Turbo-Charge Your SAP Transformation With a Robust Data Strategy

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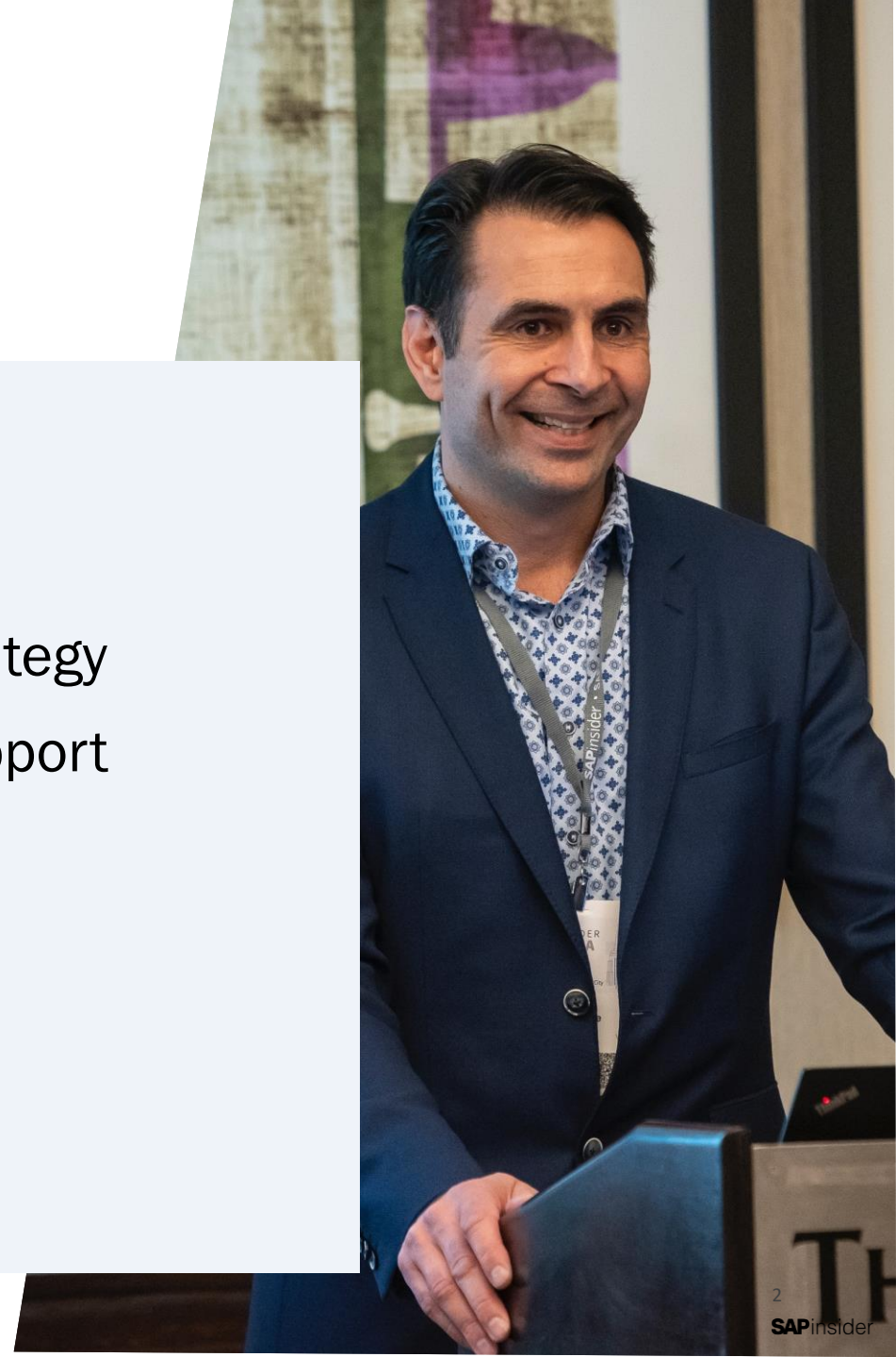2023

