



## Unlock data for the Financial services industry

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## Introduction

It is no secret that digitalization in the financial world is mandatory.

However, most banking, insurance and other financial companies are still struggling to initiate a data-driven strategy that **allows them to offer innovative services while complying with increasingly demanding data regulations.** 

As digital services expand, so does the amount of data that is generated. And with greater data, especially in the financial services industry, **comes** great **responsibility**. As financial structures are subject to some of the most sensitive data, whether they come from individual consumers or companies, they must comply with strict data protection laws such as GDPR, BCBS 239, KYC, and Solvency 2.

In addition, the financial services market is witnessing **an emergence of startups that combine their core activities with technology**. In fact, their value propositions are based on the constant and increasingly strong presence of technology. These new players on the market, called InsurTech or FinTech companies, are investing heavily in the development of connected objects (IoT), Big Data, cyber security and machine learning.

In fact, according to **Fortune Business Insights**, the global internet of things (IoT) in banking, financial services, and insurance (BFSI) market size stood at USD 17.85 billion in 2018 and is projected **to reach USD 116.7 billion by 2026.** 

In short, this situation puts the more traditional banks and insurance companies in a major battle that can only be won **by striking the right balance between defensive and offensive data governance**. With this in mind, this white paper will take on the opportunities offered by data in the banking, financial and insurance services market by presenting a few practical cases implemented by big players in the sector, high level data use cases, and finally, conclude with the fundamentals of a data strategy, and a solution for democratization.



from What Data Governance strategy is best suited for your sector?

3 digital and data transformation success stories



### **HSBC: Innovating through IoT**

HSBC is the 6th largest bank in the world and the largest in Europe. With its headquarters in Hong Kong, the firm has recently developed a way to automate the refilling processes for their ATM machines.

This technology was created by their operations and technology teams in Hong Kong, where the bank has 1,200 ATMs, to reduce the refill time spent by third parties.

This artificial intelligence technology, called iCash, has reduced ATM refills by 15%, saving the company over USD 1 million.

iCash uses live ATM data and predictive machine learning algorithms to calculate how much money is needed and in which ATM. The AI takes into account many factors such as the seasonality, time, location, if there are any holidays or public events on that day, and the withdrawal trends for each machine. Using easy-to-interpret dashboards, HSBC's data teams were able **to visualize withdrawal patterns**, enabling them to keep machines stocked. They found that this new technology reduced lead times on cash replenishment deliveries from **as much as 36 hours down to just 15 minutes.** 

In a **Computer Weekly** article, Chris Trill, Global Head of Wealth and Personal Banking Operations at HSBC stated **"iCash is a** game-changing digital solution that improves the customer experience, while unlocking both man-hour and vendor savings. It also reduces the risk of robbery by moving away from scheduled cash deliveries."

# Mastercard: Preventing Fraud detection

Mastercard is one of the many financial services firms that have quickly understood the importance of diversifying their products and services in order to stay competitive in the electronic payment market.

As previously mentioned, there has been a shift in consumer behavior where individuals or businesses are increasingly making transactions through online vendors such as e-commerce websites. Also, with the recent COVID 19 pandemic, there has been an increase in "contactless" payments, with the use of mobile credit card readers, for sanitary reasons. However, these new online methods have also increased the number of credit or debit card frauds.

To prevent this, Mastercard has put in place artificial intelligence technologies in order to combat and prevent these frauds. Their service **Decision Intelligence**, helps financial institutions increase the accuracy of **real-time approvals of**  genuine transactions and reduce false declines. They track variables such as transaction size, location, time, device, and purchase data. Decision Intelligence assesses account behavior in each operation and provides real-time judgment on whether a transaction is fraudulent or not.

To support this use case, according to recent studies, false declines make merchants lose about USD 118 billion per year while clients' loss is about USD 9 billion per year. It's the largest area for fraud in financial services.

"We are solving a major consumer pain point of being falsely declined when trying to make a purchase," said Ajay Bhalla, President of Enterprise Risk and Security, Mastercard. "By using Al technology on our global network, we're helping financial institutions and merchants improve approval rates – and the consumer experience."

# Oscar: Personalizing customer services

Founded in 2012 in New York, Oscar is the first health insurance company built around a full stack technology platform.

Their pitch was simple: "Make Healthcare easy".

The company's CEO, Mario Schlosser, is a Stanford-trained Data Scientist who built Oscar's core business through new technologies such as **telemedicine**, healthcare focused **technological interfaces**, and transparent claims pricing systems which would make it easier for patients to navigate.

They also want to extract insights from the flood of existing healthcare data, insurance claims or electronic medical records to build a smarter network— one where the user is matched with the correct doctor, based on their specific needs.

To do this, the firm created a **taxonomy** of health care providers not just by their profession, but also by their skills, and combined this classification system with their patients' data. Oscar's data science team then built a predictive model based on how often people accessed certain services, and layered on information about where people lived, where doctors were located, and what services they provided.

