

# Unlock data for the manufacturing industry

The guide for data leaders seeking to tackle the new challenges of their industry.

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# Introduction

In the race for digital transformation, industries are investing more and more in new technologies, such as Big Data, Artificial Intelligence (AI), or the Internet of Things (IoT).

Their main objectives are, among others, to increase productivity, reduce manufacturing and logistics costs and strengthen traceability.

In fact, Fortune Business Insights stated that ***“The global big data in manufacturing industry size stood at USD 3.22 billion in 2018 and is projected to reach USD 9.11 billion by 2026, exhibiting a Compound annual growth rate (CAGR)\* of 14.0% during the forecast period.”***

However, manufacturing industries are still struggling to put in place a **data-driven strategy**, facing challenges such as the difficulty to recover investments and drive innovation at a large scale, in order to respond to the changes in business models, or decrease customer churn rates.

A striking example can be found in the automotive sector. Buyer behaviors tend to gradually change over time, and these changes have not come unnoticed. The increased demand for «eco-friendly» travel through the use of bicycles, access to VTC services, or shared mobility with the increase in carpooling are new ways of getting from point A to point B.

These facts mainly show that the mobility market is changing. Demand is no longer based on the acquisition of new goods but rather on the mobility services made available to them. Thus, in order to remain competitive and

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\*Statistical measure to estimate the average annual growth between two dates.

meet the expectations of their users' new behaviors, automotive market players must diversify. **For many of them, data is key.**

**To face those kinds of challenges and changes, digital transformation has been on the table for any manufacturer executive committee and as a consequence, becoming data-driven is a matter of survival.**

This white paper discusses the importance of data as well as the opportunities it offers to manufacturing industries. Throughout its pages, you will discover how to **unlock data access.**

First, we'll focus on the successes of digital and data transformations in different industries and then, on the challenges you may face. We will then explain what a data catalog is and its benefits for an organization wishing to initiate a data management strategy. Finally, the last part will develop the reasons why **Zeenea is THE data catalog for companies in the industrial sector**, through a presentation of our unique features.





**Three digital and  
data transformation  
success stories in  
the manufacturing  
industry**



## Total: Toward innovative solutions

There are plenty of great success stories of manufacturing companies transforming their companies into data-driven organizations. A recent example is Total, one of the seven **“Supermajor”** oil companies in the world.

In October 2019, Total announced the creation of their **Digital Factory**. Frédéric Gimenez, Chief Digital Officer and head of the project, described the project using these three words:

***“acceleration,  
transformation, and  
dedication”***

This Digital Factory brings together various profiles such as developers, data scientists, digital architects and specialists in agile working methods to collaborate alongside experts from

Total’s various businesses. Their role will be to come up with customized digital solutions to further develop Total’s various operations. The synergies between the different areas of expertise mean that they will be able to roll out these innovative solutions **faster and with greater agility**.

**Digital technology can drive progress in a wide range of areas, by improving industrial operations, for example, and by reducing environmental footprints and developing innovative energy sources & new services for customers.**

## BMW: becoming more customer centric

In an interview at the **Adobe Summit EMEA 2017**, Rainer Feurer, in charge of customer-centric sales development and customer experience, explained the benefits of BMW's digital transformation.

***“Our industry is fundamentally changing. Cars in the future will be autonomous, they will be connected, electric, and shared, but also the customer interface is changing massively. In the past, we were working with dealer networks to sell cars. In the future, we’ll be looking much more at the individual customer and what that customer needs during their entire lifetime.”***

Also, the huge automotive company quickly knew that they needed to become more customer centric, and this with the help of data and digital technologies.

BMW use the data they have to **provide various services in their customers' daily lives**, from parking services or charging services, all the way to helping in their mobility needs. They already hold the largest amount of parking services and charging services worldwide, and envision that, by 2025, BMW will have a customer base of 100 million customers.

Data therefore allows BMW to personalise every aspect, be it through a webpage, messaging in marketing that they can tailor to certain groups, all the way to making offers to a customer at the end of a lease. Collected data allows their teams to know when a car lease expires, allowing them to make very **personal offers** to customers based on their use of the car and their financing needs, which was not possible in the past.

## Saint Gobain: lighten its decision processes

Saint-Gobain has been manufacturing building materials for more than 350 years, dating all the way back to the reign of Louis XIV in France. Founded in 1665 to make mirror glass for royal orders, Saint-Gobain has since diversified into one of the world's largest building materials companies, with a presence in more than 60 countries.

In 2019, the firm accelerated its transformation by launching the **"Transform and Grow"** – a new organizational structure with five reporting units designed to align the business more closely to its target audience, increase agility and empowerment, and enhance synergies through simplification.

The five reporting units which make up the new initiative replace the three business sectors and 14 delegations which made up the company's former management structure. This allows for a much more agile structure which has the resources and flexibility to leverage new & competitive enhancement opportunities – including digital transformation and

more **streamlined decision-making processes**.