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What We'll Cover

o Enterprise data strategy: an introduction

o Components of a robust data strategy

o SAP tools & technologies that support your data management needs

o Lessons learned

o Wrap-up

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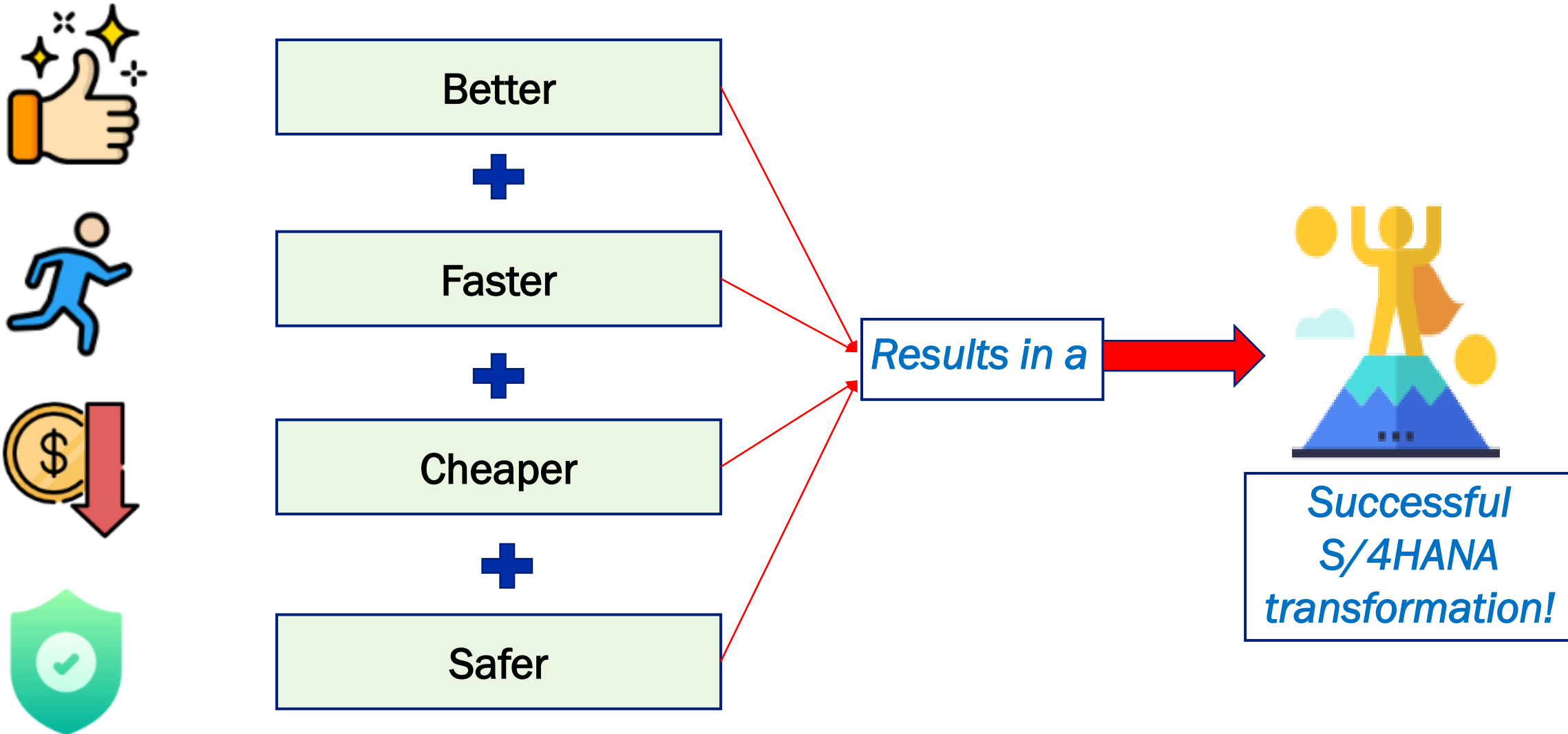
Topic 1

Enterprise data strategy: an introduction

What do we mean by a 'data strategy'?

The Data Management Association (DAMA) in its Data Management Book of Knowledge (DMBoK) define it as: *set of choices and decisions that together, chart a high-level course of action to achieve high-level goals*

Why do companies need one?

