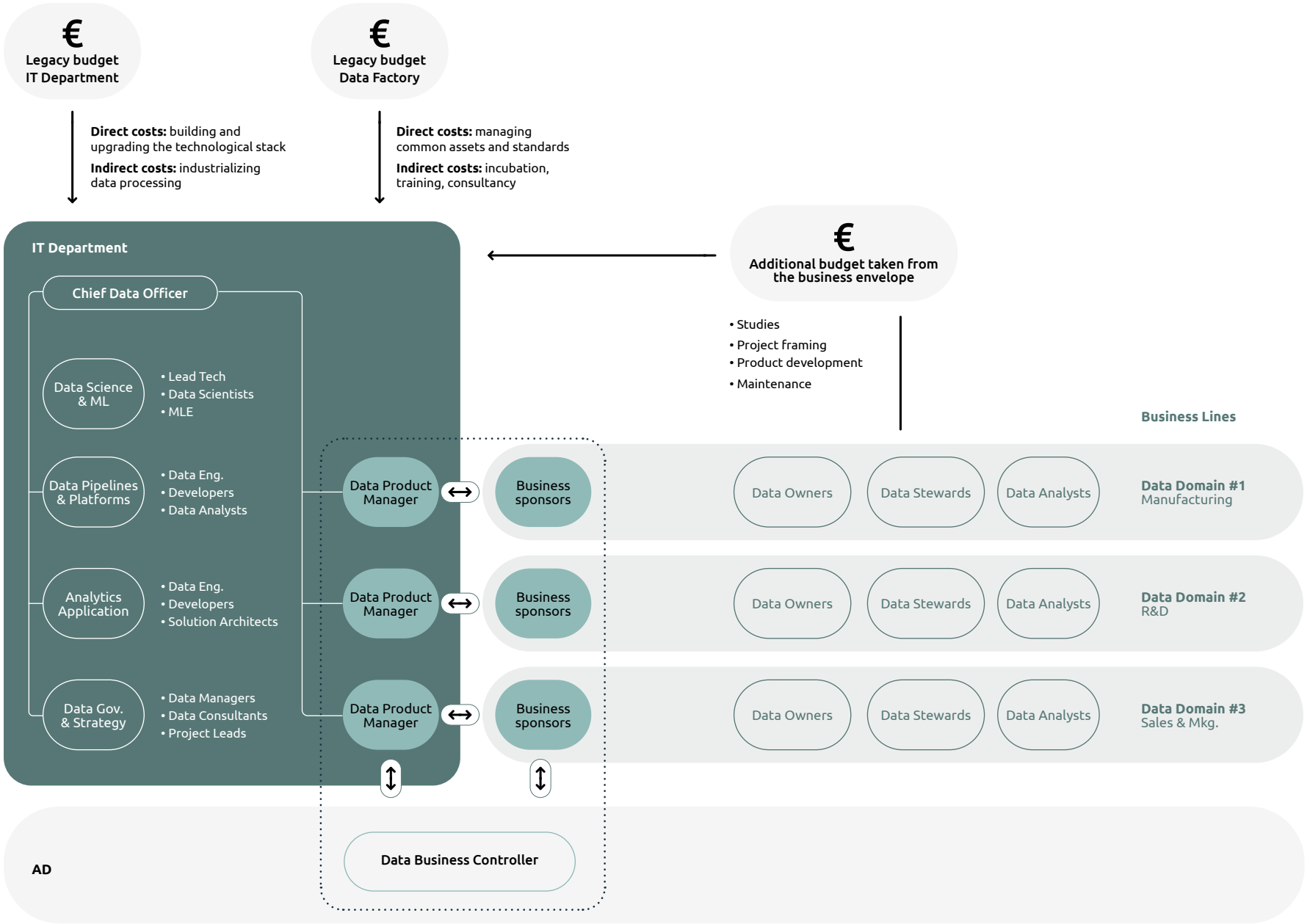
- Defining the costing methodology;
- Checking the assumptions for each use case;
- Validating the results.

This is a way for the business units to secure their business objectives, and for the data office to legitimize its value proposition and its requests for investment or resources.

(1) In some cases, the Transformation Department can act as a partner.



Example of a ROI-driven data organization at an industrial player (simplified organization chart)



A valuation method to be formalized

Formalizing end-to-end steering

Most companies have put in place a value-based steering process before launching data projects, to prioritize opportunities and target promising use cases. However, only the most mature companies monitor the value generated during the development and the run phases of the data solutions' life cycle.

