The Journey from

On-premise to the Cloud:

Creating a Domain Data Store

in a Contact Center

Presented by:

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- Development of business intelligence infrastructure to handle big data
- Design cloud computing solutions in AWS
- Advanced analytics and visualization

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What is the Cloud and how it Supports Analytics Infrastructure?

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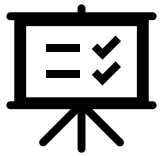
Some Basic Concepts

- **What is this journey about? In simple terms:**

  Moving our data from an older “on-premise” infrastructure to a new “cloud” platform

Call system metadata

Workforce management



Performance metrics and client satisfaction

- **What is on-premise? (Existing)**

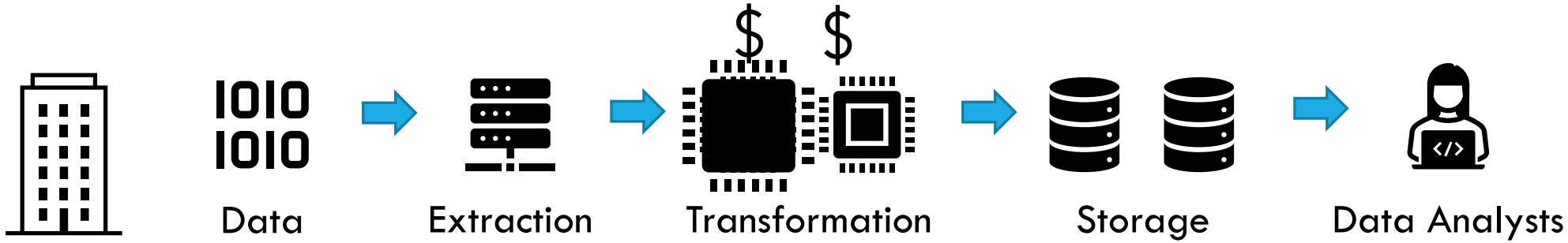
When data is stored in our own hardware (typically inside our building) which we buy, maintain and upgrade.

- **What is “the cloud”? (Proposed)**

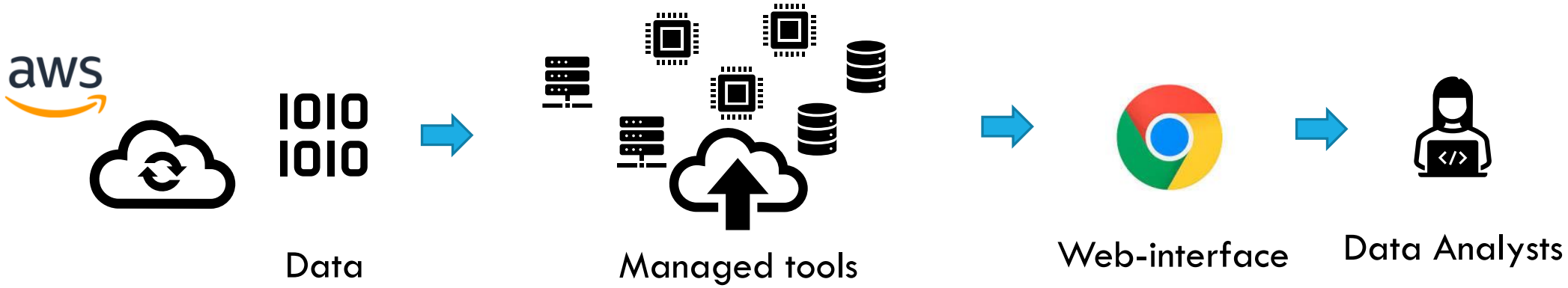
When data is stored in an external provider hardware, which they buy, maintain and upgrade. Typical providers are Amazon Web Services, Google Cloud and Microsoft Azure

Why using a Cloud Approach?