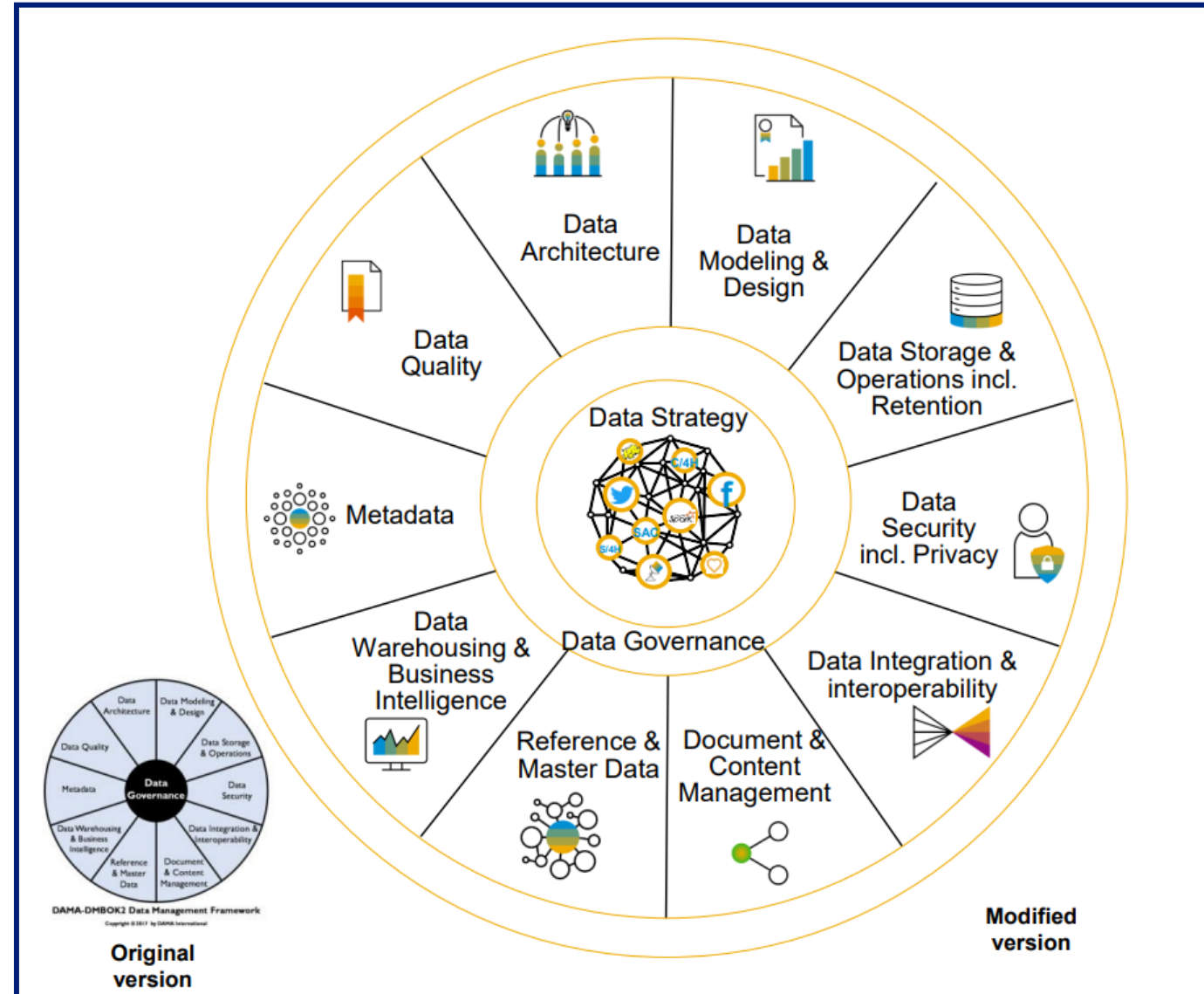- For your transformation with S/4HANA, it is an imperative for the following reasons:

Better

+

Faster

+

Cheaper

+

Safer

Results in a → Successful S/4HANA transformation!

Topic 2

Components of a robust data strategy

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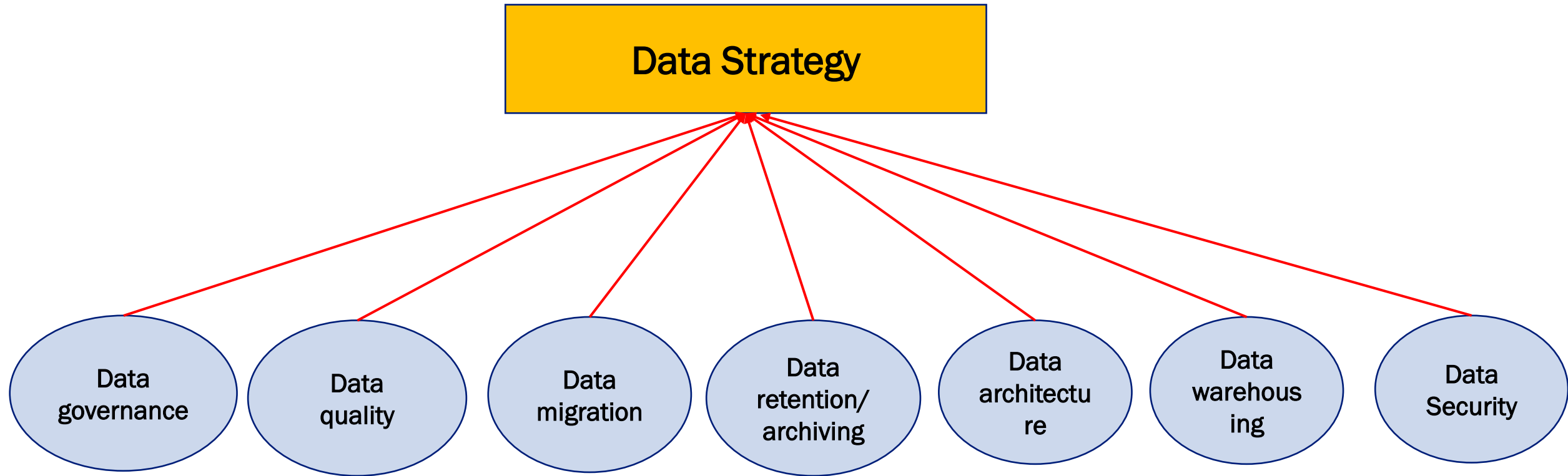# Generic view – the Data Management Framework

Why?

- ✓ Ability to do statutory, management, & ad-hoc reporting on-demand

- ✓ Analytics, planning, predictive & decision-making

- ✓ 360 degree view of all your 'business partners' including customers & suppliers

- ✓ Ensuring compliance with various laws & regulations

- ✓ Maintaining very high data quality & thus ensuring trust & reliability in the data

- ✓ Maintaining data security & integrity

How?

