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DEMO DAY

Enterprise Data Management

2021

About Me

John Ebenezer
VP - Head of Data and Analytics
at Compunnel Digital

▷ **20+ years** of professional experience leading Enterprise Data & Analytics Services.

▷ Industries like Banking & Finance, Insurance, Lifesciences & Healthcare, Education, Retail and Manufacturing working for Fortune 5000 clients.

▷ Specialize in Data and AI, including Enterprise Data Management (Data Governance, DQ, MDM), Data Warehousing, Data Analytics, Big Data Engineering, Data Architecture, Program Management, and Organizational transformation.

Agenda

The demonstration today showcases use-cases in Enterprise Data Management that brought transformational impact for customers:

▷ Enterprise data intelligence platform p...
automation and real time analytics wh...
with HIPAA standards.

▷ Advanced Data Analytics solution incubating data quality and MDM that provides increased operational efficiency, risk management, and revenue growth

▷ Unifying disparate systems with Data Management Solution to streamline data processes and IT & business alignment.

▷ Unified marketing analytics platform that drives digital ROI for you.

▷ Key Data Management Implementation Questions

▷ Modern Data Management Enrichments

The Use Case

Advanced Data Analytics Solution Incubating Data Quality & MDM

Business Problem

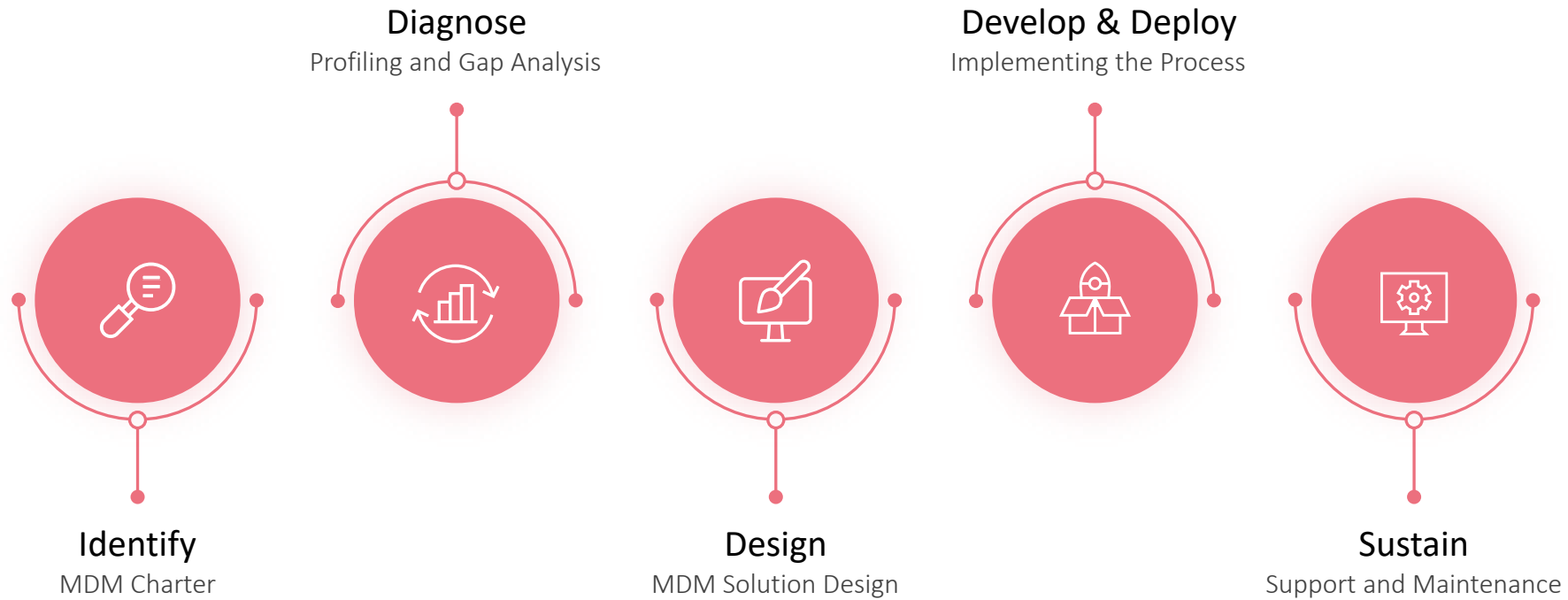The Banking client was on roadmap to move all its branches to CBS (Core Banking Solution) enhancing customer convenience through Anywhere and Anytime Banking. It was also undertaking critical information delivery projects like Customer-relationship Management (CRM) and Enterprise-wide Data Warehousing (EDW).

The Roadblocks

- Absence of Data Standards and defined accountability for Masters

- No SLAs defined for the various stages of Master Data like approval, authorization, master data creation etc.

- Lack of standardized processes for creating and updating master data

- No standardized forms / templates for requests for creating and updating master data

Solution Approach

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Diagnose
Profiling and Gap Analysis