1. On-premise Storage and Compute



2. Cloud Storage and Compute



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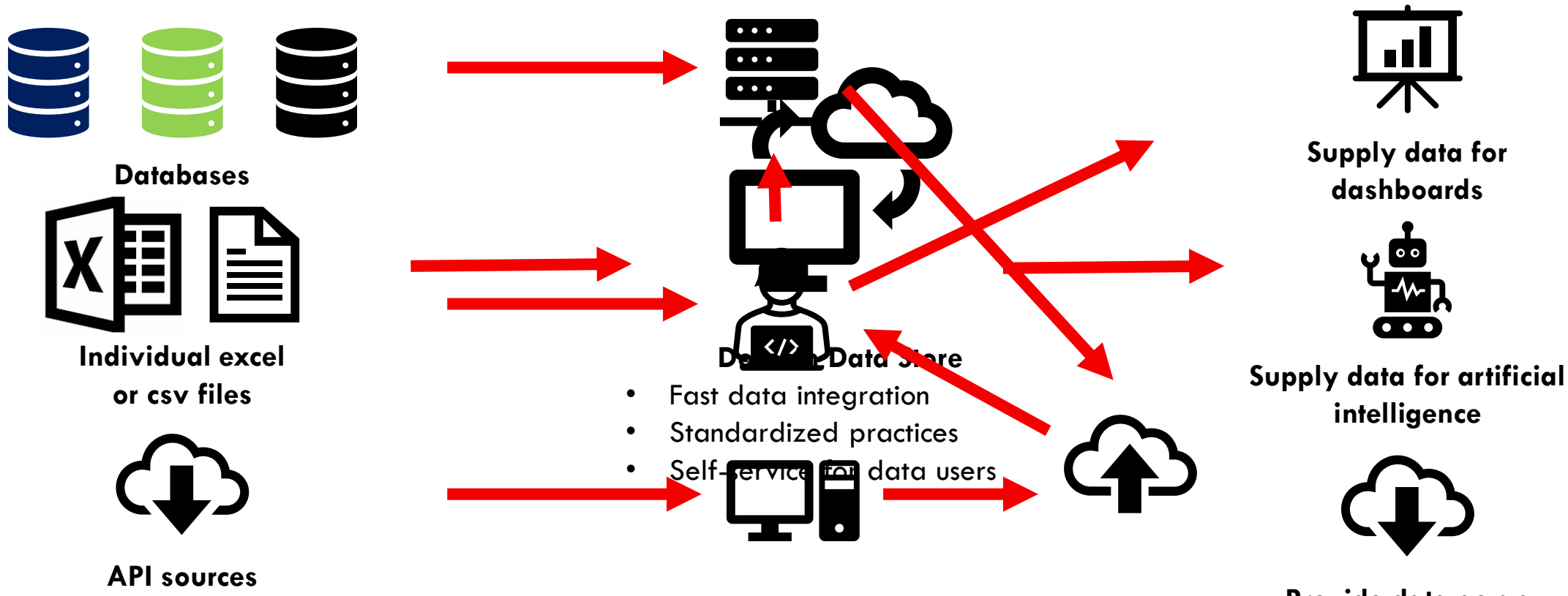
Why Doing this for our Call Center?

The cloud services enables a more flexible and dynamic platform for analytics innovation through the creation of a Domain Data Store (DDS)