Data Architecture

Data Modeling & Design

Data Storage & Operations incl. Retention

Data Quality

Data Strategy

Metadata

Data Security incl. Privacy

Data Warehousing & Business Intelligence

Data Governance

Data Integration & interoperability

Reference & Master Data

Document & Content Management

DAMA-DMBOK2 Data Management Framework

Original version

Modified version

# Key components of an S/4HANA data strategy

Good (master) data governance helps companies in..

- Better decision making
  - Higher revenues and profits are directly correlated to your enterprise's ability to turn data into actionable information
- Increasing data reliability
  - Unreliable data reduces an enterprise's ability and desire to take data seriously
- Increasing user productivity
  - By reducing cost and effort incurred in entering data in multiple sources
- Ensuring your employees have access to only the data that is commensurate with their roles and responsibilities in the enterprise
  - Helps in establishing a more secure environment and, therefore, a better likelihood of passing audits

And the key to successful data governance lies in successfully governing master data

Master Data Governance
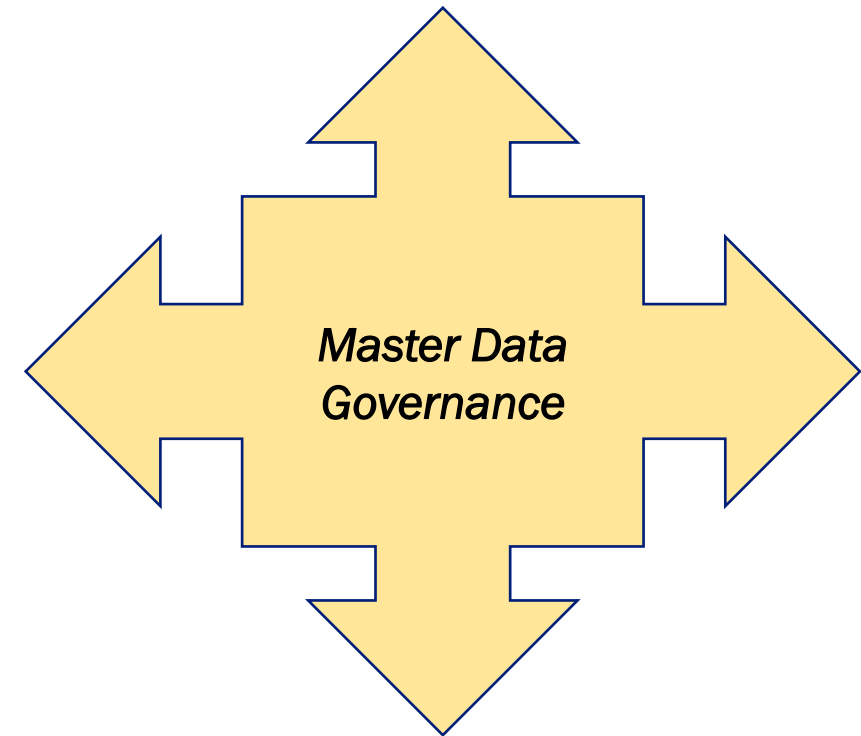
Data governance for & with S/4HANA

- As you prepare for your S/4HANA implementation, here are the things you need to understand & consider:
    - When we talk of 'data governance', we really mean 'master data governance'
    - Central governance of master data
    - Data consolidation
    - There is some overlap with data quality
    - Customer-vendor integration (CVI)

Data Quality: Why?

- Quality of your information and the kind of decisions you make are directly correlated to the quality of data that you input
  - In other words, garbage in garbage out (GIGO)

