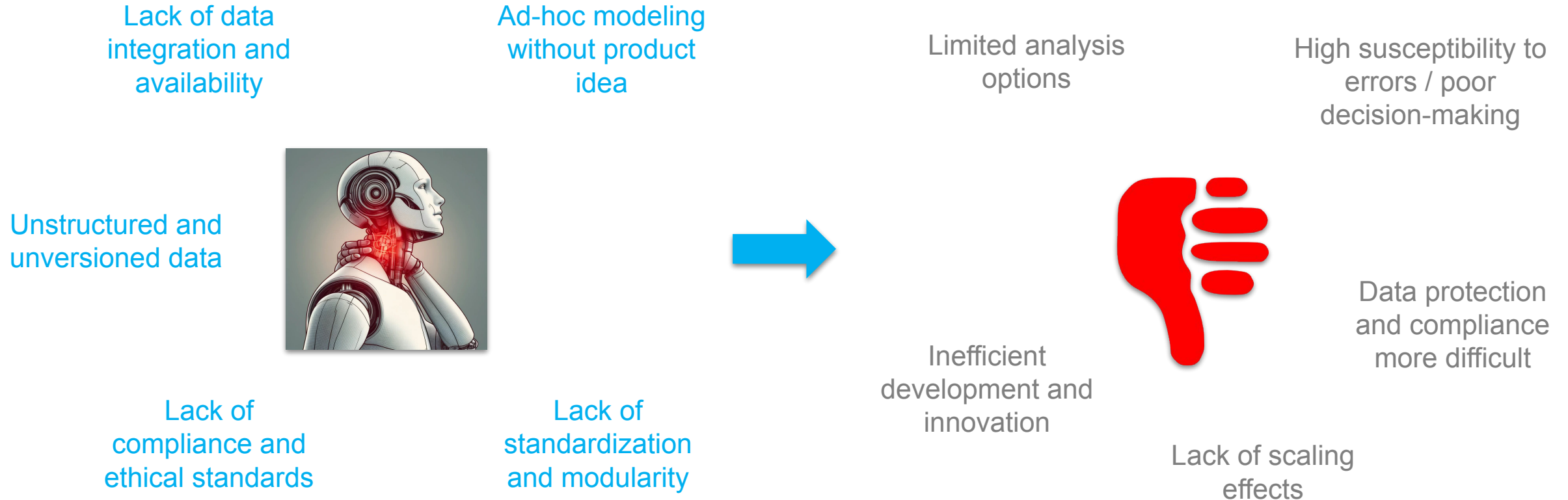# DATA-, ANALYTICS- AND AI PLATFORM

The foundation for building your data-driven company

WHY IS A DATA AND AI PLATFORM STRATEGY NEEDED?

Pain points and challenges

Lack of data integration and availability

Ad-hoc modeling without product idea

Limited analysis options

High susceptibility to errors / poor decision-making

Unstructured and unversioned data

Inefficient development and innovation

Data protection and compliance more difficult

Lack of compliance and ethical standards

Lack of standardization and modularity

Lack of scaling effects

THE CORE ELEMENTS

Ailio

WHY?

➔ **Competitive advantage**

➔ **Increased efficiency**

➔ **Innovation**

➔ **Data utilization**

➔ **Customer loyalty**

➔ **Data protection, ethics and compliance**

HOW?

➔ **Optimized database & strategy**

➔ **Data, analysis and AI platform**

➔ **Productization of analyses and AI models**

➔ **Operationalization / Data Products**

OPTIMIZED DATABASE & PLATFORM

Initial questions

→ Identifying the teams - who actually needs the data?

→ What problems do we want to solve with the data platform / How do we work with the data?

→ What are the technical requirements? (Scalability, storage, networking, etc.)

→ Is there a standardized data format that we can agree on?