This exercise requires a regular review of the portfolio and is increasingly supported by dedicated dashboards, enabling data, IT and business teams to centralize information on the usage level, availability and performance of data solutions.

Formalizing the pricing of use cases

Mature businesses rely on valuation methods based on 4 elements.

1. **Economic model:** what metrics should be used for valuation? (e.g.: ROI, cash-in, score, etc.)? How can each metric be estimated on the basis of known values (e.g. number of hours saved x average hourly cost x number of users)?

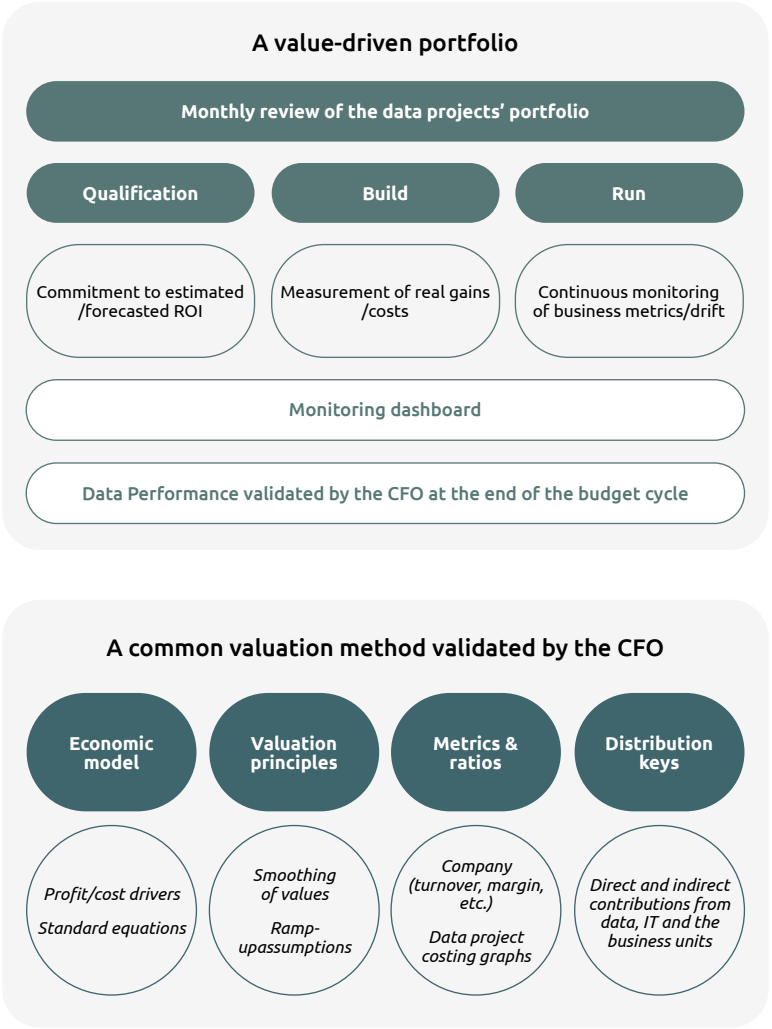
2. **Valuation principle:** what are the calculation rules and assumptions used to simplify/strengthen the estimate (e.g. standard adoption curves, average annual growth rates, etc.)?

3. **Metrics & ratios:** what are the key figures or orders of magnitude to be used by default (e.g. turnover, average salaries, hosting costs, etc.)?

4. **Distribution key (optional):** how should the value generated be distributed between the Data, Business and the IT Departments in the context of formal intra-company accounting?

These methods simplify the estimation work, make comparisons between projects more reliable and generate greater consensus around the estimates.

Example of a state-of-the-art valuation method used by an industrial player

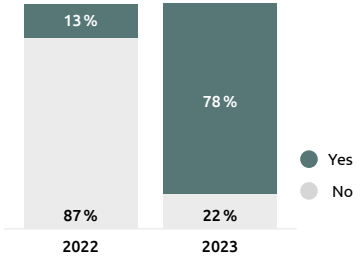


Challenge #3
Leveraging the impact with a Data Mesh approach

A model that continues to grow in popularity

The proportion of companies relying on Data Mesh concepts to transform their data organization has jumped from 13% to 78% within a year. Still in the exploratory phase, most companies deploy the model on a limited number of data domains, and only test the first data products in runtime conditions. However, the majority of respondents are enthusiastic and wish to continue in the direction chosen for 2024.