Data Quality

Data Quality Dimensions

- The importance of data quality for any company cannot be overstated
- Poor data quality has a direct impact on your top & bottom lines
- The world's best run companies do a much better job of maintaining high data quality than others
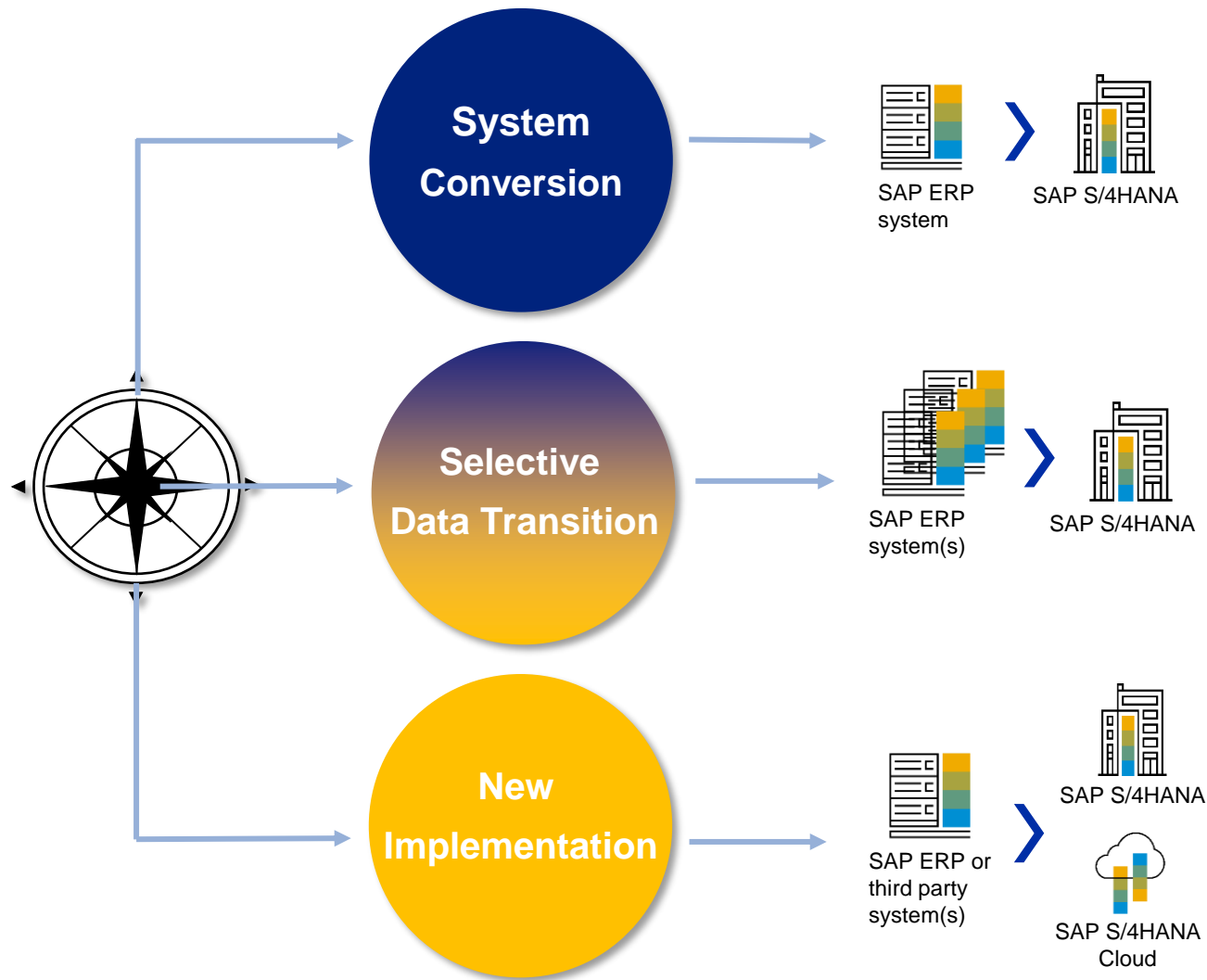
Completeness

Accuracy

Timeliness

Validity

Consistency

Uniqueness

Data Migration approaches

System Conversion

SAP ERP system → SAP S/4HANA

Bring your business processes to the new platform
- A complete technical in-place conversion of an existing SAP ERP system to SAP S/4HANA
- Adopt new innovations at your speed
→ Delivery model: included in SAP S/4HANA shipment