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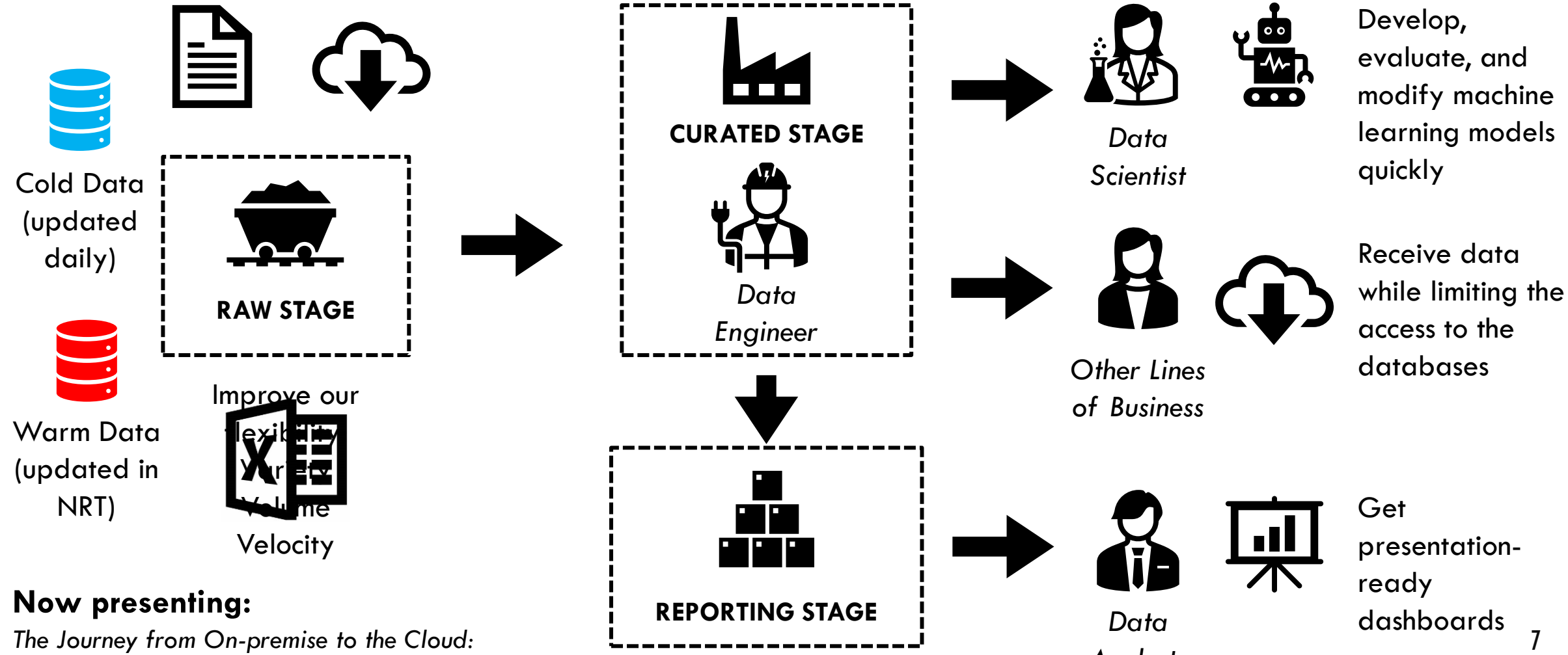
Why is it Useful?

We have three stages to respond to our internal clients needs:



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How does it Work?

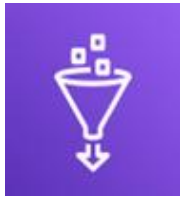
We use three core AWS tools (along many other support systems) to run our analytics pipelines:

AWS Simple Storage Service (S3)

- **Object** storage
- Super-high durability
- High scalability and availability

AWS Relational Database Service (RDS)

- Fully managed service
- Allows scaling, backup and recovery
- High throughput storage



AWS Glue

- Serverless data pipelines
- Extract, Transform and Load in a single service

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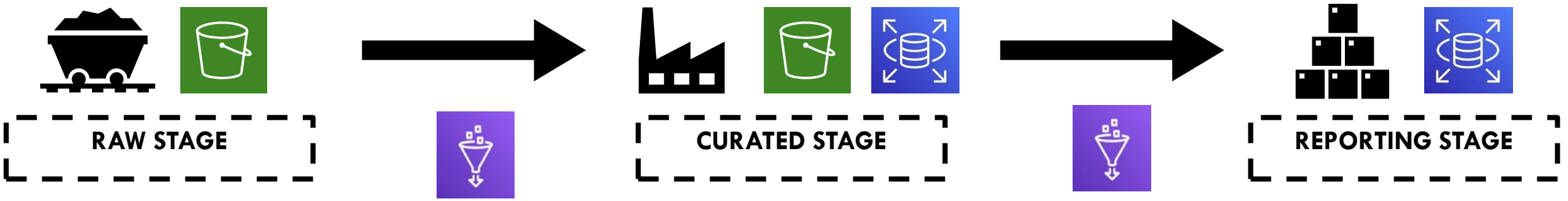