Implementation of Data Mesh concepts within the companies surveyed



We're right in the middle of a Data Mesh implementation, in particular to accelerate our speed on data fundamentals (platform & data governance) via the definition of data domains and the creation of our Data Platform Office.

Antoine LY,
Chief Data Science Officer, SCOR

We have a target of six data products by the end of the year. We already have one in place on the personalized recommendations algorithm, for example. With a top-down approach, we find it more difficult to identify data products that are likely to provide a direct response to the needs expressed by top management, even though some very good ideas are beginning to emerge.

Brice MIRANDA,
Data, AI & Automation Deputy, ORANGE

The Data as a Product approach is part of the target objectives.

Chief Data Officer, banking sector

Certain architectural choice are based on Data Mesh concepts, particularly in terms of data access.

Loïc BRIENT,
Chief Data Scientist, BPCE

We want to move towards a Data Mesh organization from next year onwards, to decentralize infrastructure management and thus lighten the load on our data lake processes.

Head of AI Factory, luxury goods sector

A response to the challenges Data and IT Departments face

Data Mesh addresses issues shared by most Data Top Executives:

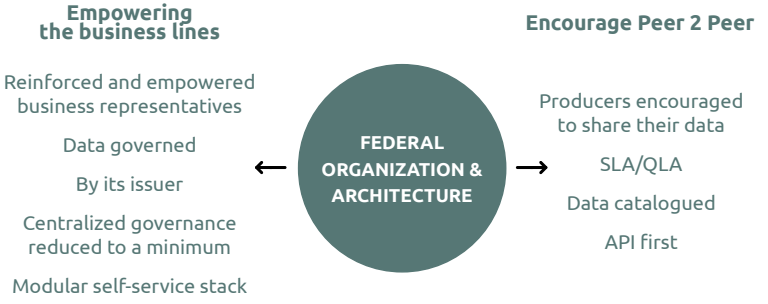
- Undersized centralized teams vs. growing business needs;
- Heterogeneous data practices across the organization;
- Governance rules difficult to enforce;
- Siloed data with little sharing.

In response to these challenges, the Data Mesh offers a clear vision:

- Empowering professions as much as possible by giving them the mandate, incentives and necessary means;
- Promoting the exchange of data between peers without going through the systematic intermediation of the Data Office.

DATA MESH OBJECTIVES

1. **Reducing bottlenecks** on centralized teams
2. **Keeping business lines** as close as possible to the data
3. Facilitating and extending the **use of data** beyond silos
4. **Clarifying everyone's responsibilities** with regard to data



From the outset, we planned to leverage a Data Mesh approach because the subsidiaries are very independent, with independent P&L and legal status. So today we can say that each company has its own data lake, and bridges have been created. »

Chief data Officer, **industry sector**

Since last year, we have been looking to move towards a Data Mesh approach, to improve access to data. »

CDO, **luxury goods sector**

An in-depth transformation of the data organization

Data Mesh is first and foremost an organizational transformation aimed at decentralizing data management (self-service, data self-management by the business line, etc.), while providing the consistency needed to ensure that data flows unhindered throughout the organization (standards, common foundations, interoperability, etc.).

From a technological point of view, Data Mesh doesn't rely on particularly innovative architecture components (e.g. Data catalogues, ETLs, Data lakes etc.).

It is the alignment between technology choices and organizational transformation that represents the real innovation.

4 fundamental principles*

1 – Domain Ownership
- Delegating data management to the business units closest to the context in which it is used;
- Promoting peer-to-peer exchanges without intermediation.

2 - Data as a Product
- Empowering multi-disciplinary teams throughout the data lifecycle;
- Promoting a reliable and autonomous usage, in particular via APIs and SLAs.

3 - Federated Computational Governance
- Balancing Data Domains autonomy with the enforcement of collective standards (interoperability, security, etc.);
- Encouraging the implementation of standards directly in the Data Products' "code".

4 - Self-Service Infrastructure as a platform
- Enabling users to build their technical stack on a common foundation guaranteeing interoperability;
- Offering centralized capabilities that are useful to everyone (e.g. data catalogue).

* Source: Zhamak Dehghani, Capgemini Invent, Internal Research

4 lessons learned in the field

1

Managing the transformation in a unified way

All too often, Data Mesh projects emerge independently across the company in an uncoordinated way. But the main contribution of Data Mesh is precisely to offer a common vision, vocabulary and trajectory to the company's multiple stakeholders.