Develop & Deploy
Implementing the Process

Identify
MDM Charter

Design
MDM Solution Design

Sustain
Support and Maintenance

Outcome

Improved data accuracy that was regulatory compliant

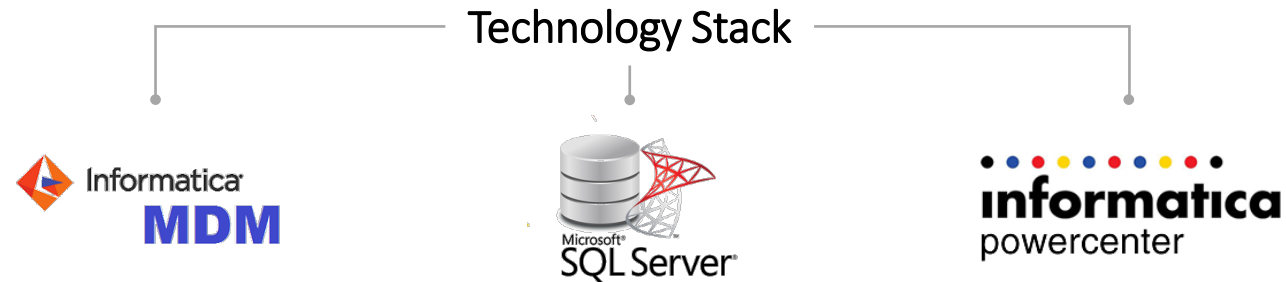Consolidating the data from various source system

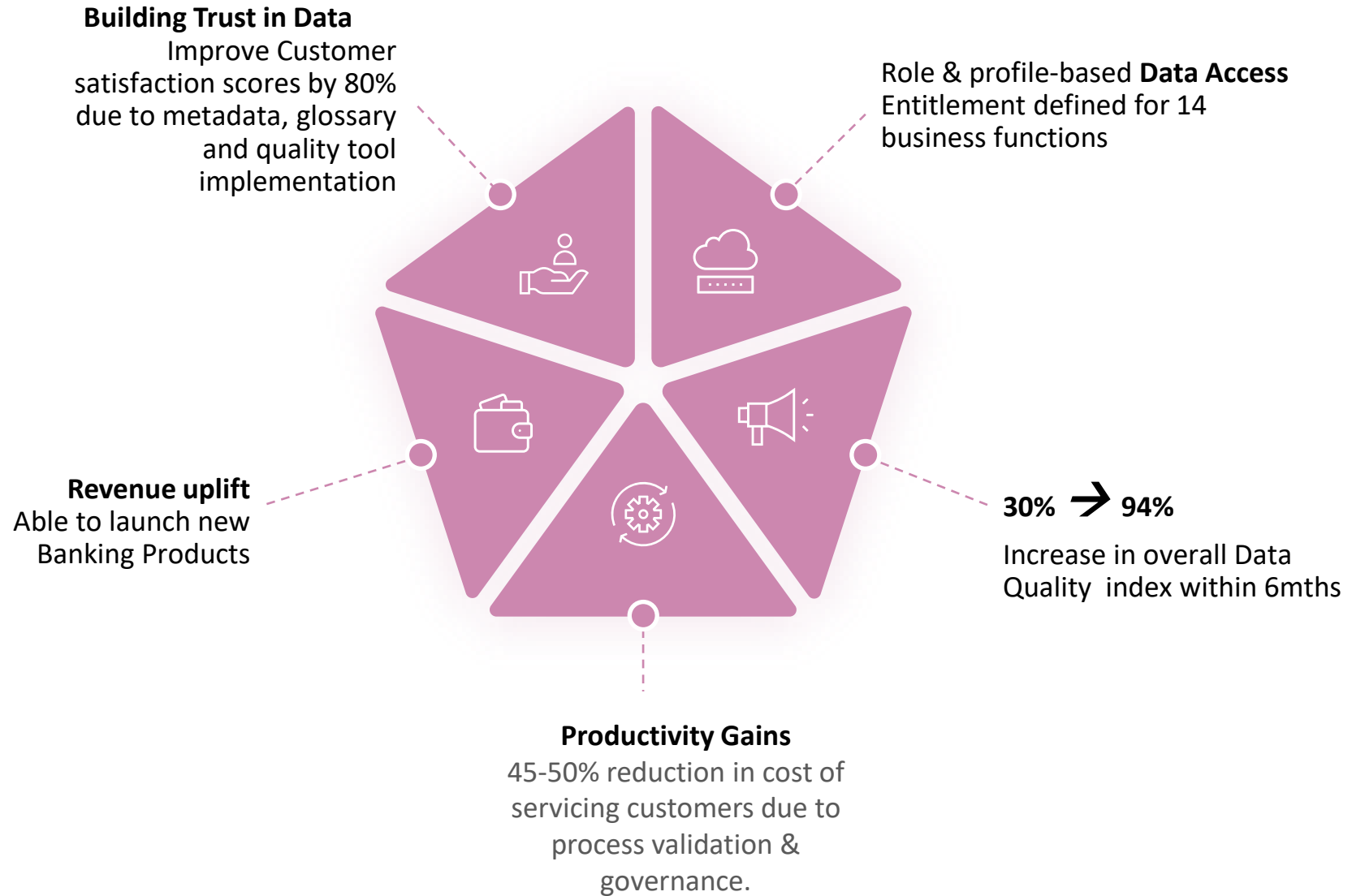Enabled single version of truth.

Eliminating redundant and incorrect data

Designed single common repository that enable data access more effectively

Technology Stack

Informatica **MDM**

Microsoft® **SQL Server**®

informatica powercenter

Benefits

Building Trust in Data
Improve Customer satisfaction scores by 80% due to metadata, glossary and quality tool implementation

Role & profile-based **Data Access** Entitlement defined for 14 business functions

Revenue uplift
Able to launch new Banking Products

30% ➔ 94%

Increase in overall Data Quality index within 6mths

Productivity Gains
45-50% reduction in cost of servicing customers due to process validation & governance.

The Use Case

Enterprise data Intelligence Platform

Business Problem

A leading Healthcare service provider known to treat traumatized and serious emotional problems among the teens and young people.

The client has continued to struggle across multiple divisions to access information as well as capture the information needed to meet industry standards with their funders and governing bodies. Because of this, they considered seeking a new EHR solution, but then learned their current system was likely not leveraged to its full capabilities. The organization, however, was unclear on how to optimize the solution and desperately needed guidance on appropriate next steps. It also lacked the internal methods to integrate system changes alongside their evolving organization and health care ecosystem.