Data-driven
Use cases & AI models

Source Systems

Data Pipelines

Data Warehouse
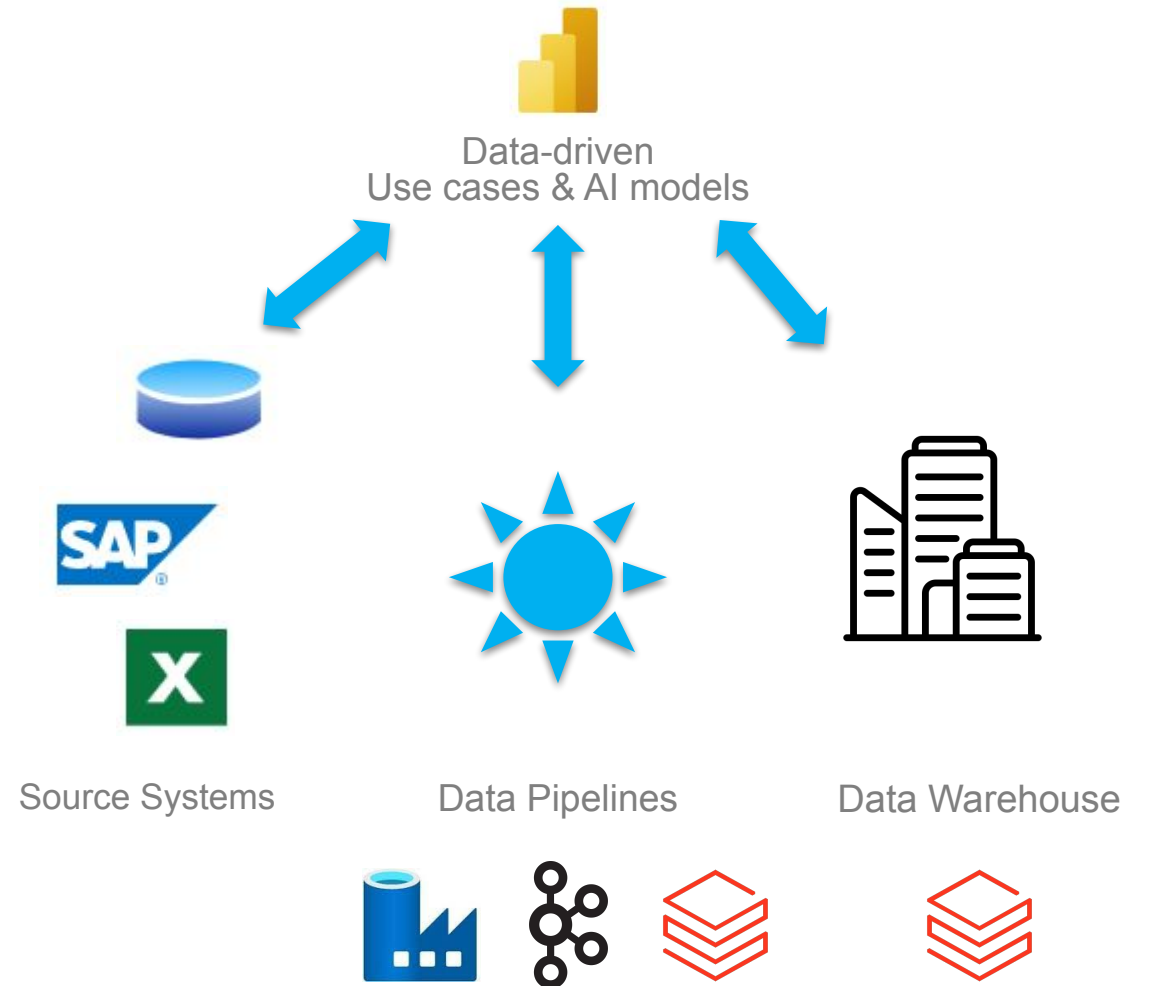
OPTIMIZED DATABASE - PRACTICAL EXAMPLE

The Challenge

➔ Diverse data landscape of enterprise companies should be made available for data platforms

➔ Data is stored in different formats, structures and is managed by different teams; a uniform data strategy is to be found

➔ Strong coupling of individual systems should be softened

Our Solution

➔ Databricks as a data platform on Azure

➔ Microsoft Azure Data Factory as a high-level pipeline tool (data is pulled)

➔ Confluent Cloud as a managed streaming engine to provide data in a structured way and in real time (data is pushed)

Use Cases

➔ Standardization of thousands of source systems

➔ Reporting systems (including anomaly detection in real time)

➔ Asynchronous data exchange between different platforms - e.g. Salesforce and various internal data solutions

Our achievements

➔ In a team of 6 people, we standardized over 5,000 data sources within six months and made them available in a DWH