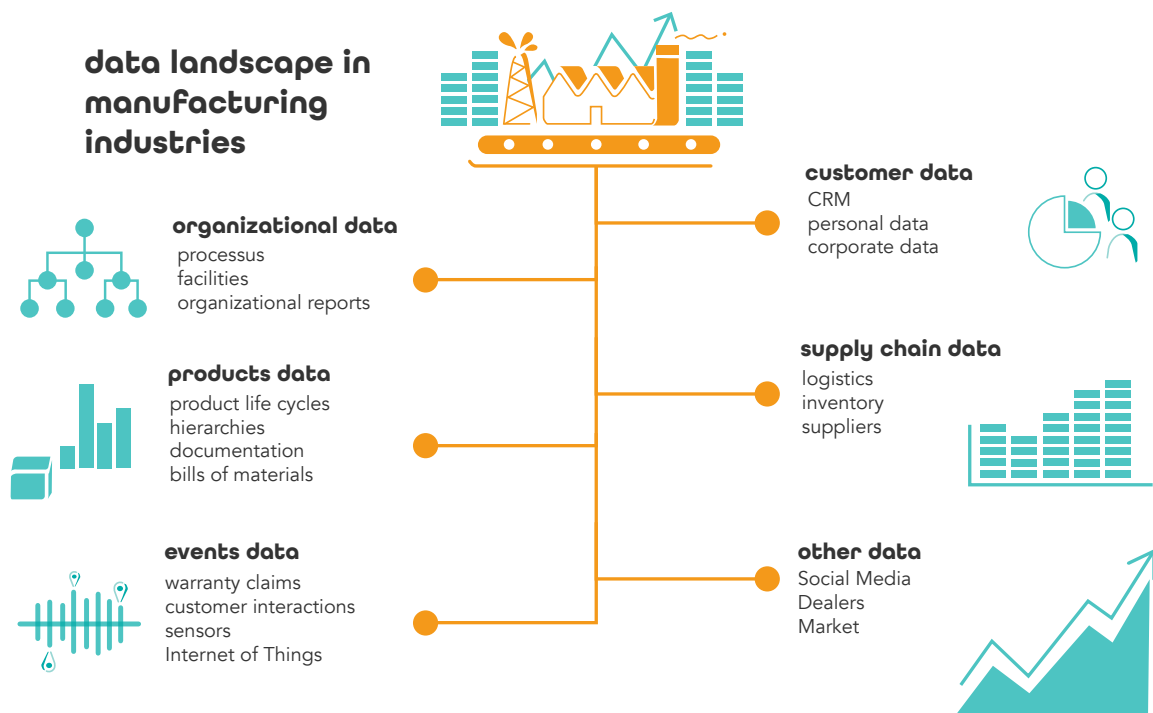
Saint-Gobain is rapidly achieving success by optimizing its integration strategies and constantly having to come up with new ways to provide better customer service. Introducing new programs such as **"Transform and Grow"** will help them to become more successful and expand even further into the digitalization of the building industry.





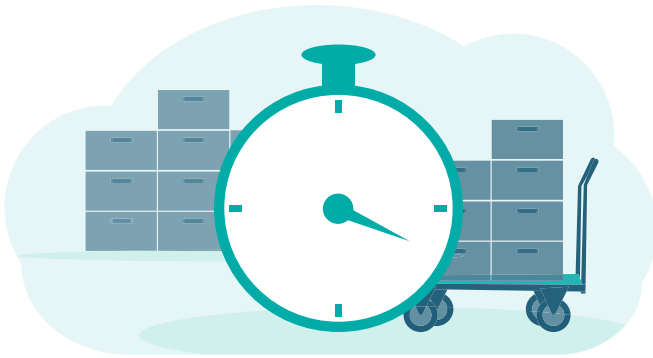
# Core data use cases in the manufacturing industry

In the manufacturing industry, data is collected from various sources. In fact, the data landscape in manufacturing industries translates to having:



All of these types of data must be made available to employees in order for them to be able to monitor and analyze their production processes as well as their risks, quality or any production process, sales performance, operational margin, etc.

**Leveraging the existing data asset landscape is therefore becoming a priority in many manufacturing companies.** Here is a list of common use cases manufacturing companies face regarding data:



## Supply-chain optimization

With the rising adoption of interconnected environments, supply chain management in manufacturing operations is becoming more complex and time-consuming. To optimize supply chain operations, there is a need to examine the process at a granular level.

Supply chains vary from company to company and are an important part of the company's overall strategy.

In fact, sometimes, the supply chain can be considered more vital for the manufacturers than the production process! Nevertheless, those two can result in losses due to inefficiencies in the operations. Data supports manufacturers in **understanding the processes and errors** associated with it.

It goes without saying that this data creates numerous opportunities and prevents organizations from wasting their time and money.

For instance, John Deere (Deere & Company) was able to save USD 900 million in inventory control over a period of two years. Another example is the Coca-Cola Company, which was able to save around USD 45 million annually by following big data analysis for vehicle routing systems.



## Predictive Maintenance and Quality

As mentioned above, most manufacturers follow a schedule of preventative maintenance (PM). With PM, supervisors schedule downtime at regular intervals to repair assets before an unexpected breakdown leads to costly unplanned downtime.

There are dozens of variables that **contribute to quality outcomes**. For manufacturers that track these variables, data analysis can help determine root causes and identify factors that lead to errors.

**John Deere (Deere & Company) was able to save \$ 900 millions in two years in inventory management.**





## Product tracking

Product and inventory traceability has become a critical requirement for today's industrial businesses to reduce risks and gain competitive advantage. The advantages of product tracking can also translate to having an overview on their product life cycles, and therefore having better stock management and greater visibility on supplier performance and quality problems.

Manufacturing companies are hence, in need of putting in place a product tracking framework by being able to locate their product at any time, as well as gain visibility on when, where, and by whom the product parts were processed, manufactured, stored, used, transported, etc.

By enabling this end-to-end data collection on information assets, manufacturers can **react quickly to unexpected events**, provide accurate and timely reporting and documentation to meet industry regulations and quality audits, increase customer service levels with timely and accurate order information, and so much more.



## Compliance with various data regulations

Compliance isn't a new subject for manufacturing companies. Health, safety, and quality management have been the most important mandates that the industry must adhere to. But the arrival of big data technologies, compliance and quality management systems also target data itself in addition to manufacturers' processes (supply chains, product trackings, workflows as well as customer and employee data).

For example, the newest data regulation that the industry is now obligated to comply with is the well-known **GDPR (General Data Protection Regulation)**, a EU law on data protection and privacy regarding companies in the

European Union and the European Economic Area. **And manufacturing companies are no exception to the rule!**

Very time-consuming, going through an ocean of data can be an overwhelming task.



## Product & service innovation

It's been said over and over again, and it is illustrated in our success stories above, that **data allows companies to innovate with their products or services.**

By collecting and audit-trailing manufacturing data, those companies can better track production processes and collect exponential amounts of data in order to innovate on new or current customer services & products. It also enables manufacturing companies to **monetize these information assets** to create new opportunities with potential partners.