With this system, Oscar is not only able to produce valuable insights from cleaner and higher quality data, but also give **better**, **more personalized customer service** to their patients. You can easily compare them with their French cousin, Alan which aims to do the same.



## Core data use cases



## Optimizing costs through data analyses

One of the underlying benefits of data resides in its potential in streamlining the cost of a project particularly in more *traditional* operations. Indeed, banks and insurance companies seeking to leverage their data by investing in revolutionary new use cases, can actually derive **substantial economic benefits** from the same data on ongoing or past projects.

Here are a few examples:



Simplify products and sell them across all channels



Digitize more operations and reduce labor costs by automating core functions



Optimize IT budget allocation, driven by cost optimization



Cut costs related to nonprofitable customers and operations

Technologies like big data, cloud computing, chatbots, artificial intelligence and machine learning are amongst the many ways costs can be reduced. Building a data-driven strategy for cost reduction means giving data science & analytics teams **access to a data repository** that is contextualized, documented and trustworthy.



## Improving realtime decision making

With no legacy in their IT landscape, Fintech companies have integrated intelligent tools and platforms in order to interact more rapidly with their customers.

## Time has become a critical asset for any bank and insurance company.

Data insights can help automate decision making in the following areas:

### **CUSTOMER SERVICES**

Interactions are contextualized and are immediate,

#### RESPONSIVENESS

The most time-dependent subjects will be treated immediately,

### VELOCITY

Updating customer information must be done in real-time.



## Predict customer churn rates with more accuracy

In a very competitive market with the emergence of innovative and aggressive non-traditional actors, keeping customers **is a matter of survival** for banks and insurance firms.

Data and machine learning technology insights can dramatically improve customer attrition. This is only possible when data scientists and analysts have **all the necessary contextual information to achieve this goal in one place.** 

There are 3 ways of keeping customers in the financial sector:

### BY MODELLING CUSTOMER BEHAVIOR

Big Data and machine learning can help create personas and perform real-time mapping to identify those who churned in the past, and AI can predict churnlike events.

### BY MODELING SENTIMENT ANALYSIS

Deduced from the vast unstructured data collected from customer touch points, financial services firms can identify the "unhappy" signs.

#### BY ANALYZING TRANSACTION PATTERNS

Actions such as deposits, withdrawals, credit card activities, payments, etc. can reveal patterns on unusual customer behaviors, early-warning signs, and automate personalized recommendations.



The financial services industry has always suffered from fraud-related losses and damages. Global losses from payment fraud has tripled from USD 9.84 billion in 2011 to USD 32.39 in 2020 and is projected to cost USD 40.62 billion in 2027 – 25% higher than in 2020!

Even though a shift to the digital space opens new channels for financial services distribution, it also creates a rich environment for fraud.

Banks and insurers are therefore increasingly shifting from rule-based detection systems to machine learning based approaches to detect fraud. Why? Because a rule-based approach quickly finds its limits in its maintenance and scalability. For example, this approach applies an average of **300 different rules to approve a transaction**, and requires adding/adjusting scenarios manually and can hardly detect implicit correlations.

Machine learning technologies thus come with many possibilities: it becomes easier and above all more effective in detecting hidden correlations between consumer behavior and the probability of fraudulent actions.

RULE-BASED FRAUD DETECTION	ML FRAUD DETECTION
Catching obvious fraudulent scenarios	Finding hidden and implicit correlations in data
Requires much manual work to enumerate all possible detection rules	Automatic detection of possible fraud scenarios
Multiple verification steps that harm user experience	The reduced number of verification measures
Long-term processing	Real-time processing

Of course, since the arrival of mobile & online banking, a lot of different methods were put in place to limit fraudulent transactions such as two-step verification systems (usually sending an authentication code via text message or email address), a *secret question* only the user could answer, and more recently, fingerprint or facial recognition.

However, these new features won't stop new leaks and new types of fraud which humans cannot prevent. That's why investing in **ML fraud detection** must be a paramount use case for this industry.



## Offering innovative customer experiences

Prediction and personalization enable financial service companies to not only improve the services they provide, but also to **create new digital products** in a world full of digitally native consumers. The areas for innovation include:

### PERSONALIZATION

products ad'hoc Tailoring and services. whether this involves custom pricing, personalized messages or matching specific needs with specific services. Using data to personalize financial or insurance products to improve customer engagement, increase revenue and reduce attrition.

#### PREDICTION

Crunching information from data provides opportunities to predict the future by applying **behavior patterns.** Enhanced prediction improves credit decisions, insurance protection and, as mentioned above, fraud detection.

#### INTELLIGENT AUTOMATION

Financial companies use data and automation to create **new types of interactions** with their customers including digital identity verification and improving the onboarding process for instance.