Make sure you have
- An official and visible program at the Executive Committee level;
- A dedicated leader with the associated governance.

2

Prioritizing organization before technology

Data Mesh is first and foremost an organizational transformation. Organizational and governance choices must take precedence over technological choices.

Make sure you have answered the key questions before embarking on technological transformations or developing data products:

- How are the responsibilities between Data, IT and the Business Departments redefined?
- Who is responsible for building and operating data products?
- What skills and resources are needed to make this happen?

Transforming the organization

Creating new structures (e.g. Data Domains)

New ways of working (e.g. product mode vs. project mode)

New roles (Data Product Owner)

Change of culture / incentives (data sharing vs. data siloing)

Transforming the architecture

Stack Modularity

Components' Interoperability

Harmonization of semantic models

Implementation of an observability layer

A gradual, targeted transformation

Organizations are taking up these challenges gradually, focusing on the Data Mesh elements that they consider to be priorities.

Examples of Data Mesh strategies applied by companies in various sectors

	Banking stakeholder	Automotive stakeholder	Retail stakeholder	Transport stakeholder	Healthcare stakeholder	Entertainment stakeholder
Domain Ownership	Each business object is assigned to a Data Domain • Data Domain Owners in place with a dedicated budget	Data Factory delivery teams structured according to functional domains (vs. technical breakdown)	Corporate and regions aligned with Data Domains	Structuring of Data Domains with Business Units • Identification of the main business objects	1 Data Domain per business line • Business line ownership of each domain • Alignment of operating principles between Data Squads and Digital Products	1 Data Domain per business line • Business line ownership of each domain • Alignment of operating principles between Data Squads and Digital Products
Federated Computational Governance	Cross-domain governance • Interoperability standards		Standardization of local organizations and regional governance • Central backbone for producing replicable use cases	Cross-business agreements and alignments on Data Policy and Sharing Strategy • Definition of common processes	The operational model is aligned among entities	The operational model is aligned among entities
Data As a Product	Data Contract Framework • Data product templates • API platform	Standardization of exposure formats based on use cases		Agreements and alignments on data exposure standards (Data Product)	Product approach • Standardization of Data Products	Definition of three types of Data Product: Data Analytics, Data Science (API) and Dashboard products
Self-Service Infrastructure as a Platform			Standardization of interfaces with the Group Data Platform • Choice imposed on stakeholders	A single group-wide service offer (Snowflake)	Data Products exposed through a single solution	Data Products exposed through a single solution (Snowflake) with dedicated spaces per Data Domain and three storage layers (Raw, Silver, Optimized)

- High implementation
- Medium implementation
- No implementation

3

Staying pragmatic

Data Mesh offers a useful theoretical framework, but it's important to test predictions against the reality on the ground. Successful companies follow their own unique transformation path.

Make sure you have

- a pragmatic, iterative approach tailored to your own maturity and priorities

4

Delivering results quickly

Data Mesh is a profound and progressive transformation. However, you need to pace your efforts towards realistic goals in order to maintain the momentum.