For instance, the use of data changed the way some car insurers work with their customers. In May 2016, Allianz

France designed an insurance package for semi-autonomous cars, i.e. equipped with at least an autonomous emergency braking system, an automatic parking device or an adaptive cruise control.

They were able to create natively integrated in-car telematics allowing them to interact with the driver in real time. Allianz France describes how they were able to detect driver behavior and **offer new personalized contracts** based on how the person is driving:

*“Sold as an option to the standard car insurance contract, this telematics solution known as pay how you drive (PHYD) enables the driver’s driving behavior to be assessed using a GPS unit connected to the vehicle’s OBD (on board diagnosis) socket. The “black box” is then connected to the driver’s smartphone via an application through which the data is transmitted. Only the sensors in the cell phone collect data on acceleration, braking, cornering and speed. If they are deemed prudent, the 25,000 registered subscribers can expect a premium reduction of up to 30 percent.”*







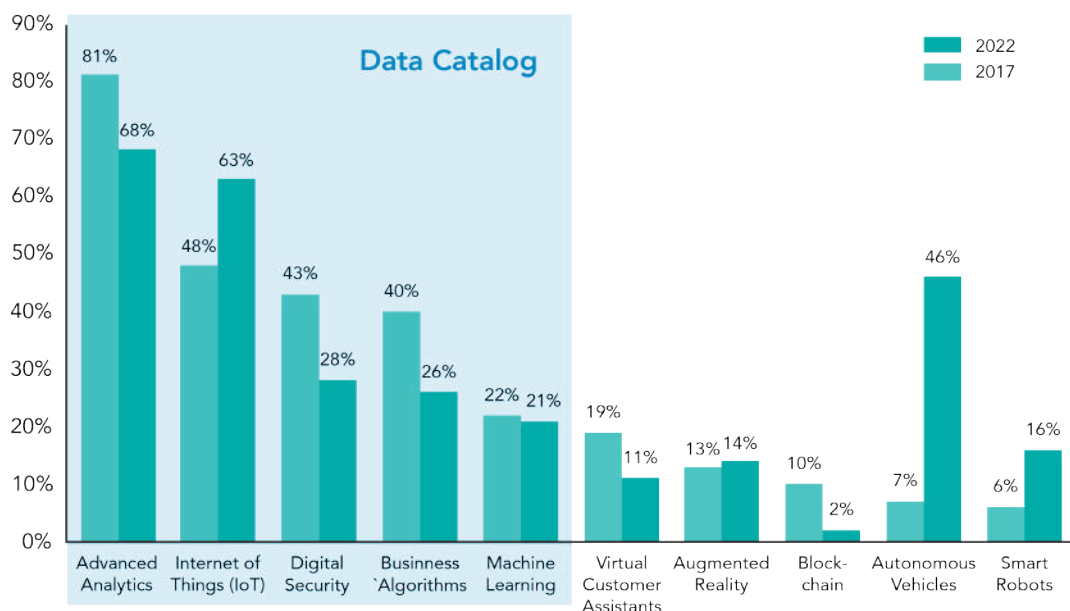
**The starting point  
for unlocking data  
in manufacturing  
companies**

The data landscape of manufacturing industries is one of the most complex of the market!

To enable advanced analytics, collect data from sensors, guarantee digital security and use machine learning and artificial intelligence, manufacturing industries need to **“unlock data”** which means centralizing in a smart and easy-to-use corporate “Yellow Pages” of the data landscape.

**A data catalog is a central repository of metadata enabling anyone in the company to have access, understand and trust any necessary data to achieve a particular goal.**

In 2017, Gartner predicted that the following technologies would impact manufacturing industries in the next five years:



All those topics imply a common platform for decision making: **this is the role of a data catalog.**

It allows you to acquire a **business and technical views** of data stored in data sources. It centralizes and unifies information collected so that they can be

shared with IT teams and business functions and then connected to the enterprise's tools. This unified view of data enables its users to:

## 1. Build Agile Data Governance

A connected data catalog enables you to curate the data directly retrieved from your enterprise's IS. This way, your organization starts creating an understandable & reliable data asset landscape via a centralized platform. We believe in a **bottom-up approach** where your assets' global knowledge should be the starting point of your data governance, instead of deploying overly complex processes too difficult to maintain on assumed information. With a reality-driven data catalog, the organization can iteratively open a retroactive loop on top of this global knowledge to create roles, process, and access to the data.



## 2. Start a metadata management

A data catalog enables you to create a technical and business metadata directory. It enables metadata synchronization with data sources and **enforces documentation** by your data teams (by your data owners, data stewards, users, etc.), ultimately maintaining a powerful and reliable data asset landscape at the enterprise level over time.

## 3. Sustain a data culture

A data catalog becomes the reference data tool for all employees. As its interface does not require technical expertise to discover and understand the data, the knowledge of the data assets is no longer limited to a group of experts. It also allows your organization to **better collaborate** on those assets and work on them in a simple way. At

Zeenea, we consider that a data catalog is a cornerstone to build a powerful data democracy.

## 4. Accelerate data discovery

As thousands of datasets and assets are being created each day, enterprises find themselves struggling to understand and gain insights from their information to create value. Many recent surveys still state that data science teams spend 80% of their time preparing and tidying their data instead of analyzing and reporting it. By deploying a data catalog in your organization, the speed of data discovery can increase up to 5 times. So your data teams can focus on what's important: **delivering their data projects on time.**

### DATA DISCOVERY

#### COLLECT AND ANNOTATE

Create an inventory of data sources and the metadata that describe them

#### PREPARE

Enable access to sources and set up access-control rules

#### ORGANIZE

Identify syntax, structure, and semantics for each data source

### DATA INTEGRATION

#### INTEGRATE

Establish a common data representation of the data. Maintain data provenance

### DATA EXPLOITATION

#### ANALYZE

Analyze integrated data

#### VISUALIZE

Present analytic results to a decision maker as de an interactive application that supports exploration and refinement

#### MAKE DECISIONS

Identify syntax, structure, and semantics for each data source

### THE DATA VALUE CHAIN





**zeenea**

**the data catalog  
for manufacturing  
industries**



# zeenea

**Zeenea** helps industries build an end-to-end information value chain. Our data catalog allows you to manage a 360° knowledge base using the full potential of the metadata of your business assets.