➔ Self-service architecture suitable for compliance
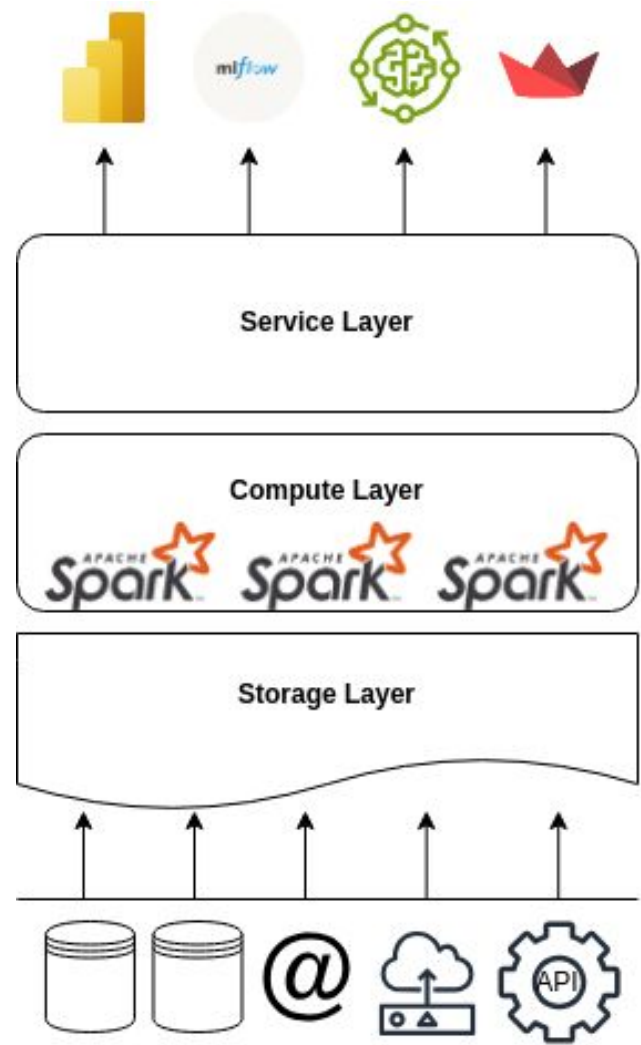
DATA-, ANALYTICS- AND AI PLATFORM

Keyfacts

➔ Cloud first - Databricks is designed & made for the cloud
➔ Data compliance and governance solution
➔ Fully managed - comparatively little infrastructure effort for Databricks, the focus is on the features

De Facto standard / Best-of-Breed

➔ Cloud - Microsoft Azure
➔ Language diversity - Python, Java, Scala, R
➔ Notebooks as a familiar interface for data scientists
➔ Cooperation between teams through Git integration (notebooks are not JSONs in Databricks!)
➔ One language that everyone speaks - everything is a data frame!

Versatile tooling landscape and options

➔ Out-of-the-box services such as MLflow, Feature Store, Model Serving
➔ BI connection
➔ Workflows (triggerable processes)

STANDARDIZED PLATFORM - PRACTICAL EXAMPLE

The Challenge

➔ Retail Company: Migration from SAS to Microsoft Azure

➔ Building a new analytics environment

➔ New models & lifecycle

Our Solution

➔ Introduction of Databricks as a central analysis and AI platform

➔ Data integration via Microsoft Azure Data Factory Pipelines and Medallion Architecture

➔ Live SQL dashboards for data integration and quality

➔ MLflow for the development, registration and deployment of machine learning models

➔ Introduction of Feature Store for KPI calculation

➔ Security and governance principles with Databricks Unity Catalogues

➔ CI/CD pipelines and version control with Github (Actions)

AI & Analytics Use Cases

➔ Customer segmentation

➔ Coupon recommendations

➔ Customer contact route

➔ Assortment optimization

➔ Customer needs analysis

➔ Migration analysis

Our achievements

➔ Creation of analytics product catalog

➔ Increasing the speed of development and innovation

➔ Lifecycle management for ML models

➔ Traceability of historical analysis results

➔ Ensuring compliance guidelines and documentation
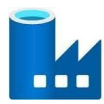
PRODUCTIZATION OF ANALYSES AND AI MODELS

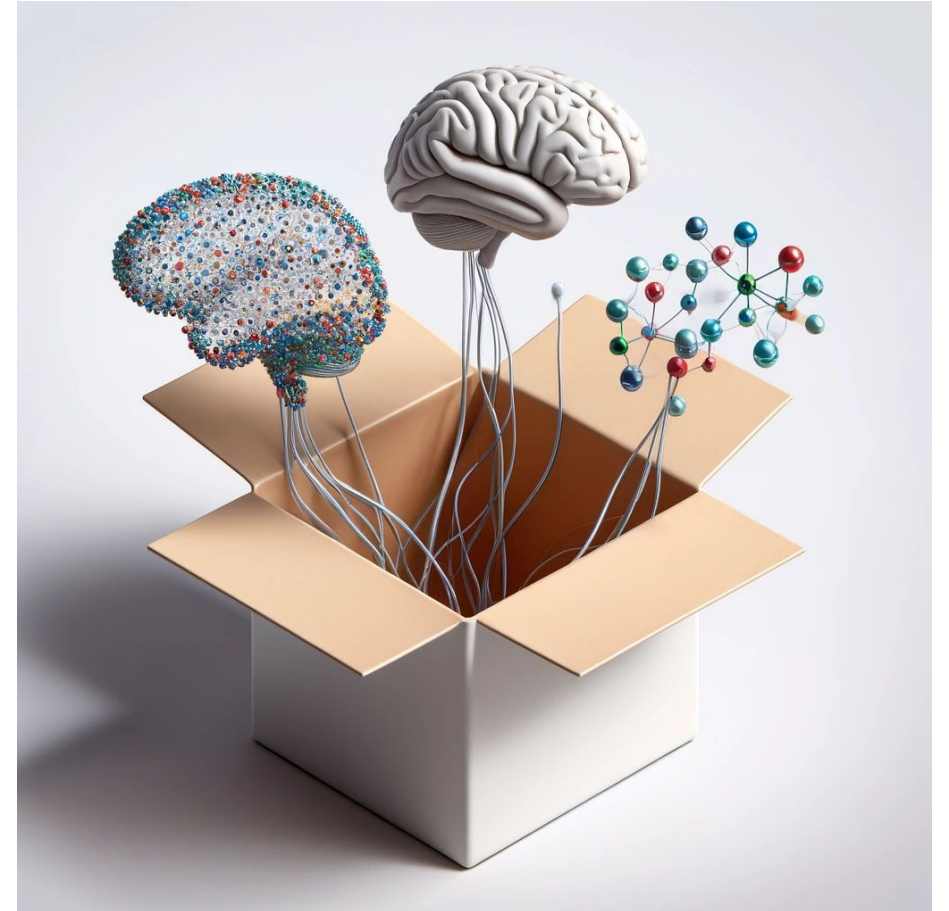**Development of a "toolbox" for AI models and analyses**