Selective Data Transition

SAP ERP system(s) → SAP S/4HANA

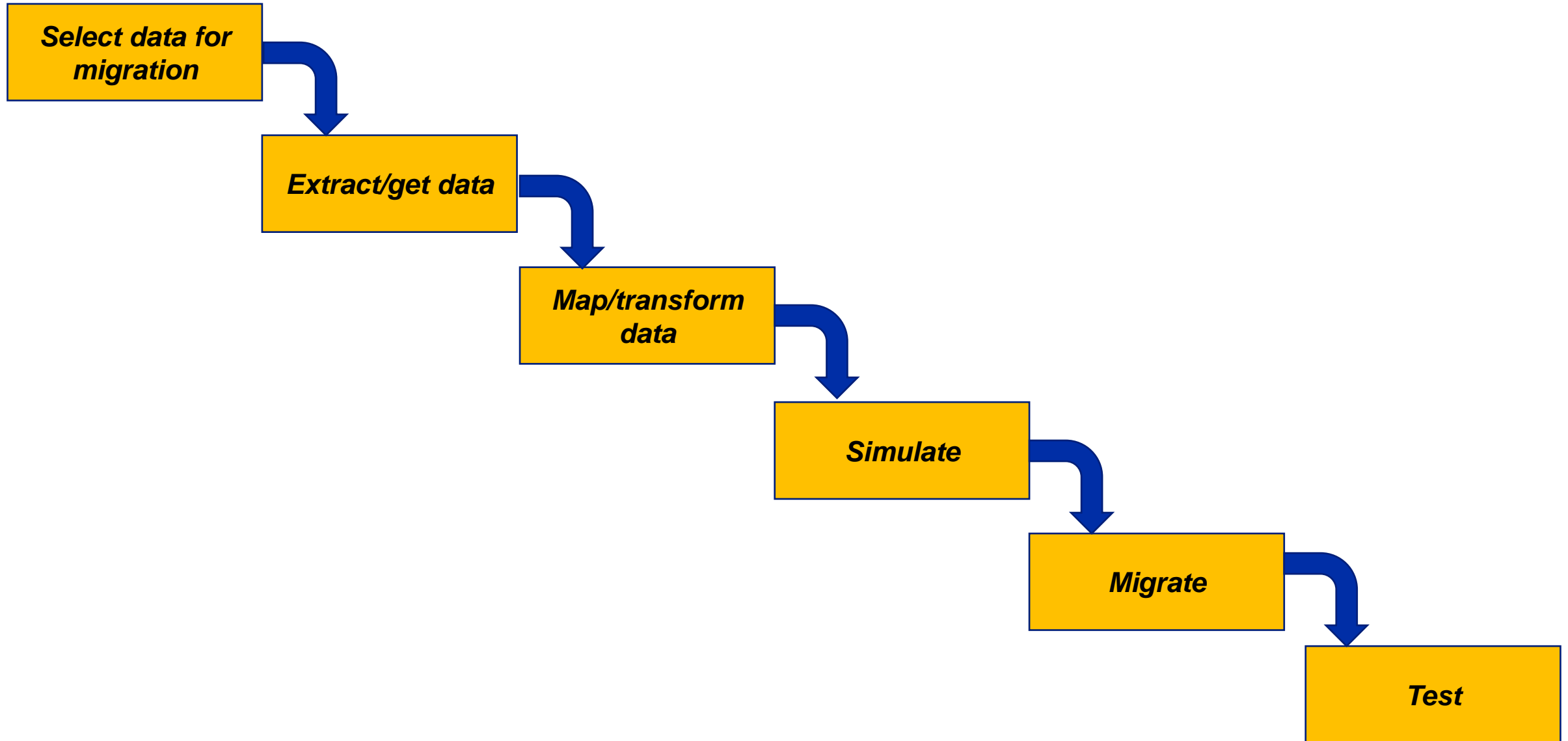**Partly re-use, partly re-implementation**
- Covers the migration of relevant business data from SAP ERP to SAP S/4HANA
- Allows to combine redesign of business processes with retaining historical data
- Realized by a combination of standard functions used for a new implementation or system conversion together with complementing expert functions which are not released to general availability
→ Delivery model: as a service / consulting project

New Implementation

SAP ERP or third party system(s) → SAP S/4HANA / SAP S/4HANA Cloud

New implementation / re-implementation
- Reengineering and process simplification based on latest innovations
- Highly standardized, fueled with best practices & based on a clean core
- Implement innovative business processes with preconfigured best practice content on an innovative platform
- Migrate your master data & retire old landscape
→ Delivery model: included in SAP S/4HANA shipment

Data Migration strategy

Select data for migration

Extract/get data

Map/transform data

Simulate

Migrate

Test

Data Retention/Archiving - Overview

A sound data retention/archiving will put you firmly in the driver's seat not only during your data migration to S/4HANA but in ensuring good S/4HANA data management

Ask yourself the following questions before you devise your archiving strategy:

➢ *Are the data still needed?*
➢ *Are there any legal considerations or requirements to retain the data in your primary transactional system (S/4HANA)?*
➢ *How many years of data do you truly need in your S/4HANA system to successfully transact business?*
➢ *What are the cost implications of doing a wholescale 'lift-and-shift"?*
➢ *How seamless will it be to access offline/archived data from your S/4HANA system?*

Data Retention/Archiving - Benefits

Reduced data footprint

Cost reduction – storage & licenses
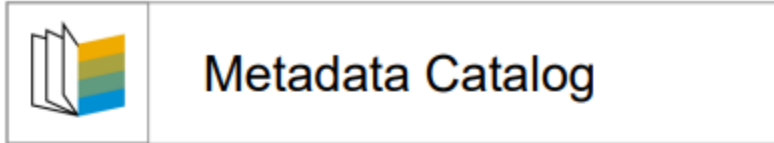
Faster data migration

Reducing complexity

Better system performance

Data Architecture – what & why?

WHAT

Wikipedia: Data architecture consist of models, policies, rules, and standards that govern which data is collected and how it is stored, arranged, integrated, and put to use in data systems and in organizations.

WHY

- ✓ Is a foundation for good data governance and data quality

- ✓ Supports data integration

- ✓ Supports superior data acquisition

- ✓ Leads to more efficient data storage

Data Architecture – Key Components

|		
Metadata Catalog	**Data Process Matrix**	**Data Distribution Diagram**

Metadata Catalog

Listed representation describing the (master) data entities within the architecture, i.e. data describing data (entities).

- The objective of the Catalog is to ensure that all data is coherently and consistently defined, so it can be managed and governed, with clear ownership by the business.

Data Process Matrix
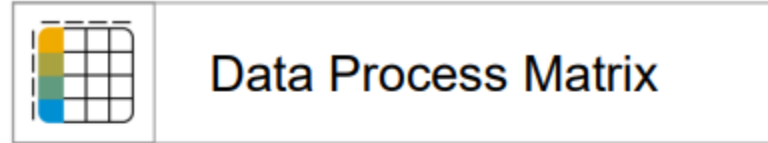
Matrix representation of (Master) data entities cross referenced to business process entities.