### DATA REPOSITORIES



**organizational data**  
processes  
facilities  
organization  
reports



**events data**  
warranties claims  
customers interactions  
sensors/IoT



**products data**  
processes  
dealers  
products and hierarchies  
documentations  
bills of materials



**customers data**  
CRM  
personal data  
corporate data



**supply chain data**  
logistics  
inventory  
suppliers



**other data**  
social media  
dealers  
market

### DATA TECHNOLOGIES



Big Data / NoSQL



Cloud



Data warehouse



Relational database



Analytics solution



Time series



ETL



Data Quality



Dictionaries



ERP / CRM



MES / MRP



WMS



PLM

### ZEENEA METADATA MANAGEMENT PLATFORM



### DATA DRIVEN INITIATIVES



Data Monetization



Analytics



Predictive Maintenance



Compliance



Suppliers Self Service



360 Customer Knowledge



Product 360 View



Supply Chain Optimization

# Renault Success Story

## How Zeenea Data Catalog became a must-have

In 2017, **Renault Digital** was born with the aim of transforming the Renault Group into a data-driven company.

Today, this entity is made up of a community of experts in terms of digital practices, capable of innovating while delivering agile delivery and maximum value to the company's business IT projects. In a conference in **Zeenea's Data Centric Exchange (French)**, Jean-Pierre Huchet, Head of Renault's Data Lake, states that their main data challenges were:

- Data was too siloed
- Complicated data access
- No clear and shared definitions of data terms
- Lack of visibility on personal / sensitive data
- Weak data literacy

# 2017

The beginning of the Zeenea Data Catalog adventure



# 2018

The implementation of an iterative & incremental approach



# 2019

Open to all types of profiles within Renault Digital



# 2020

The scale up of Zeenea to Groupe Renault



By choosing Zeenea Data Catalog as their data catalog software, they were able to overcome these challenges and more. Zeenea today has become an essential brick in Renault Digital's data projects. Its success can be translated into :

- **Its integration into Renault Digital's onboarding: mastering the data catalog is part of their training program.**
- **Resilient documentation processes & rules implemented via Zeenea.**
- **Hundreds of active users.**

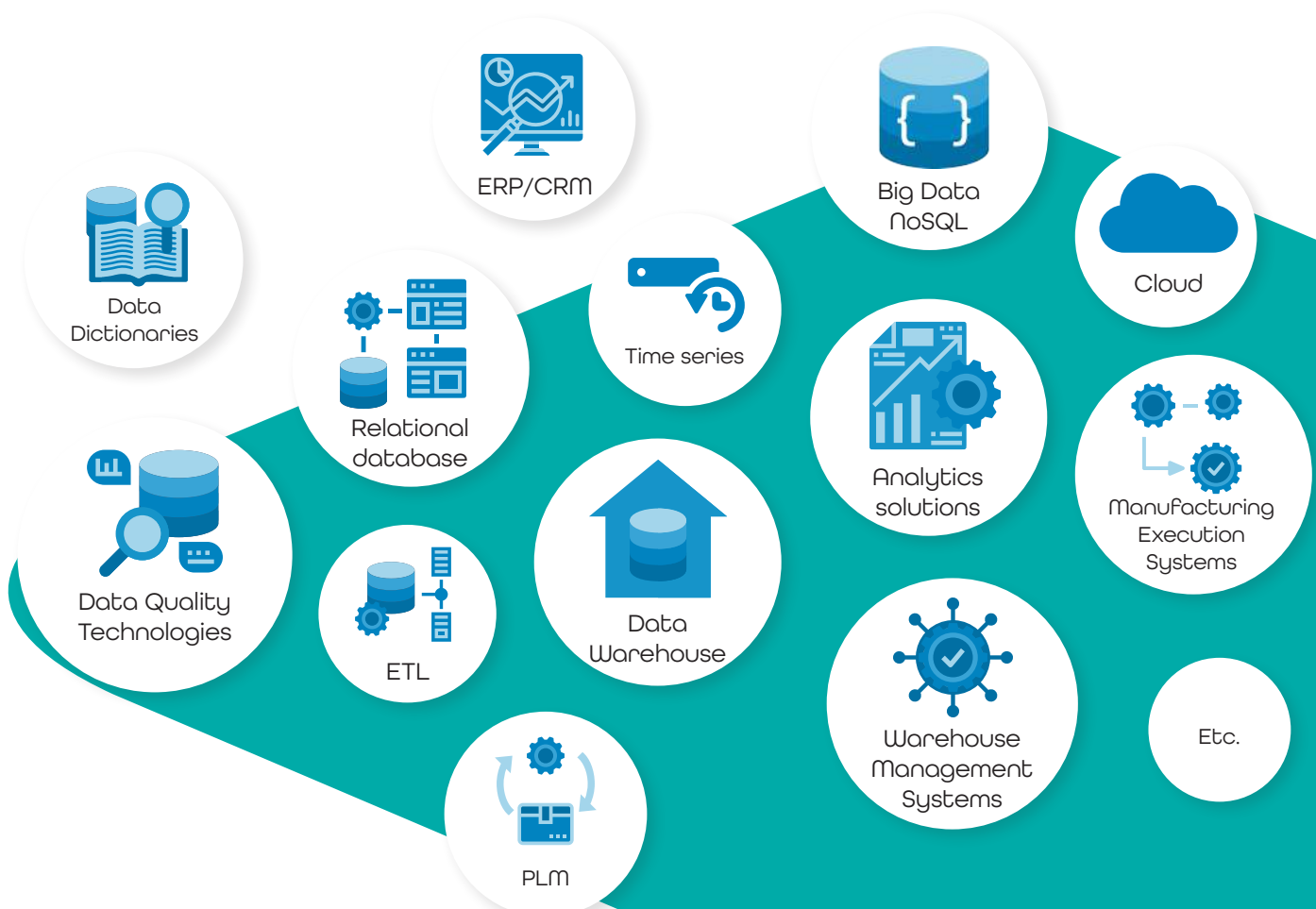
**Now, Zeenea is their main data catalog, with Renault Digital's objectives of having a clear vision of the data upstream and downstream of the hybrid data lake, a 360 degree view on the use of their data, as well as the creation of several thousands of Data Explorers.**

# Zeenea's unique features for manufacturing companies

## Universal connectivity to all technologies used by leading manufacturers

Manufacturing industries have various data sources whether that be technical and manufacturing metadata, usage metadata, business metadata, compliance metadata, statistical metadata...the list goes on and on!