➔ Generalize models and analyses

➔ Standard analyses to answer recurring questions

➔ Enable application to different data

➔ Modular structure of data engineering, feature extraction, analyses and models

➔ Interchangeable "building blocks

Standardized exports and presentation of results

➔ Development of systematized visualizations, exports and dashboards

➔ Standardized connection to BI tools
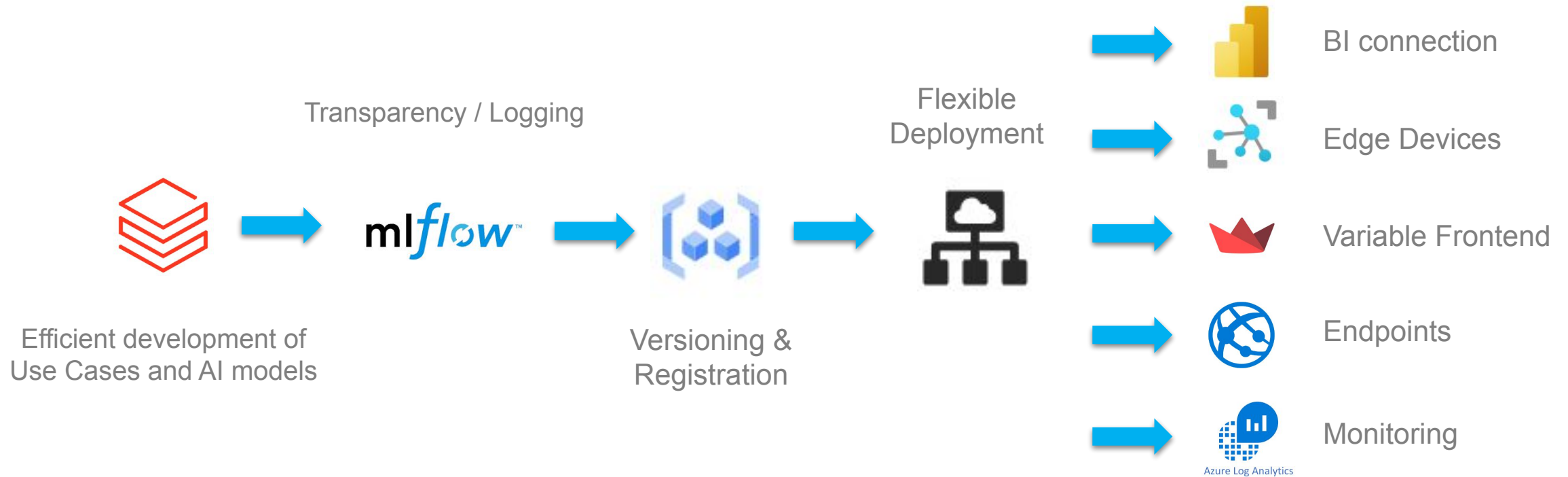
Defining business value

➔ Optimize models for business value and avoid falling into the R&D trap

OPERATIONALIZATION OF DATA PRODUCTS

The foundation for your operational data products

Transparency / Logging

Flexible Deployment

BI connection

Edge Devices

Variable Frontend

Efficient development of Use Cases and AI models

Versioning & Registration

Endpoints

Monitoring

Azure Log Analytics

THANK YOU

TOGETHER - SIMPLY - DOING IT

Your contact person

Daniel Brokmeier
Head of New Business

Mobil 0160 979 604 82
dbrokmeier@ailio.de

Let's connect on

Linked in

CLICK HERE FOR OUR PODCAST "KI IS (NOT) A ROCKET SCIENCE!" (german)