- The objective is to have a clear overview which (master) data entities are processed per business process to be able to assess (master) data impacts in business process changes.

Data Distribution Diagram
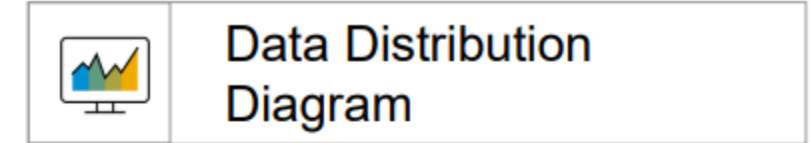
Graphical Representation of data entities, and the relationships between the data entities and applications.

- The Data Distribution Diagram shows the Data Lifecycle (where data is created, read, updated and deleted) and highlights data duplication and redundancy.
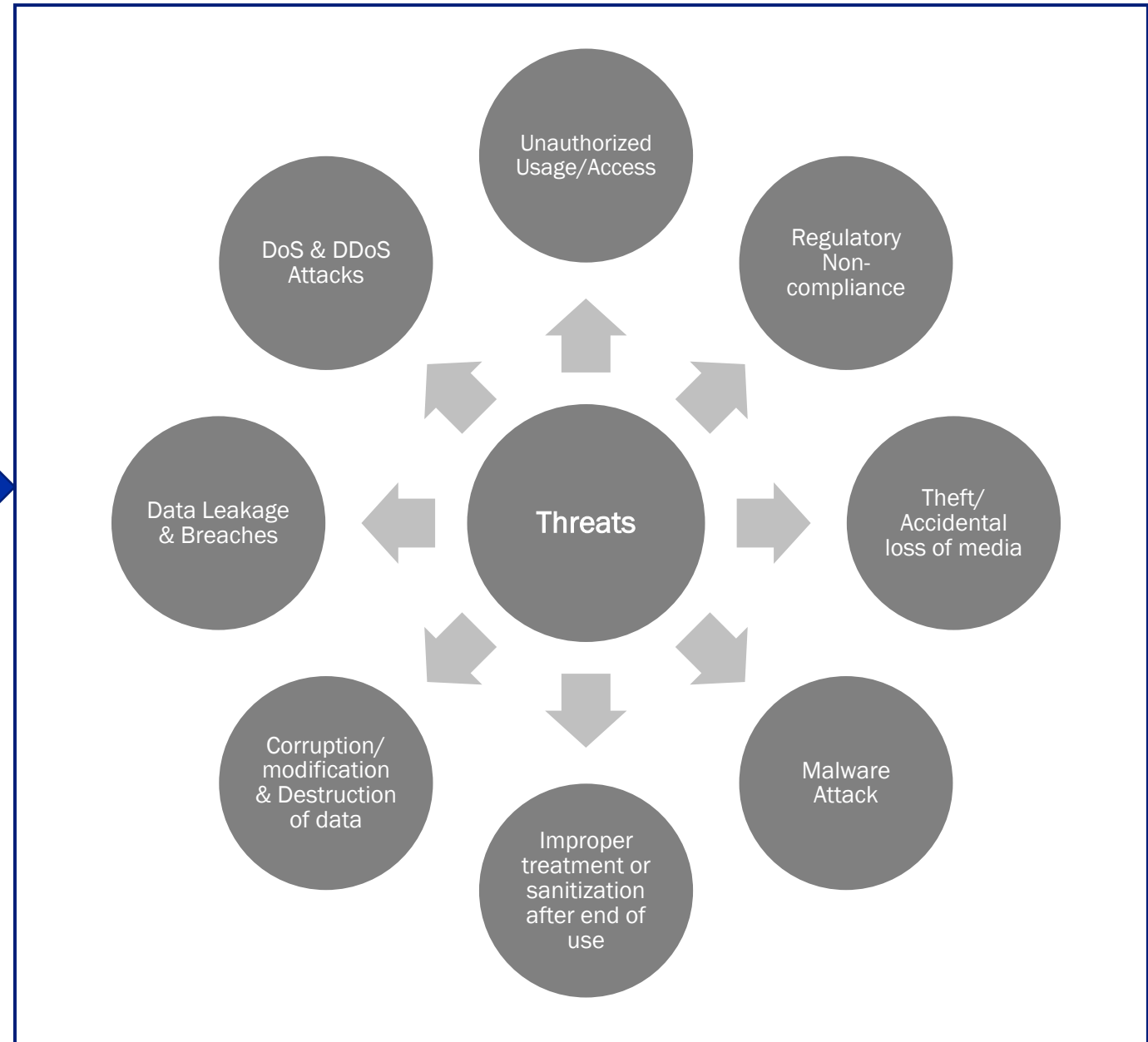
Data Warehousing - Importance

✓ Maintain vast volumes of historical data

✓ High & consistent data quality

✓ Single repository of the truth

✓ Timeliness of access to data – can be real-time

✓ Analytics & decision-making support

✓ Strong data security by regulating access based on user roles & responsibilities