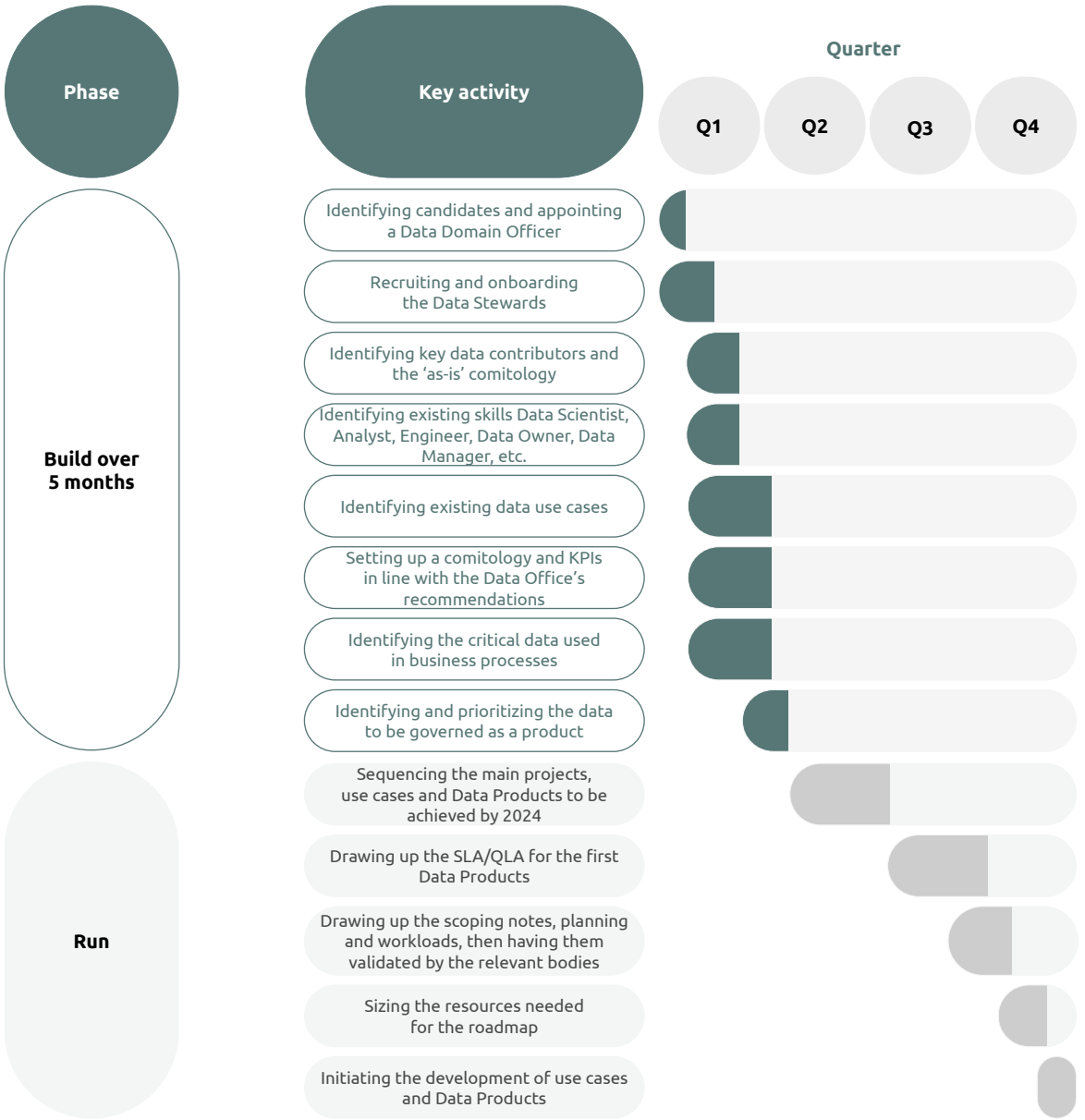
Make sure you have

- split the deployment into phases: launch no more than two to four Data Domains at a time
- chosen your Data Domains carefully: give preference to those that are committed to a customer/data supplier relationship with a good level of sponsorship
- produced Data Products quickly: aim to develop a Data Product in six months or less

We try to promote a Data Product approach. We don't use the term Data Mesh, because at the moment it doesn't really resonate with decision-makers. »