▶ Their processes required an abundance of manual tasks and duplicative efforts and provided inadequate reporting and analytic capabilities. Additionally, the improper use of applications and use of external systems (including paper documentation) created inefficiencies, a lack of data integrity and a lack of visibility across the entire organization as there was no defined central view of the individuals served.
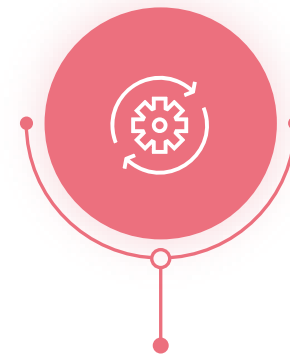
Solution Approach

Prioritise and Identify

- Prioritized the applications that had data quality issues.
- Identified the areas that had major business impact
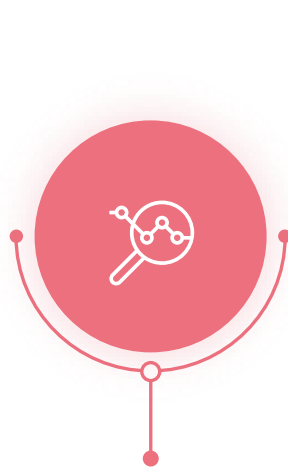
Assess

- Performed assessment of the existing EHR systems.
- Identified the gaps in the operational workflows.

Enable DQ Processes

- Designed the end to end DQ process.
- Defined the business related DQ rules
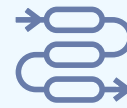- Performed DQ standardization, matching, enrichment and validation.

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Outcome

Improved data accuracy, consistency and accessibility.

Identified the disconnected systems and multiple manual processes.

The streamlined DQ process enabled the applicable use of intended purposes.

Standardized the Critical Data Elements across the systems.

Technology Stack

Informatica IDQ

ORACLE

UNIX

Benefits

Significant improvement in patient care response

Increase by at least 50% in effective and timely service to the patients.

40-50% increase in effective administrative and clinical operations

About 85% Reduction in duplication of same patient data from different sources

The Use Case

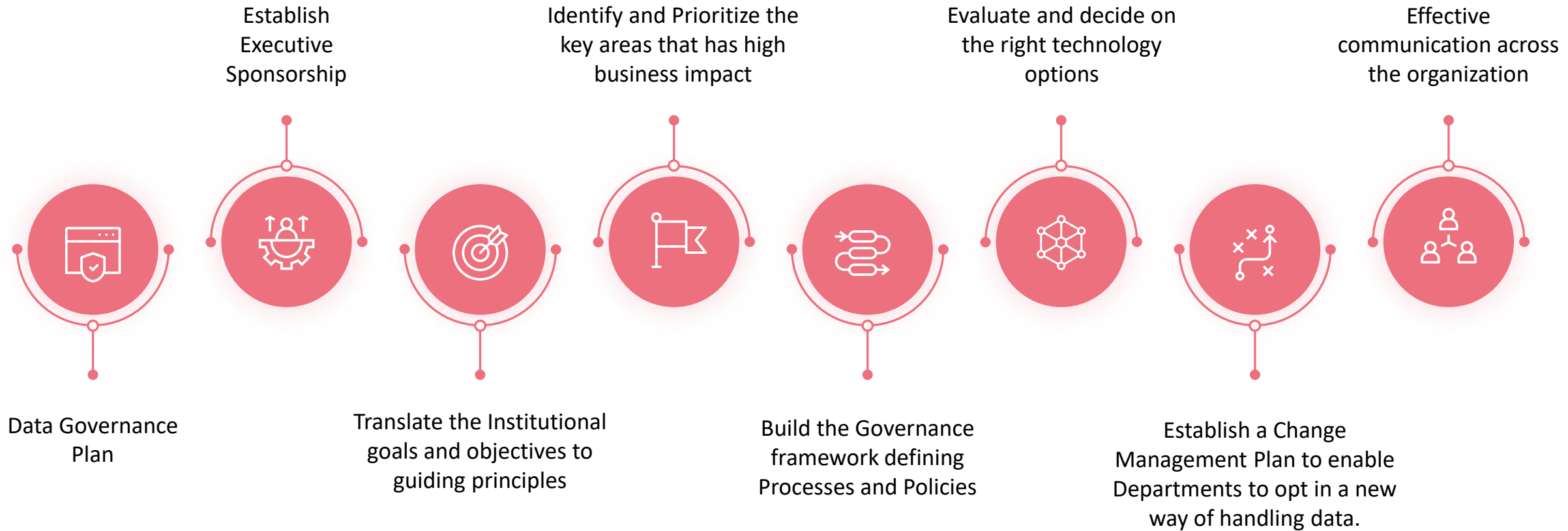# Unifying Disparate Systems with Data Management Solution

Business Problem

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▶ A US based university consisting of a group of colleges was facing wide discrepancies among departmental data, and which eventually led to submission of inaccurate data to institutional research. The university would struggle to steward the data they need to manage their business and future plans. Departments across every campus collected some kind of data, whether formally or in homegrown departmental shadow systems. This is where the problem lies: data is ubiquitous and plentiful, but it's rarely organized, standardized, or leveraged for a common purpose.

▶ They used to source data from separate departments using different tools which led to inconsistencies and inaccuracies. It was difficult to report on institution-wide activities, leading the leadership, administrative functions, and academic departments and colleges competing for limited funding opportunities

Solution Approach

Establish Executive Sponsorship

Identify and Prioritize the key areas that has high business impact

Evaluate and decide on the right technology options

Effective communication across the organization

Data Governance Plan

Translate the Institutional goals and objectives to guiding principles

Build the Governance framework defining Processes and Policies

Establish a Change Management Plan to enable Departments to opt in a new way of handling data.