In fact, manufacturing industries are subject to having data from the following technologies:

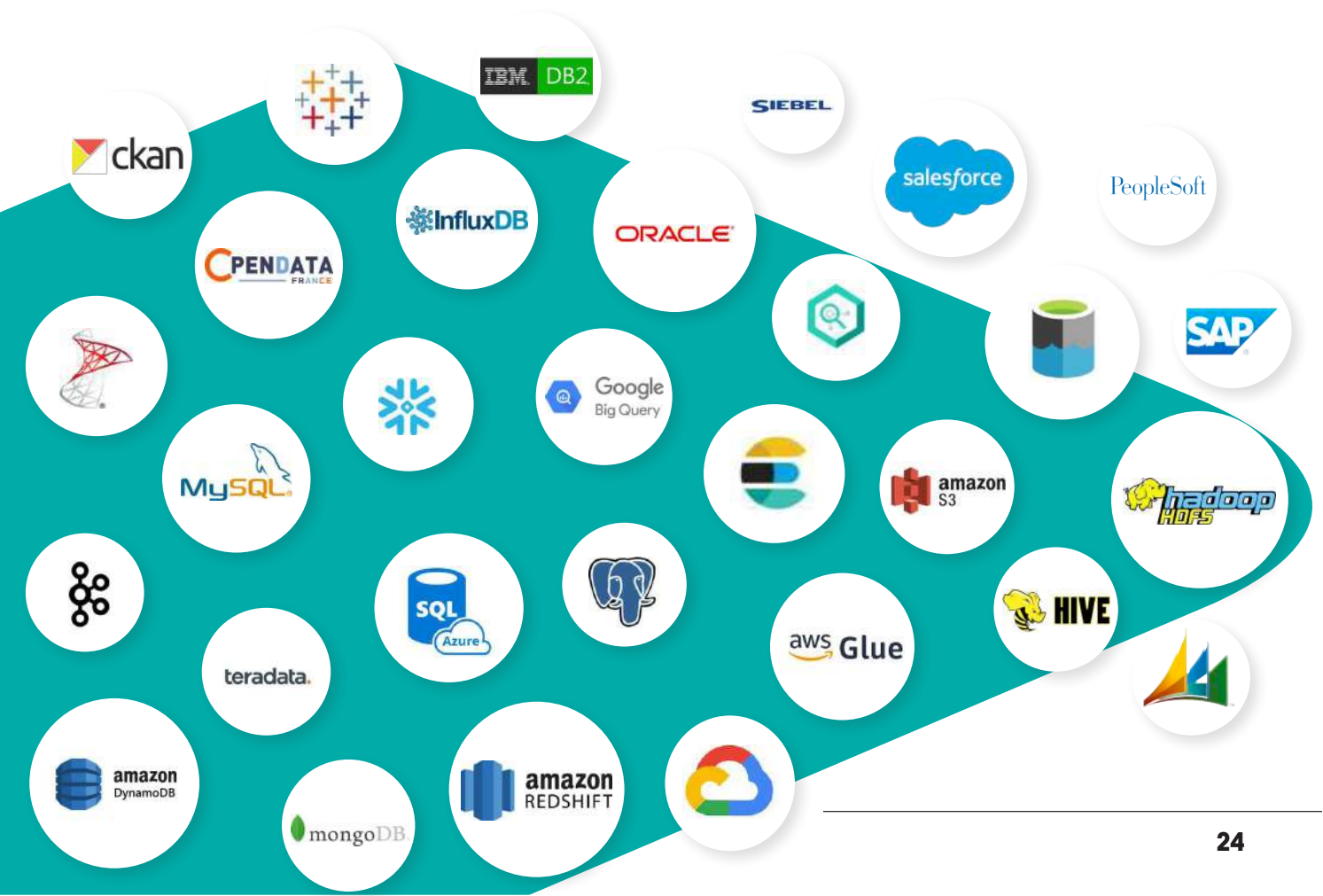




## Zeenea's advantage

Our universal connectivity and API-first approach allows Zeenea to adapt to any system, and to any data strategy (edge, cloud, multi-cloud, cross-cloud, hybrid) to build an enterprise-wide information repository. **We provide the most comprehensive connectivity of the market** with the ability to automate metadata curation with our wide range of connectors.

**Our connectors will allow you to automatically collect and update technical metadata (technical names, data types, changes related to your schema), operational metadata (date of last update, original source, volume), but also the documentation you may have provided at the field table level from the source system.**



## Flexible metamodel templates adapted to manufacturers use-cases

Most data catalog providers have pre-built, hierarchy-based metamodels and therefore are very limited or highly complex in the implementation of a data-driven strategy- especially in an environment where use cases grow by the minute.

### Zeenea's advantage

Our data catalog provides modular metamodel templates that enables manufacturing companies to quickly and incrementally build easy-to-use and comprehensive models to serve business needs. Structure your assets' documentation with simple "drag & drop" features and create documentation templates for each type of asset in the way that works best for you.









**Define mandatory or optional properties, the types of information to be filled in and which ones are searchable. All in one place.**









These features help manufacturing industries build a powerful **knowledge graph** through the set of links, associations and similarities made in the catalog. It will allow you to improve day after day the semantic contextualization of your objects and their exploration in a relevant way.