### Strengthening Risk Management

Data & analytics technologies also have the potential to improve an organization's risk management strategies. They enable financial companies to increase the accuracy of **insolvency detections**. As a result, financial services firms can prevent actions that could affect any normal operation of their organization.

For example, data analysis helps in credit management. By implementing machine learning techniques and AI algorithms, financial companies are able to assess the payment patterns, airtime purchases, and any other factor that may indicate possible financial misuse. It is also beneficial for managing commercial loans. Before issuing a loan to an individual, financial institutions evaluate the ability of the person to repay. To improve the **accuracy of the predictions**, the use of big data analytics helps analyze the spending patterns of the potential customer.



### Enhancing data regulation usage

Financial services companies operate under a heavily regulated framework, which requires significant levels of monitoring and reporting. For example, the Dodd–Frank Act enacted after the 2008 financial crisis, requires the monitoring and documentation of the details of every trade.

Although very demanding, this "defensive" approach to data management also gives these firms the opportunity to turn constraints into benefits.

In turn, this results in a better enterprise-wide trust in data assets in order to leverage more innovative and reliable services.

Companies must then answer the following question: How to automate manual time-consuming compliance tasks to leverage powerful use cases?

Out of the many data regulations in this sector, here are some of the **main regulatory policies** to which data is subject to, and which have kept all Chief Data Officers, Data Protection Officers and general Chief Experience Officers in the financial sector busy.

### **BCBS 239**

The BCBS 239 is one of the major data regulations in the banking sector that was put in place to ensure **effective risk data aggregation and risk reporting**. BCBS 239 sets clear expectations that banks will have adequate and robust data and reporting infrastructure, frameworks, policies, processes and controls in place to ensure that they can withstand a range of adverse scenarios.

#### Its advantages?

Effective implementation of BCBS 239 supports accurate risk management practices and decision making processes, enhances the infrastructure for information, which reporting in turn, improves the resilience of the overall management system providing banks with a competitive advantage.

#### Its benefits?

Improved data aggregation and reporting go far beyond compliance! regulatory With BCBS 239, banks can reduce the probability of losses resulting from risk management weaknesses through data inefficiency, improve transparency and outcomes of regulatory inspections, improve cross-sell and client profitability through pricing, and much more.

In other words, BCBS 239 is heavily related to data management and governance. It is therefore essential to have the **appropriate data solutions** that enable financial services companies to comply with these requirements.

### **GDPR (General Data Protection Regulation)**

In 2018, the European Union adopted the General Data Protection Regulation (GDPR) and is applicable to any company in the world that deals with personal data in the EU.

By complying with the GDPR, you:

IMPROVE CONSUMER CONFIDENCE:

It will prove to clients that your enterprise ensures that the necessary framework is in place to keep data subjects' personal information secure.

```
CONSOLIDATE YOUR ORGANIZATION'S DATA:
```

The GDPR ensures that your data is easier to use and that you have a greater understanding of its underlying value. This insight will let your organization learn more about your customers and identify areas where their needs are unmet.

### OPTIMIZE COSTS:

This regulation pushes your company to get rid of any data inventory software and legacy technologies that are no longer relevant. By following the GDPR's mandate to keep your data inventory up-to-date, you can **significantly reduce the cost of storing data** by consolidating information that is stored in irrelevant formats.

By using customer information effectively, your organization will be able to make better decisions and consequently get a better return on its investments.

### KYC (Know your Customer)

Insurance companies and banks, like any other financial institution, have to prevent money laundering, tax evasion, terrorist financing, and other types of fraud (see Fraud Detection p.11).

In order to ensure that they know who their customers are, banks and insurance companies have to identify their customers **through KYC procedures.** 



Forcing banks to strengthen their customer identification is not just a constraint. On the contrary, the data collected as part of *KYC* also allows them to get to know their customers better in order to **better personalize their services.** 

Concerned with the rise of online banking and the arrival of new banking players, banks are now aware of the benefits of collecting and managing customer data.

The data collected as part of *KYC* becomes a mine of additional information to optimize the customer experience that would be regrettable not to exploit.

### Solvency 2

The Solvency 2 regulation is equivalent to the BCBS 239 but for the insurance industry.

Insurance companies have to prove that they are able to handle risks by analyzing their exposure and have enough capital allocation. And just like BCBS 239, there are advantages to complying with Solvency 2.

However, most insurers face the following challenges:

- Lack the infrastructure and expertise to manage vast volumes of data.
- No clear metrics on data and quantitative guidelines in place to calculate risks.
- Siloed data, preventing them from addressing the three Pillars (Capital Requirements, Governance and Supervision, Transparency and Reporting).
- No real or consistent transparency of investment data.