Solution: Enterprise Data Governance Framework [EDG]

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DG Strategy & Charter		
Governance Strategy & Vision		
Control (Efficiency)		Growth (Monetization)

Productivity | Brand Equity | Performance

DG Core Areas Block

Business As Usual & Program Management (PMO)

Data Stewardship	Lineage	Glossary	MDM	Metadata	Innovation
	Data Quality	Access & Ownership	Security		

Change Management & User Adoption

DG Enabler Block

People & Culture

Policy, Process & Operating Model

Tools & Technology

DG Foundation

Data Architecture

Information Lifecycle Management

Acquisition — Analysis — Processing — Storage — Sharing — Retention — Disposal

Structured	Apps & DBs	Master & Reference Data Hub	EDW & DL	Unstructured

Data Model

Outcome

Reduction in data fragmentation by bringing together data from multiple systems and ensuring security across all aspects

More advanced and accurate data reports with the implied Data Governance strategy.

Consistent data quality through Data Stewardship group because of precleaned and standardized data

Visibility across multiple data domains

Technology Stack

Collibra

SAP HANA

SAP Data Services

Benefits

Enhanced communication and joint decision-making.

Authority and control over the Institutional Data asset

60% Increase in data security and privacy compliance for data reliability

30% Increase in top line growth of Student Admissions and **40%** reduction in operational cost that caused due to redundant efforts.

The Use Case

Unified Marketing Analytics Platform

Business Problem

Client is a large license heath insurance provider to more than 3.8 million people in United States. They empower the people for their best health by leading with strength, integrity and innovation to generate substantial improvements in health care quality, affordability and member experience.
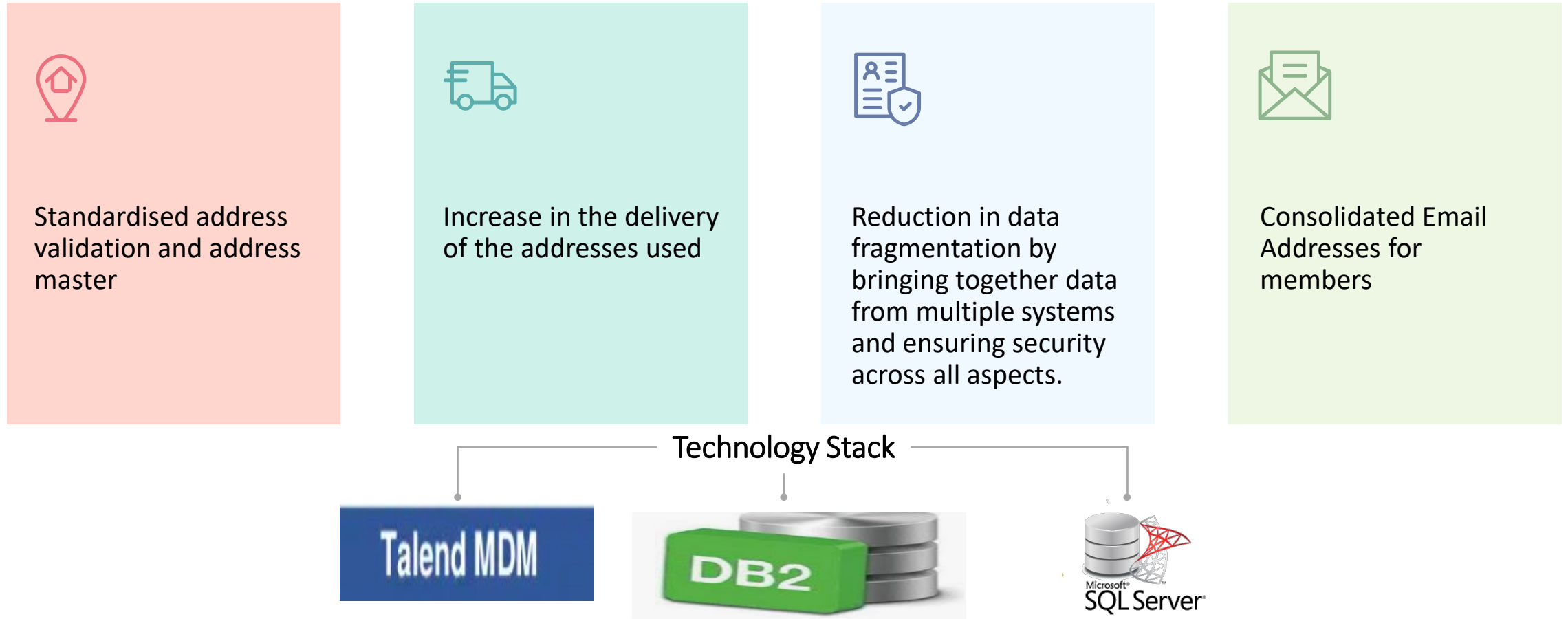
In Client's current system, around 20% of the business correspondence was returned as there was no address standardization
Source systems stored the addresses in comment field making it difficult for correspondence.

▶ **Inability of system to manage and integrate heterogeneous and disparate data regardless of the source.**

▶ Lack of visibility across multiple data domains for members, providers, products etc.

▶ Duplicate data across multiple systems leading to data divergence

▶ Inaccurate reporting & analytics from the Data Warehouse

Outcome

Standardised address validation and address master

Increase in the delivery of the addresses used

Reduction in data fragmentation by bringing together data from multiple systems and ensuring security across all aspects.