Brice MIRANDA,
Data, AI & Automation Deputy, ORANGE

Example of a typical roadmap for deploying a Data Domain



Summary and analysis

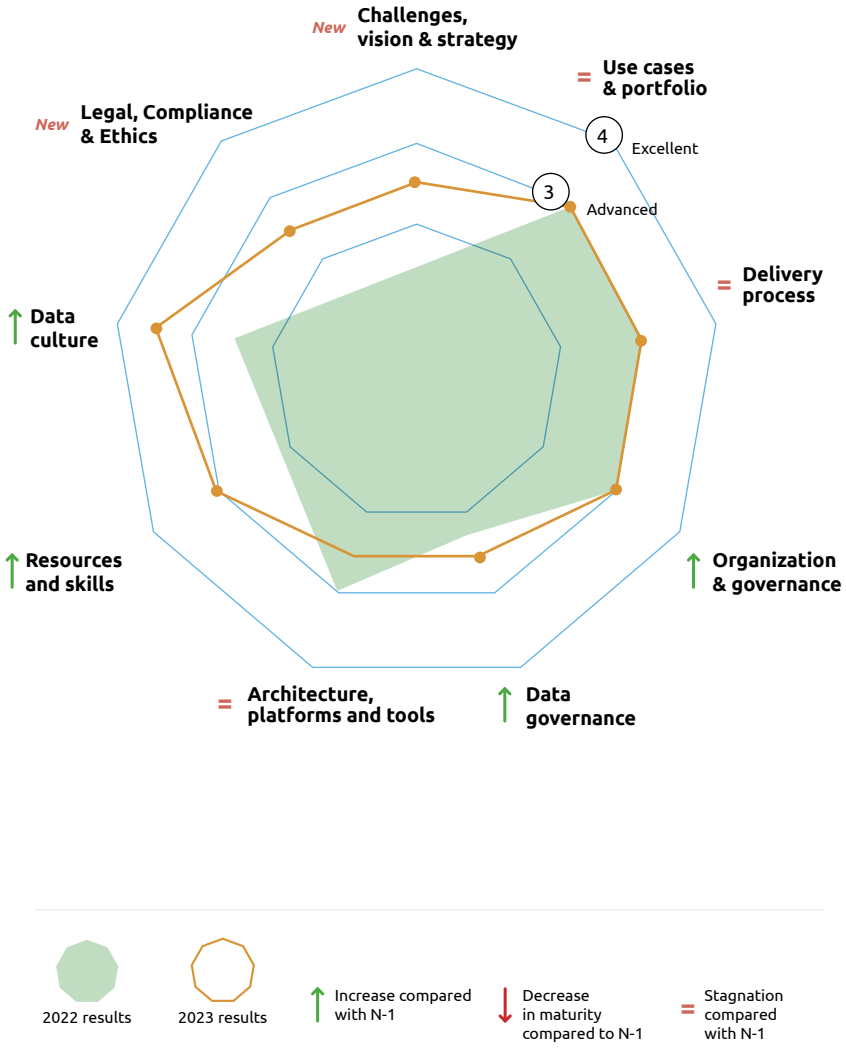
The hype surrounding generative AI has put data back on the boardrooms' agenda. CDOs thus face a fantastic opportunity to transform their organization through data.

- More than ever before, this spotlight should enable the CDOs to play a key role in the company's strategic challenges, alongside the IT and Business Departments;
- The promises of value creation and productivity gains from generative AI will also lead to higher expectations towards the concrete measurement of this value. This will provide an opportunity to align businesses and financial controlling in a value-driven data steering;
- Finally, the deployment of generative AI in production and on a large scale, like that of all data use cases, will be based in particular on tools made available to the largest possible audience... if, and only if, the data and knowledge that feed these tools are available and properly managed! The main principles of Data Mesh respond to this challenge, and a large majority of companies move in this direction. But initiatives remain highly heterogeneous and suffer from a lack of overall management at enterprise level. This underlines the need to align all stakeholders – data, IT and business – towards a common objective and a common set of resources.

To avoid the pitfalls of disillusionment into which "traditional" AI has fallen into, generative AI and its promise of profound transformation for businesses will need to be accompanied by strategic and human investment in the pillars of data-driven transformation.

CONCLUSIONS AND OUTLOOK

Companies' data maturity put to the test by generative AI



What's new this year in the construction of our analysis grid

The maturity assessment grid has been expanded from 7 to 9 axes to better represent the data dimensions and introduce topics that become increasingly important within the data functions:

- Separating the "Challenges & use cases" axis into 2 distinct axes: "Challenges, vision & strategy" on the one hand, and "Portfolio of use cases" on the other, in order to deal specifically with the inclusion of data in the company's strategy, then its application in the portfolio of use cases and the impact on its composition. The vast majority of data offices have set themselves ambitions, a vision of objectives, a strategy and have built a roadmap. This has been made possible by the growing importance of data as a key subject in corporate strategies;
- Creation of a "Legal, compliance & ethics" research dimension to clarify the maturity of companies in the face of current and future regulatory constraints (GDPR, AI Act) as well as the ethical issues raised by AI and generative AI (GenAI). The GDPR regulations have been mastered in critical cases, and companies are now preparing for the arrival of the AI Act to avoid re-enacting the chaotic GDPR adoption.

The pillars of data organizations put to the test by generative AI

- In 2023, over a thousand generative AI tools were launched, triggering a new technological wild west. This raises questions about the choices companies have made in recent years. **To reach the same level of maturity as for AI/ML, organizations will have to set up platforms that take into account the new needs of generative AI.** The desire to create generic AI platforms with a real FinOps component should intensify in 2024.
- The **delivery process** is stagnating this year. While for the most mature companies, the deployment of agility, the introduction of dedicated roles (PO, PPO, etc.) and the systematization of scoping methodologies now make it easier to go into production, generative AI is slightly shaking up practices. The integration of LLMOps into Ops practices is expected by 2024.
- **Portfolio management of use cases is also stagnating.** Despite the introduction of portfolio governance in enbabling stakeholders to be brought together for decision-making, companies are still struggling to measure the actual ROI of their use cases. What's more, the proliferation of Generative AI initiatives throughout the company is not yet under control by all the stakeholders involved.