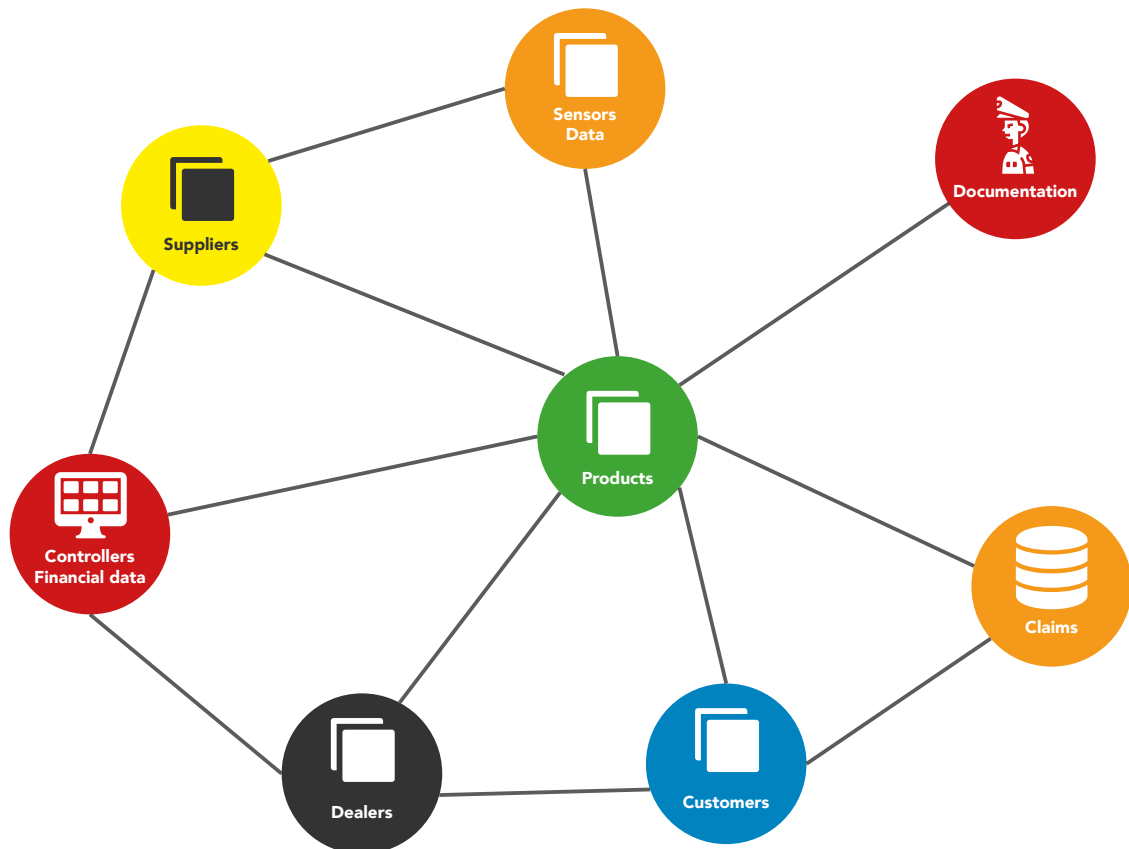
## Knowledge Graph over Static Taxonomy

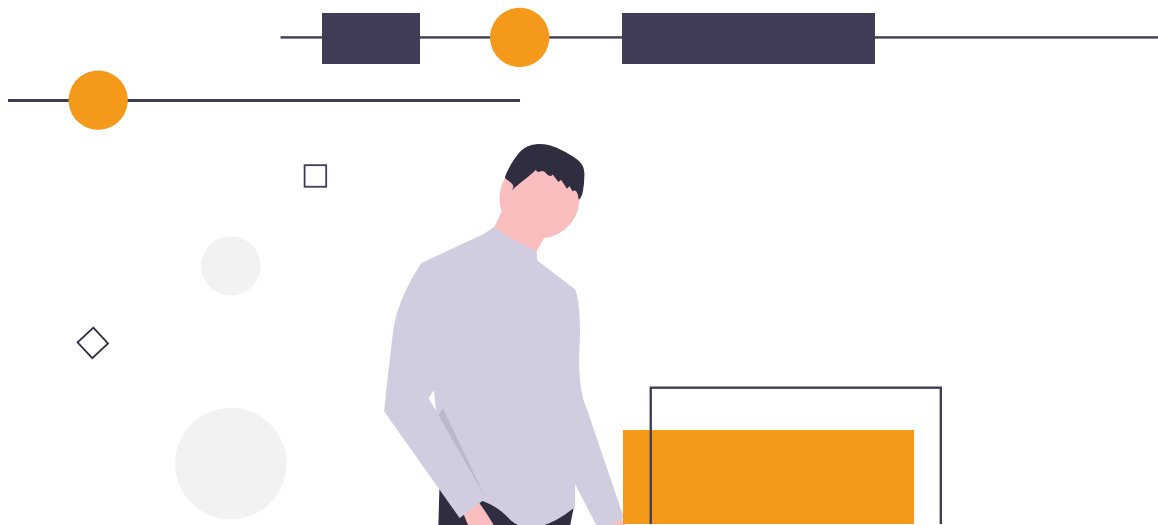
### Catalog

-  Datasets
-  Fields
-  Categories
-  Data processes
-  Business terms
-  Applications
-  Visualization
-  Policies

### Data Repositories

-  Organizational data
-  Products data
-  Customers data
-  Events data
-  Supply chain data
-  Other data





## Compliance to specific manufacturing standards through automatic data lineage

As mentioned before, GDPR regulations and other Industry specific standards and certifications always require proof of processes, especially when dealing with data assets.