Consolidated Email Addresses for members

Technology Stack

Talend MDM

DB2

Microsoft SQL Server

Benefits

Address Cleansing increased by approximately **90%** Includes mapping of city to zip

Almost **40% reduction** in customer service cost

20-30% Reduction in administrative and operational cost

Unified view of the customer

Key Data Management Implementation Questions

Demo Day 2021

What are the challenges in Kick starting a DM engagement ?

Organizations continue to invest in data and analytics; however, many face challenges in translating DM investments to business outcomes and value

Realizing business value and enabling business objectives should be the focus while deciding on DM investments

A robust DM strategy and a clear, actionable roadmap of initiatives & supporting capabilities (people, process & technology) can help organizations stay on track in their pursuit of benefits from DM

The approach to creating an effective DM roadmap starts with understanding the business objectives and key business questions

What is the quick win that can return good ROI in the short term?

Focus on 'speed to value' and incremental realization of capabilities, outcomes and benefits help minimize the time stakeholders have to wait to see results and benefits

Agility to respond to changes in priorities and competitive landscape is critical for DM roadmaps

A consistent prioritization framework, aligned to business strategy and value, to evaluate various DM opportunities is important

Digitalizing the prioritization and planning process can enhance effectiveness of the process by making it more simple, consistent, transparent and agile

What are the new methodologies in implementing Governance?

Collaborative Approach with Customizable Roles

Advanced UX & UI with Messages and Alerts

AI & ML for User Assistance and Support

Proactive and Preventive DataGov for DataOps

Automation of Technical Processes

Metadata-Centric Multi-Cluster and Multi-Enviroment

Open-Source Ecosystem, API-First and Cloud-First
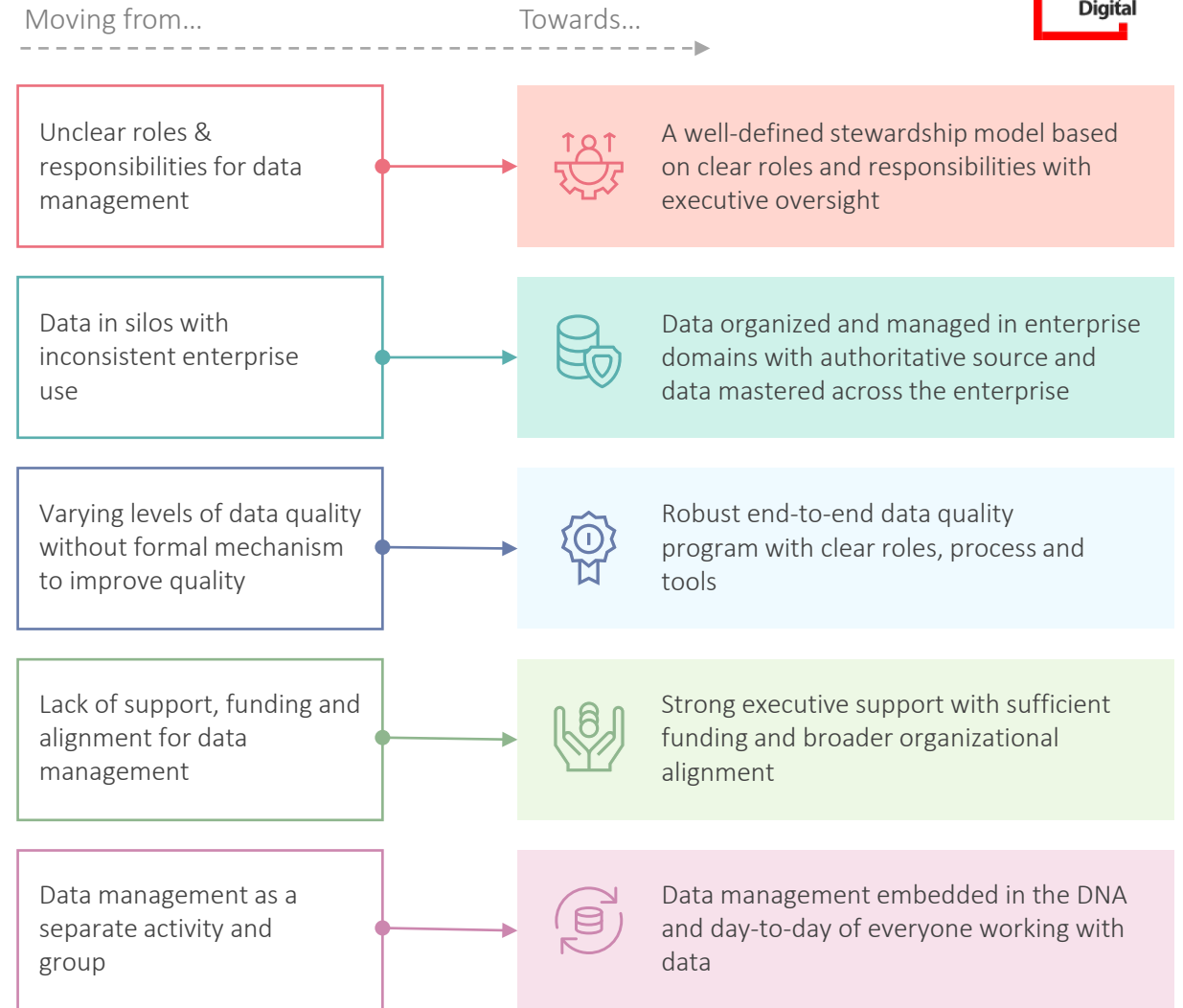
Scalable Architecture with Microservices

Unlimited Users and no Vendor Loc-In

Low Initial Investment and Pay-Per-Use Model

How to minimize the risk of DM Implementation failure?