Fundamentals that continue to progress or are being revitalized

- **The Data Mesh concept has put the spotlight on the need to hybridize data organizations** between central resources and local representations. Little by little, each company makes progress towards the level of hybridization best suited to its challenges. However, this is not reflected in the matrix, as the overall maturity increase has led to a redefinition of standards. Operational models make it possible to govern the data function by dividing up mandates between central/local and between Data/IT/Business Departments. The challenge for companies will be to offer a range of services and to equip themselves with the resources to satisfy both the most mature business and local entities and those that need more support.
- **Data governance progresses** (at last!) as a result of the application of concepts that have now been mastered (data catalogue, data lineage, etc.) and thanks to the adoption of Data Mesh principles. In particular the emergence of "Data products" has gone great lengths towards meeting business demands for autonomy and access to reliable data. **However, many stakeholders are still dissatisfied with the tangible results. Finally, the impact of the spread of LLMs, which require a shift from data management to knowledge management, has not yet been measured or taken into account.**
- **Resources, skills and culture continue to mature,** logically as a result of increased experience, upskilling and training programs. Data skills, **roles and positions are increasingly** being incorporated into HR frameworks and systems, so that they can be recognized and structured. Upskilling is now both enabling business units to identify use cases and generative AI, as it becomes more widely available, and also providing business units with a general data/AI culture.

Data maturity assessment grid

	Challenges, vision and strategy	Use cases & portfolio	Resources and skills	Architecture, platforms and tools	Organization & governance	Delivery processes and methodologies	Data Governance & Data Management	Data Culture	Legal, Compliance & Ethics
Excellent	Data & AI are included as key subjects in the company's strategy. The roadmap for the data function is implemented and continually updated to align resources with ambition	The roadmap is continually updated with use cases put forward by the businesses, and an effective ROI is monitored	Resources are available, HR is autonomous and mature enough to grow the system	Platforms integrate data management, ethics and model lifecycle management Tools. Advanced tools are made available to technical and business users to meet multiple usages (no code, etc.) - - "Anti-monolithic" Data Mesh (technical) appropriation + Self Service	The operating model has been tried and tested throughout the perimeter, and the governance framework ensures that the stakeholders in the data function are well articulated: IT, Business, Digital, Data. All the necessary resources have been recruited and/or trained	Industrialization is the norm and runs smoothly thanks to the methodologies deployed in the scoping, steering (agility), industrialization (CI/CD, DevOps) and operation phases	All data assets are mapped and documented, and the data is managed as a product for which the business line has assumed functional responsibility - Data users/producers apply the standards under the supervision of the Data Government managers	Data is a major strategic focus. The Executive Committee, business lines and IT genuinely support the data transformation through concrete commitments and budgets	GDPR deployed, audit and remediation framework of trusted AI for all use cases
Advanced	The ambition is defined through quantified objectives and the resources to be aligned are identified and planned	Use cases are mapped and prioritized in a roadmap. ROI is a selection criterion	The necessary staffing levels are in place. Skills gaps still need to be filled through training/ services and roles/ positions still need to be included in the HR function (skills development, training pathways, etc.)	The platforms cover all the data assets and are streamlined to ensure good Dev. consolidation and smooth scaling of A.I. Appropriate advanced tools are made available to technical users	The fundamentals of the operational model are in place (roles, responsibilities, funding). They are effective on a partial scope. - Bodies are in place to enable decision-making at the right levels in an efficient manner; a dedicated HR policy enables the key data roles to be recruited and trained	The processes of product scoping and agile project management mean that certain uses can be put into production albeit with difficulty	One entity is promoting standards that are still gradually being applied throughout the organization, and pillars are being put in place (data catalogue, data quality, data lineage, etc.)	The organization recognizes the importance of data, but enthusiasm struggles to materialize in practice – The business lines are sufficiently upskilled to identify relevant use cases and take responsibility for product ownership	The GDPR standard has been implemented for all data assets, and there are objectives and a trusted AI roadmap
Emerging	A partial roadmap provides visibility on current and future projects in the short and medium term	Use cases are Launched and scattered throughout the organization with little pre-qualification	Data resources can partially cover technical and scientific needs and provide management oversight	Platforms are deployed. They have development and production environments. Tools are administered at group level	One or more Datalab, Datafab or Data Office type entities exist. The organizational model is still experimental.	Data use cases are still at an experimental stage, with no industrialization process in place	Data assets are partially mapped, but are not under control (roles, documentation, quality). Accessibility, security/compliance and quality issues are managed on an ad hoc basis depending on usage	Data topics are known but considered to be too complex, secondary or out of reach	GDPR procedures exist, but are not applied to all of the company's assets, and the ethical dimension is not taken into account
Embryonic	No formalized ambition or data transformation as such	Few or no data-related needs/opportunities identified	No or few resources available	Data is siloed in application systems or scattered in documents. Tools are scattered and "activated" by users without rationalization/ administration at group level	Data subjects are dealt with in a haphazard manner	Data use case do not go beyond the ideation or scoping stage	Little or no knowledge of data assets (mapped) Data is siloed by system. Accessibility, security/ compliance and quality are not being managed	The opportunities, challenges and needs specific to data are generally unknown	Little or no concern for the regulatory and ethical aspects of data use. Not all of the assets are covered by GDPR procedures