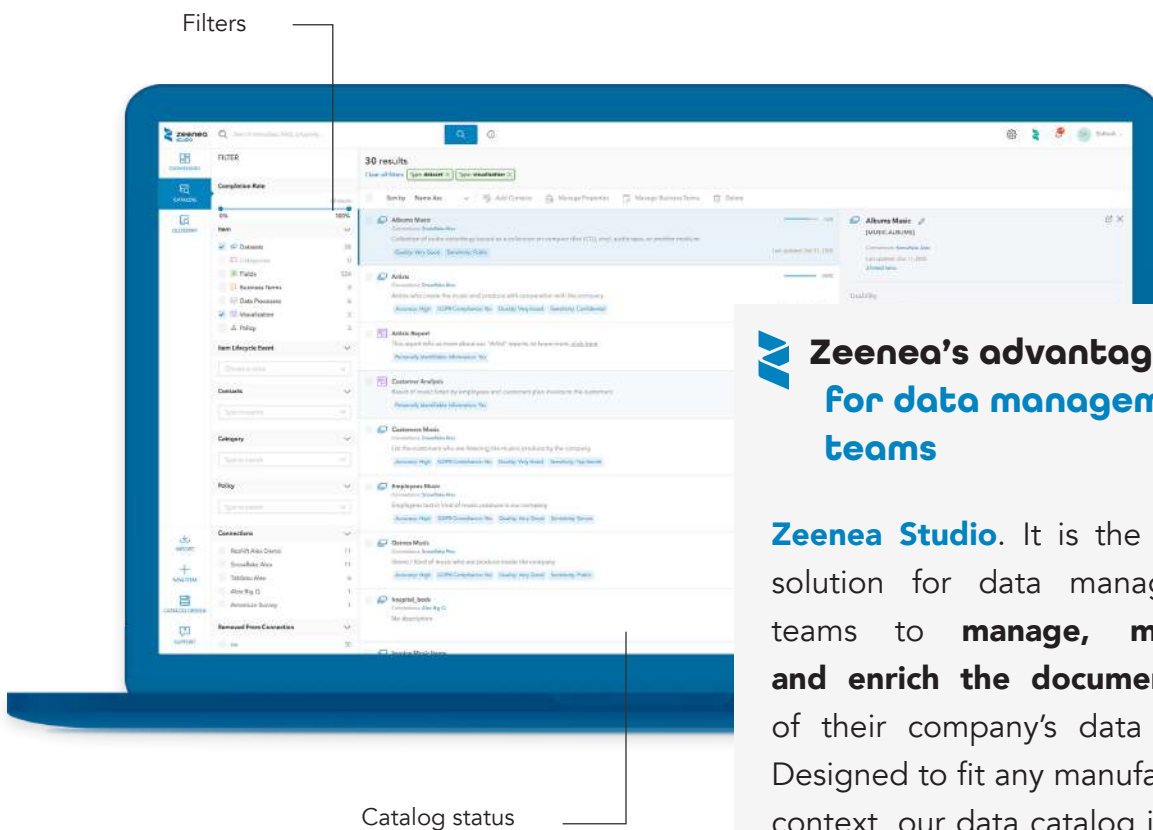
### Zeenea's advantage

Our data catalog automates data lineage by gathering data processes and data assets transformations from ETL platforms and data pipelines, or from manual descriptions for compliance and regulation. Zeenea also provides an audit trail for any action done in the data catalog.

## A smooth transition in becoming data literate through compelling user experiences

It is needless to say that discovering, trusting, and understanding thousands of data sets that come from hundreds of data systems, with hundreds of thousands of fields and millions of attributes...is a complex task!

Our data catalog enables manufacturing companies to **improve data governance** teams' productivity by providing data stewards with a highly productive, automated, flexible and smart data catalog through our app:



### Zeenea's advantage for data management teams

**Zeenea Studio.** It is the perfect solution for data management teams to **manage, maintain and enrich the documentation** of their company's data assets. Designed to fit any manufacturing context, our data catalog is 100% customizable with automation capabilities & suggestions.

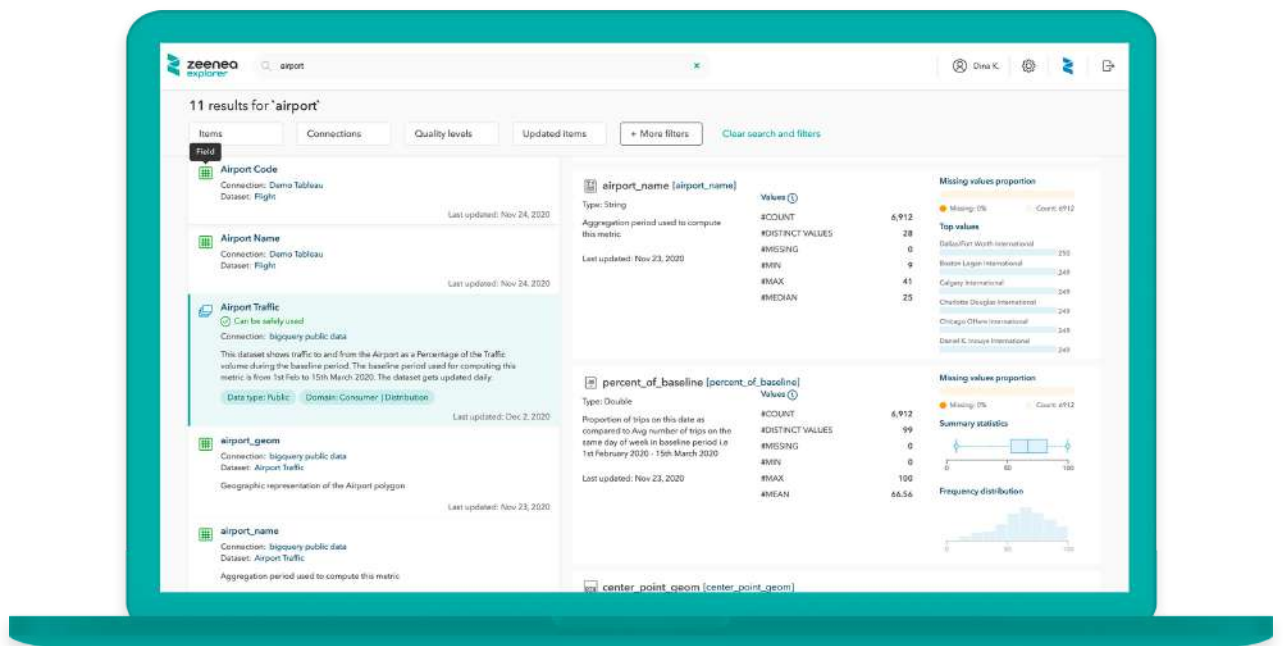


## Zeenea's advantage to business users

Data consumers, whether they be data scientists, data analysts or even marketers, are in need of an easy to use, easy to understand and trustworthy **data discovery tool**. It is a must have for an enterprise-wide data catalog adoption.