Moving from...   Towards...

Unclear roles & responsibilities for data management	A well-defined stewardship model based on clear roles and responsibilities with executive oversight
Data in silos with inconsistent enterprise use	Data organized and managed in enterprise domains with authoritative source and data mastered across the enterprise
Varying levels of data quality without formal mechanism to improve quality	Robust end-to-end data quality program with clear roles, process and tools
Lack of support, funding and alignment for data management	Strong executive support with sufficient funding and broader organizational alignment
Data management as a separate activity and group	Data management embedded in the DNA and day-to-day of everyone working with data

What's new in the Data Management space?

Artificial Intelligence/ Machine Learning for DM

Augmented Data Management

DataOps

Data Governance Trends

Data Fabric

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Q&A

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Thank You!

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APPENDIX

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Artificial Intelligence/Machine Learning for DM Automation

- AI plays an ever-increasing role in enterprise solutions. Unlike robotics, which automate manual tasks, AI automates computing tasks.

- That's especially valuable given the large and diverse data sets most organizations use today.

- While the human role in enterprise solutions will never disappear, it's foolish to argue against the advantage of AI-augmented humans.

- Gartner estimated organizations that offer a curated catalog of internal and external data will realize twice the business value from their data and analytics investments. It also predicted 80% of data lake projects will fail to deliver value due to challenges in inventory and curating data through next year. A big hurdle to this is the manual effort required to curate and manage the data catalogs. Gartner predicted 60% of data catalogs that do not use machine learning to assist in finding and inventorying data across a distributed environment will fail to be delivered on time.

- But for AI to reach its full potential, the data feeding its algorithms and models needs to be well-understood. Data lineage plays a vital role in understanding data – making it a foundational principle of AI.

AI ML Importance in Data Management

▶ "Augmented Data management: Metadata Is the New Black" ranks fifth among the Top Trends in the world of Data & Analytics.

▶ Augmented Data Management technologies will free up to 20% of their time for collaborations, education and self-education, and for high-value DM tasks.

▶ According to Gartner, by 2023 IT specialists will be less engaged in managing and preparing repetitive and low-impact data.

▶ By 2023, organizations that dynamically automate, connect and optimize their DM processes via Active Metadata, Machine Learning, and Data Fabric will spend 30% less time on Data Integration. Today everybody needs to know what data are available, what their meaning within the organization is, how valuable and how reliable they are.
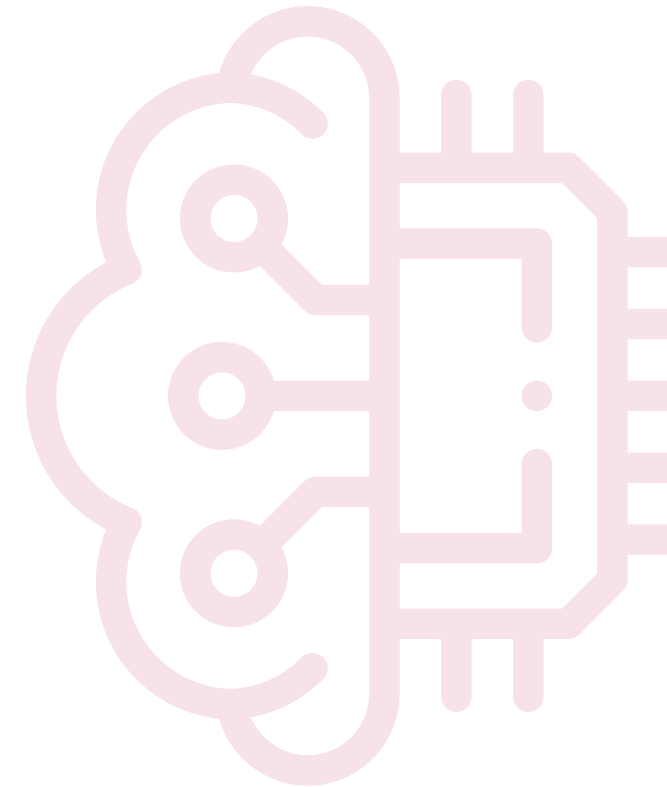
Making Sense of the widely available DATA

Huge amounts of data are often distributed in multiple sources, perhaps in various cloud systems. Making this information quickly available for different users is not as easy as pie. So, what can we do?

Step: 1

Boost up the metadata. These contain the organization's data in the form of entities, their attributes and relationships between them. Consider a metadata management system as a corporate safe.