Full boxes: average level of the French market in 2023

For years, the challenge faced by data offices has been to industrialize data & AI usage and then make this industrialization more fluid. Over the past two years, the deployment of MLOps practices, investment in technological infrastructures, and the gradual maturing of organizations and skills have enabled companies that have been investing in their data transformation for several years to reach an optimal threshold.

The sudden arrival of the generative AI surge will be a stress test for these data organizations over the coming months. Indeed, after the current wave of POCs and experiments of all kinds, 2024 should be the year when these new use cases go into production and native tools are deployed throughout the company.

Having put data back on top of the agenda, the CDOs' ability to steer these issues will be all the more eagerly awaited by top management.

Organizations that have already paved the way towards the industrialization of AI use cases will be able to build on their fundamentals while adapting their operational model and technological stack to the new challenges of generative AI.

But to become a driving force behind the company's transformation, the challenge for the CDO is also to move away from his all-too-often unique position as Doer and adopt an Enabler service offer for the Business and IT Departments, as well as a strategic stance for top management.

To achieve this, it will be necessary to take on three challenges that generative AI will naturally accelerate: integrating into the strategic agenda of companies, driving these uses through value and organizing the right level of hybridization of the organization between central and local via the leverage of Data Mesh principles.

Finally, generative AI will not be the only blockbuster on the agenda for data offices in 2024. The publication of the EU AI Act will kick off the race to comply with this new regulation. This will mean anticipating the necessary remediation and change management plans, but it will also be an opportunity: the most ambitious data leaders will develop greater confidence in their AI, and thus accelerate its adoption within the company and society as a whole.

WHO ARE WE?

The team behind the barometer initiative

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Charlotte is the Managing Director of Capgemini Invent's Intelligent Industry Global Practice. She leads the CxO agenda on connected products and services, R&D, digital engineering, supply chain transformation, smart plants, data, AI, and GenAI applied to operations. With 18 years of experience, she advises global companies to drive business impact, enhance competitiveness, and meet sustainability goals using data, AI, and technology.

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Alex is the global lead for Capgemini's Invent Generative AI Accelerator. He is driving the Generative AI go-to-market strategy worldwide and supports the upskilling of the organization on this topic. He has delivered end-to-end value for his clients through the design and implementation of tech- & data-driven ecosystems for over a decade. Prior to joining Capgemini, he has been honing his technology & data skills in various capacities and sectors, including as a CTO in the startup space during the dotcom boom.

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Conor is Capgemini Invent's global lead for Enterprise Data & Analytics and offer lead for Generative AI Strategy. He has helped leading organisations drive strategy, commercial accountability, and improved decision making with analytics and AI for over 25 years. He was recently voted onto the DataIQ 100 power list of the data industry's most influential figures, holds multiple patents in digital analytics and comments and regularly publishes on topics such as marketing and customer analytics, AI strategy, data strategy and data ethics.

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Elisa is a VP in the Analytics and AI team in Capgemini Invent and has extensive experience in designing and delivering Data and AI transformation projects from mobilisation to go-live across private and public sector. She has explored different career paths (including oboe player and academia) before focusing on delivering organisational and societal data driven value and insight. Elisa is also a strong advocate of gender diversity in Data, acting as a mentor and driving initiatives to increase female participation in STEM and data.

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With 10 years' experience in strategy and organization consulting, Vlad helps our customers build their operational model and implement their Data Management and Data Governance programs. He is also involved in framing and steering the use of data and AI for business purposes.

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