Therefore, to comply with these various regulations, it is important to first assess the institution's level of compliance and identify its weaknesses to define the standards to be implemented. Second, it is imperative to have the resources and skills necessary to leverage risk data to make better decisions and comply with the principles of governance, accuracy and adaptability.

Finally, banks must improve the consistency and quality of their risk data by ensuring that the information that makes up the reports **comes from a single**, **shared source**.





# The starting point for unlocking data

The starting point for exploiting data will be - above all - to know, understand, and make your assets accessible. In two words: **Unlocking data!** 

How can you achieve this? With the help of a data catalog, a sort of smart repository that centralizes and makes your metadata accessible to your data consumers.

# 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 unverified 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. Starting 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. Sustaining a data culture

A data catalog becomes the reference data tool for all employees. Because the interface does not require technical expertise for data understanding and discovery, the information in the data assets is no longer limited to a group of experts. It also allows your organization to **better collaborate** on those assets and leverage the information more easily. At Zeenea, we believe that a data catalog is a cornerstone in building a powerful data democracy.



### 4. Accelerating data discovery

As thousands of datasets and assets are being created each day, organizations find themselves struggling to understand and gain insights from their information to create value. Many recent surveys still show 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.



## THE DATA

# Zeenea The data catalog for the financial services industry



**Zeenea** helps financial services companies build an end-to-end information value chain. Our data catalog allows them to manage a 360° knowledge base using the full potential of the metadata of their business assets and a complete view on the necessary data to report to authorities.



### Absa Success Story

## How they were able to discover their data through a metadata catalog?

Absa is one of the largest commercial banks in South Africa. With so many different information assets at their disposal, Absa was in need of a solution that could answer their data challenges:

- Putting in place a system that could facilitate the documentation of their data in order to trace it and be conform with the BCBS 239,
- Centralize all data assets in their data lake,
- Implement a data discovery solution that could allow their users to quickly find the data they need,
- Establish a data governance framework that gives clear directives on the people and processes involving data.

By choosing Zeenea Data Catalog, they were able to overcome these challenges and more. After putting in place an easy-to-use and smart metadata repository, as well as interacting with our data experts through customer-centric workshops, Absa is able to fully find, understand and trust in their data assets. This means centralizing and governing not only their banking information in South Africa, but also in their other territories all over the African continent.

Zeenea was also able to develop a connector in order to collect and update Absa's information from their risk management data sources (Voltron), ultimately securing their data assets in the long term.

Overall, Absa's choice of Zeenea Data Catalog allowed them to have better control, management, and visibility on their enterprise data.

### Zeenea's unique features

### Universal connectivity

Banks and insurance companies have various data sources whether they be usage metadata, business metadata, compliance metadata, statistical metadata... the list goes on and on!

In fact, these firms 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, multicloud, 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.



### **Built-in Flexibility**

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 enable banks and insurance companies quickly and to incrementally build easy-to-use and comprehensive models to serve business needs and regulatory Structure your assets' reports. documentation with simple "drag & drop" features and create documentation templates for each type of asset in the way that works best for you.

You can define mandatory or optional properties, the type of information to be filled in and which of those properties are searchable. All in one place.



These features help financial services firms 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.



## A flexible and organically improved finance metamodel with Zeenea's Knowledge graph



### **Powerful automation capacities**

As mentioned before, GDPR, BCBS 239, KYC or Solvency 2 regulations 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.

### Compelling user experiences

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



### Zeenea's advantage

For data management teams

Our data catalog enables financial firms to improve data governance teams' productivity by providing data stewards with a highly productive, automated, flexible and smart data catalog through our app **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 financial context, our data catalog is 100% customizable with automation capabilities & suggestions.

Catalog status

### Zeenea's advantage for 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 enterprisewide 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 most valuable information obtained on user behavior and profile to offer the most relevant data catalog exploration possible!

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Both applications provide all your data consumers with **sharing capabilities** to allocate their knowledge on 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.



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Dataset contact

### A quick & cost effective start

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 bottomup data driven initiatives to maximize ROI **in a matter of weeks**.



USD 22,000 for the Team Edition and USD 48,000 for the Enterprise Edition

## Conclusion

Throughout the pages of this white paper, we've made it clear that digitization and the use of data for traditional and non-traditional actors in the financial services industry can no longer be avoided. To start this long journey, 3 major steps are necessary:

- **1.** Centralizing and referencing your organization's data,
- **2.** Putting in place data governance policies and an enterprise-wide data culture,
- **3.** Choosing the correct tools and solutions in order to start implementing the above.

Therefore, when it comes to data, we recommend laying a solid foundation that is shared across your organization.

# At Zeenea, we strongly believe that the implementation of a data catalog will help your teams become more autonomous and efficient in their data discovery.

Our solution 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 bottlenecks they experienced until now and to address their digital change challenges.

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## More information about our Data Catalog?

Contact us now for a free demo!

**#BeDataFluent** 

**Contact us**