Step: 2

It is usually administered by the Chief Data Officer and neatly stores all that concerns the company's data of interest.
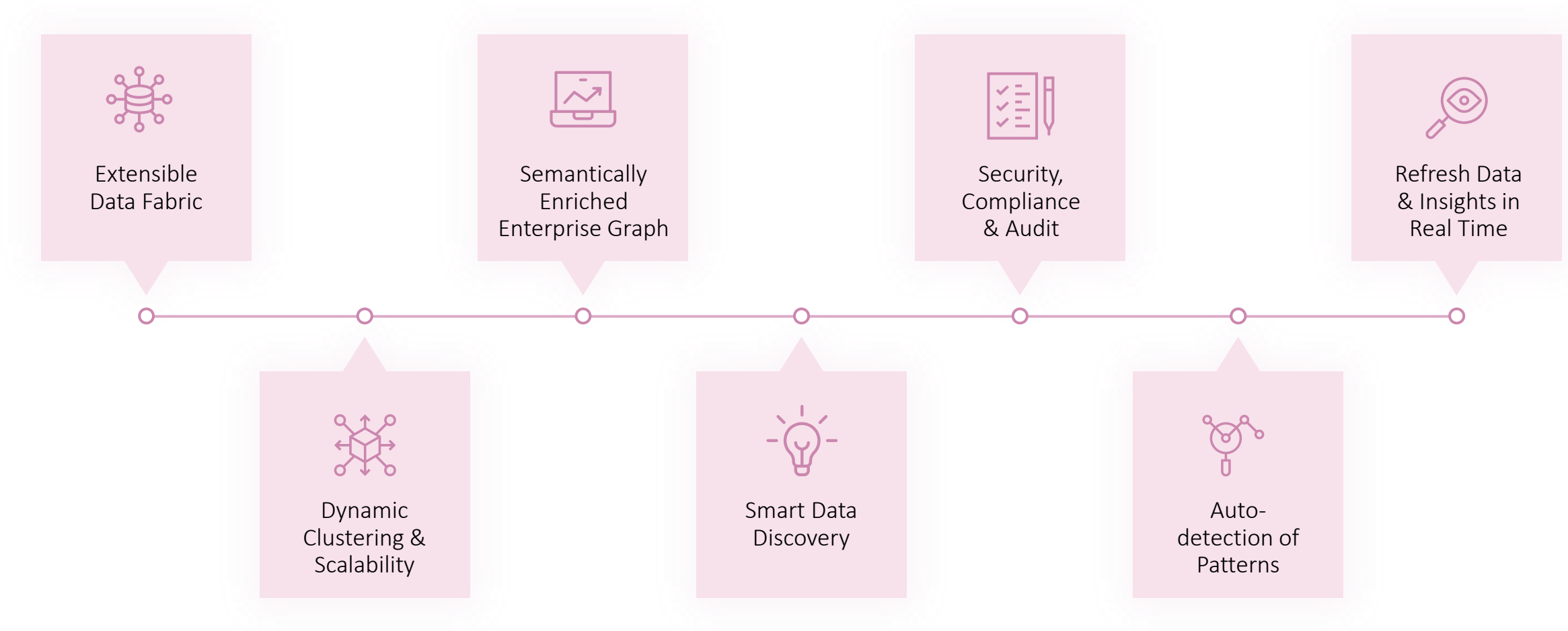
Step: 3

The ability to use this information, i.e., to activate the metadata, allows the system to:

- Suggest new data quality rules; report the availability of new metadata; detect the presence of sensitive data for privacy purposes;

- Identify the use of the same data in different business processes and use cases;

- Determine the degree of relevance, and much more.

- Create a Data Fabric or an architecture designed as a structure of interwoven services, microservices and DM components.

Use Augmented Data Quality technologies to automatize data quality controls and resolve detected anomalies based on pre-established policies and rules. Use a Data Catalog to register all the company's data assets and related entities. Advanced techniques (Artificial Intelligence/Machine Learning) allow to automatically collect and organize such metadata. Then it is easy to physically locate the data, understand their semantics and assess the quality. Besides, all parties concerned get smooth and controlled access and sharing.

Augmented Data Management

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Extensible Data Fabric

Semantically Enriched Enterprise Graph

Security, Compliance & Audit

Refresh Data & Insights in Real Time

Dynamic Clustering & Scalability

Smart Data Discovery

Auto-detection of Patterns

Automation of Augmented Data Cataloging and Lineage

In the past several years, two key trends have emerged in data management. Data warehouses moved to SaaS, and now data pipeline and ETL tools are transitioning to SaaS as well.

Data operations moving to SaaS allows for auto-generation of data cataloging and lineage as data pipelines are being built. Inputs such as data pipeline metadata and the analysis of that metadata are created on the fly and will become a completely automated
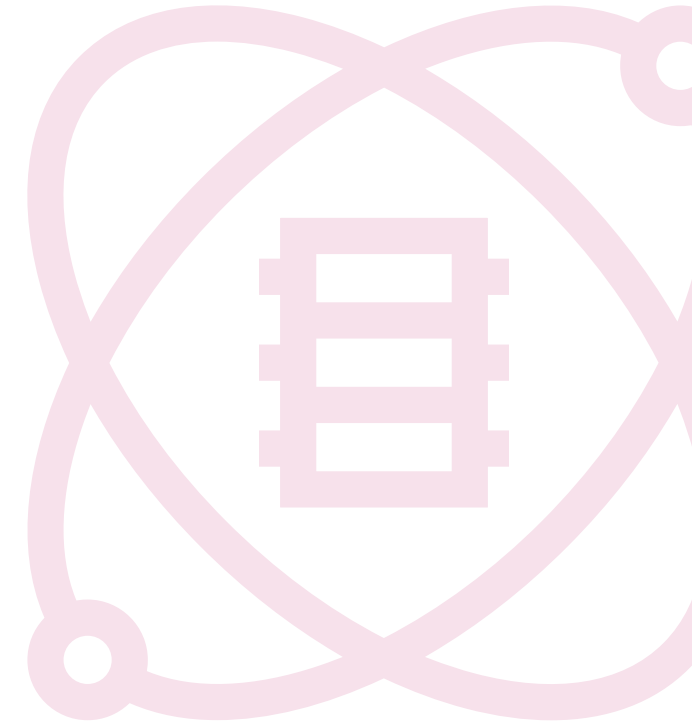
Companies that can automate augmented data cataloging and lineage will leapfrog the rest of the market. This eliminates manual work and maintenance and opens data operations to personnel who are not comfortable with managing technical infrastructure.