- Stored in S3 as a data lake
- Structured, semi-structured or non-structured
- Hundreds of gigabytes per source

Clean data, transform and apply general business rules

- Stored in RDS or S3
- Structured cleaned data
- Dozens of gigabytes per schema

Apply specific business rules

- Stored in RDS
- Use case data only
- Smaller tables
- High availability and resilience

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The Challenges to Move from On-premise to Cloud

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What are the Potential Challenges?

Technical Issues: The variety of data sources and the compatibility with AWS tools like AWS Glue

- ✓ Native support in AWS Glue
- ✓ Native support for AWS Relational Database Service (RDS)
- ✓ Easy connect and adapt with other systems in AWS

- ✓ Recently added native support
- × Not really compatible with other services like AWS Database Migration Service (DMS)
- × More complicated to connect with other AWS services

- × No native support
- × May become very complicated to connect to other AWS systems

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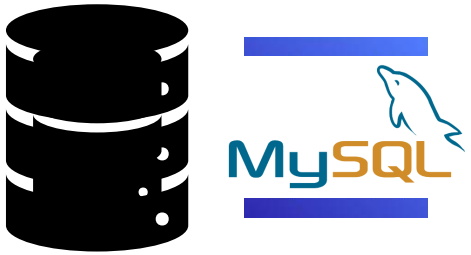
What are the Potential Challenges?

> **Design issues: Trying to exactly replicate legacy on-premise systems in the cloud and use only out-of-the-box solutions.**

Source Databases (1 Tb)



MySQL database hosted in **AWS Relational Database Service** (RDS)

I need:

- *An analytical database*
- *Make occasional ad hoc queries for a few users*
- *Export daily reports to Excel or PowerBI*

Cost per year for two instances:
db.t3.large → **5040 USD**
db.r4.large → **7488 USD** (memory optimized)

Iceberg database hosted in **S3**

Cost per year in two regions:
S3 storage and Athena query→ **81 USD**
(50 USD S3 storage)
(32 USD Athena query)

*There is always a **BUT**:*
Requires some degree of technological expertise in the team (e.g. Python or Scala programming)

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The Future Possibilities of a Cloud Infrastructure

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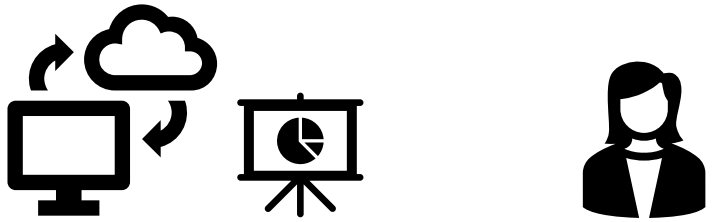
Adapting to the Future in Record Time

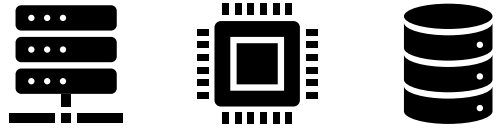
- **Automatization of manual tasks like generating reports or creating datasets (self-service)**



- **Implementation of Large Language Models (LLM's) directly on the solutions**

- **Enables rapid proof-of-concept and development in business intelligence and machine learning**

- **Modify the variety, speed and volume of your data at scale**



Main Takeaways

1. The use of Cloud Systems can improve data diversification, scalability faster innovation

2. Having a clear idea of what the final solutions should do could prevent many challenges (start by the end)

3. Future business needs and technologies will be applied more easily

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Thanks for your attention!
Questions?

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