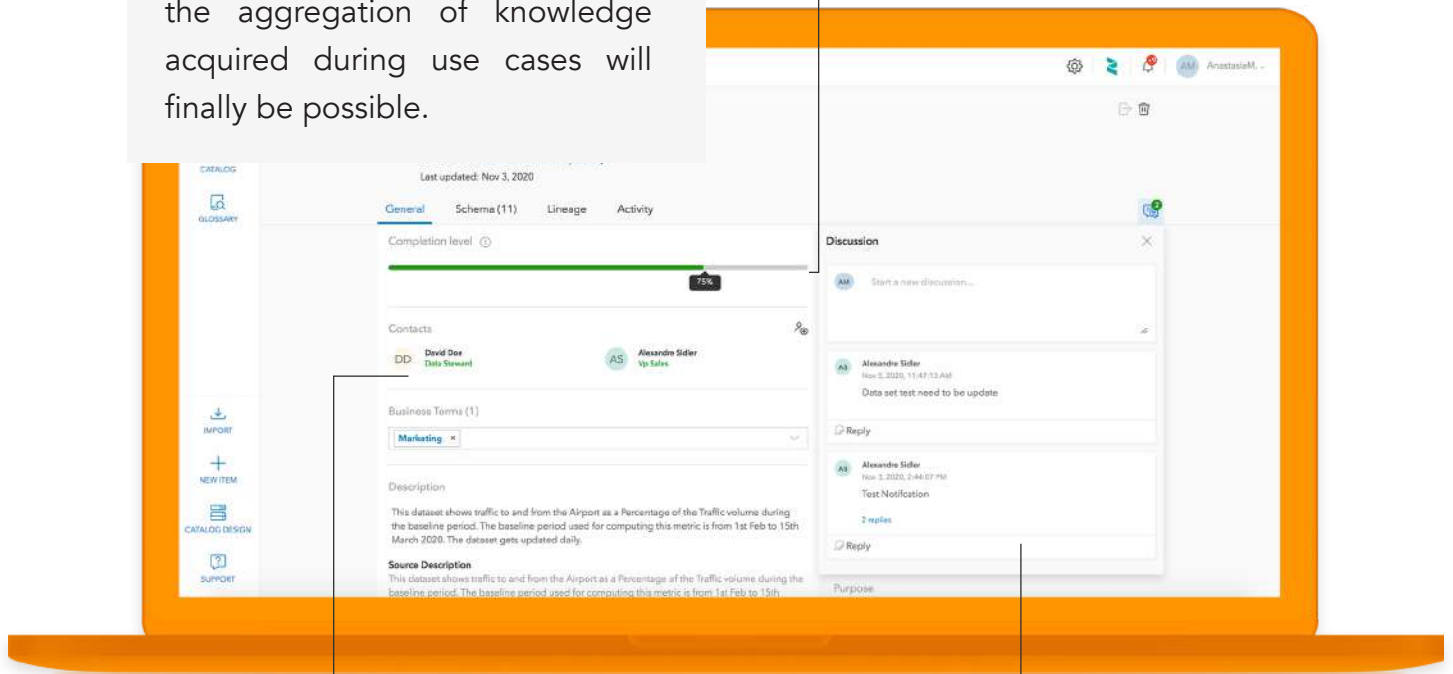
**Zeenea Explorer** offers an intuitive and easy-to use tool powered by a smart search engine, tailored to each individual's needs. Through our data discovery platform, we provide data quality metrics and smart contextualized filters to achieve the industry's challenges of tomorrow.

**Zeenea Explorer leverages the valuable information obtained on user behavior and profile to offer the most relevant data catalog exploration as possible!**



Zeenea Studio et Zeenea Explorer provide all your data consumers with **sharing capabilities** to allocate their knowledge about various objects in the catalog through collaborative features. Thus, interactions between teams and experts will be simplified and the aggregation of knowledge acquired during use cases will finally be possible.

Completion level



Dataset contact

Chat

## An affordable platform with a fast return on investment (ROI)

Most data catalog providers are quite expensive, with no guarantee for any return on investment.

### Zeenea's advantage

Zeenea's pricing strategy enables any organization to **start small and scale fast** by adopting an agile, incremental, and pragmatic data governance initiative. Our data catalog's agile design enables companies to launch bottom-up data driven initiatives to maximize ROI **in a matter of weeks**.

#### TEAM EDITION

IDEAL FOR **STARTING**

**18 000€/YEAR**

- ✓ Up to 5 data stewards
- ✓ Up to 50 data explorers
- ✓ 3 connectors available
- ✓ Basic starter kit
- ✗ Premium ERP/CRM connectors
- ✗ Virtual private cloud
- ✗ Additional users

#### ENTERPRISE EDITION

IDEAL FOR **SCALING**

STARTS AT  
**40 000€/YEAR**

- ALL THE TEAM EDITION +**
- ✓ Unlimited number of connectors
  - ✓ Premium Starter kit
  - ✓ Additional users available\*
  - ✓ Premium ERP/CRM connectors available\*
  - ✓ Virtual private cloud\*

\*extra costs

*\*\$22,000 USD for the Team Edition and \$48,000 USD for the Enterprise Edition*



# Conclusion

It is only through the implementation of a data catalog that manufacturing companies will be able to truly access, discover, and understand their enterprise-wide data.

Never before have data teams been so autonomous and efficient in finding, understanding and sharing information around data with Zeenea.

**Our Data Catalog is a 100% cloud-based solution available worldwide in just a few clicks.**

Its ease of deployment, integration and use allows data consumers to free themselves from the technical skills they have depended on until now and to address your digital change challenges.

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**zeenea**

Be Data Fluent

# More information about our Data Catalog?

Contact us now for a free demo!

**#BeDataFluent**

**Contact us**