Automation of Augmented Data Cataloging and Lineage

SaaS APIs

DB Data

File Data

Streaming

Data Governance

ML & Automation

Data Engineers & Data Stewards

Lineage

Custom Metadata

Mastering

Quality

Profit & Classify

Collaborative Data Catalog

Self-Service Provisioning

Share, Tag, Annotate

Data Analysts & Scientists

ML & Automation

Data Governance

Enrichment

Preparation

Data Marketplace

Analytics Sandboxes

Applications

BI Tools

DataOps

▶ DataOps will reach the mainstream as data grows in volume and complexity, scaling a data operation without this holistic approach becomes much harder.

▶ DataOps applies the principles of DevOps to data management. DataOps combines agile development, technologies, processes, and practices such as statistical process control to deliver data and analytics across a company.

▶ Organizations that implement DataOps will accrue a number of benefits, including improved insights, cost reduction, higher efficiency, and most importantly for the long-term, rapid scalability.

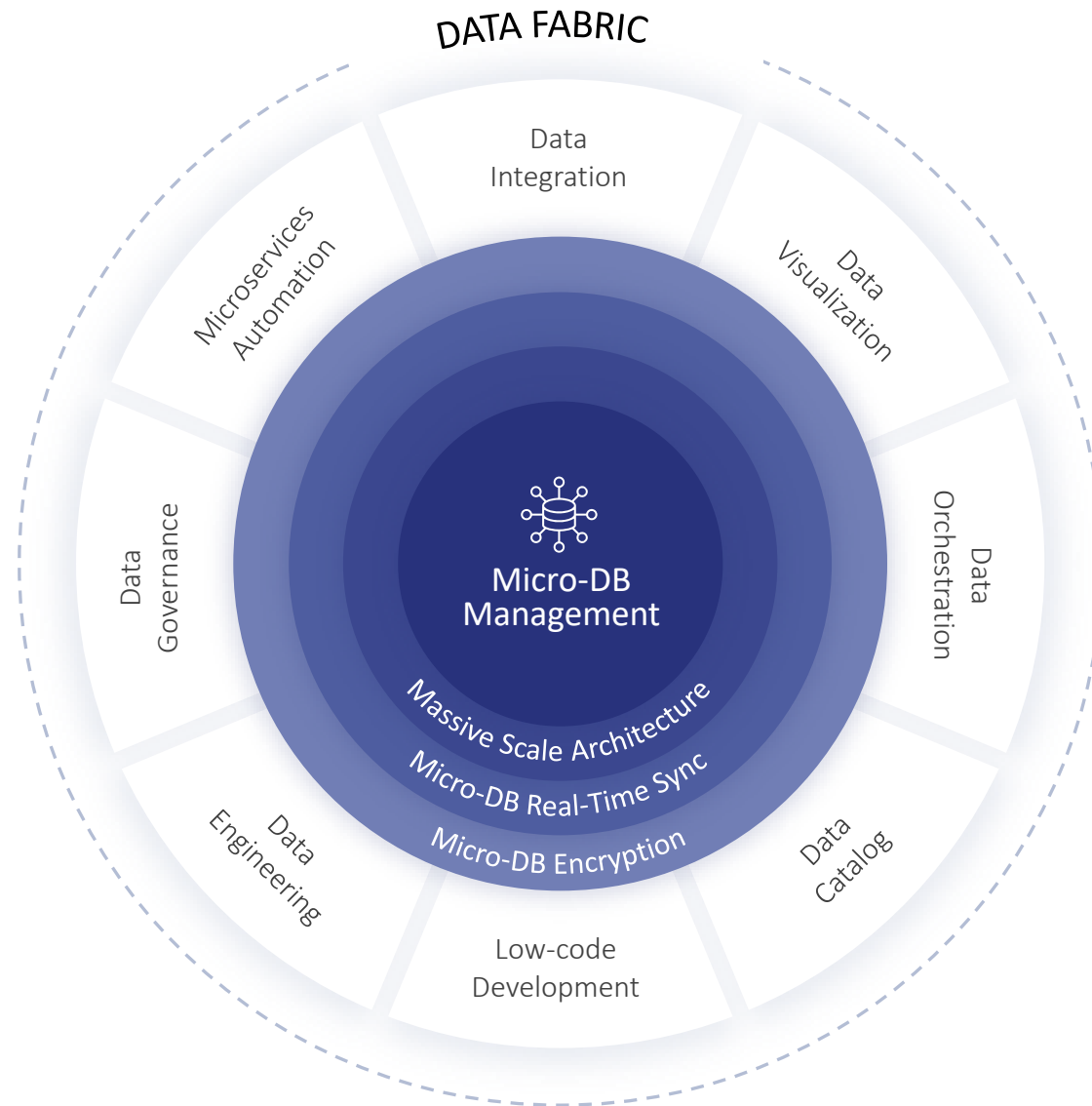▶ Implementation is agile in nature that enables to realize the benefits or ROI quickly.
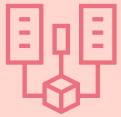
DataOps
(Data + Operations)

DataOps Best Practices

- Democratize data
- Go open source
- Automate where possible
- Communicate & collaborate
- Use end-to-end design thinking
- Balance data governance

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Data Fabric

DATA FABRIC

Data Integration

Data Visualization

Data Orchestration

Data Catalog

Low-code Development

Data Engineering

Data Governance

Microservices Automation

Micro-DB Management

Massive Scale Architecture

Micro-DB Real-Time Sync

Micro-DB Encryption

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Data Fabric

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A data fabric manages the collection, governance, integration, and sharing of data across a single unified architecture.

To construct data fabrics, companies are using capabilities such as graph technologies and semantic standards, along with solutions such as ETL, ELT, and augmented data management.

Data Fabrics will grow even more essential for companies undergoing digital transformation. As companies continue to migrate to the cloud, as data volumes and data types explode, and as data consumption turns toward on-demand channels, the need to seamlessly "weave" together data ecosystems will grow.

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