Data warehouse
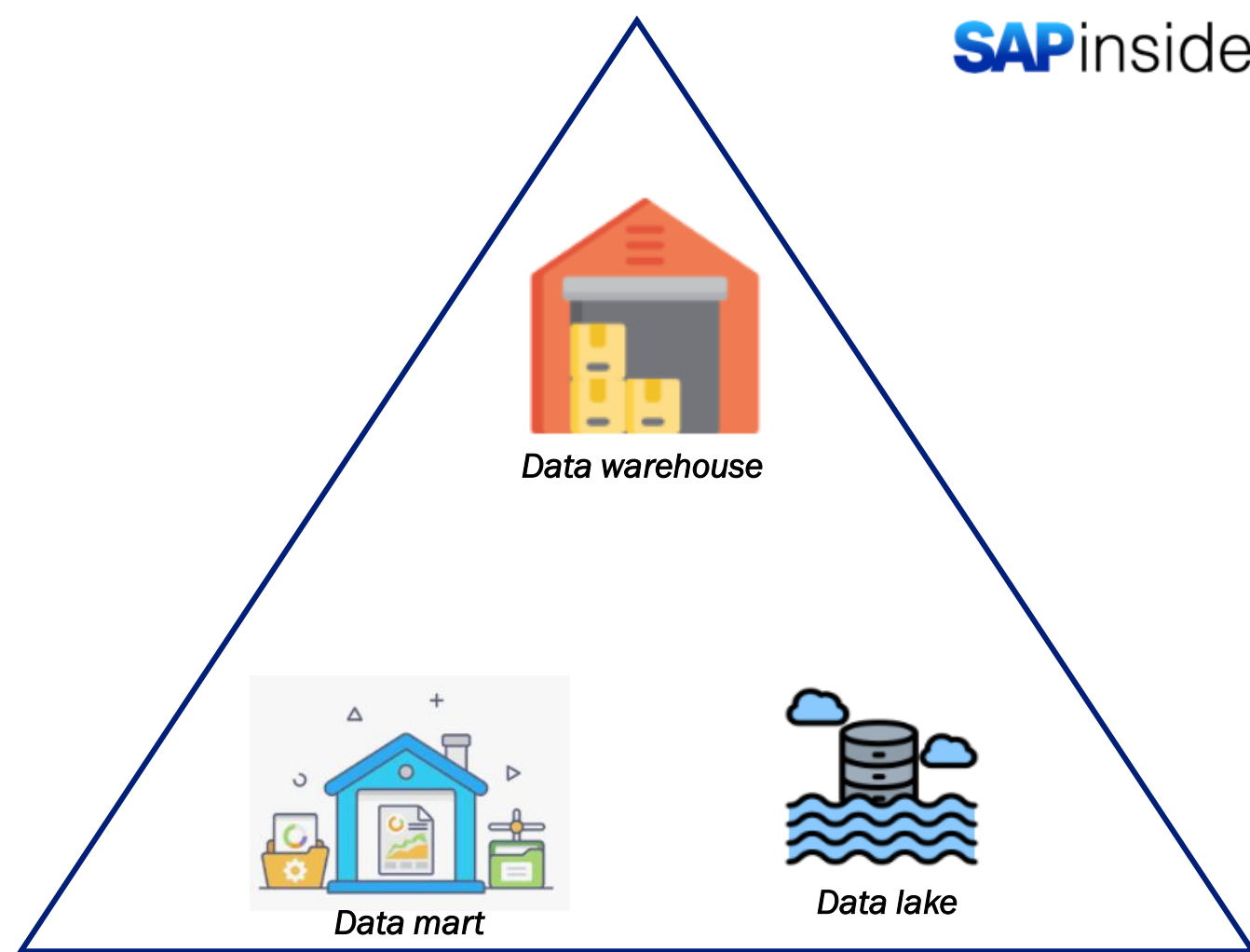
Data mart

Data lake

Note: Data marts & data lakes are concepts related to data warehousing; each of these has its strengths & weaknesses <u>*but a data mart and/or a data lake cannot substitute for a data warehouse*</u>.

Data Security – An imperative

As companies increasingly are migrating their applications & data to the cloud, the threats to data security are greater than ever before

Threats

- Unauthorized Usage/Access
- Regulatory Non-compliance
- DoS & DDoS Attacks
- Theft/ Accidental loss of media
- Data Leakage & Breaches
- Malware Attack
- Corruption/ modification & Destruction of data
- Improper treatment or sanitization after end of use

Data Security – Even the biggest are vulnerable

To name a few......

➢ The LinkedIn data breach of April 2021 exposed 700 million + user records
➢ The Marriott International data breach of September 2018 impacted 500 million guests
➢ The Equifax data breach of September 2017 affected 163 million people worldwide including 148 million Americans
➢ The CapitalOne Bank data breach of July 19 compromised 100 million account holder records
➢ The password breach at Zynga in September 2019 affected over 200 million users
➢ Microsoft Corp. was subject to a massive cyber-attack in Jan 2021 that affected 30,000 user businesses
➢ A data breach in April 2021 left 530 million users of Meta (then Facebook) exposed
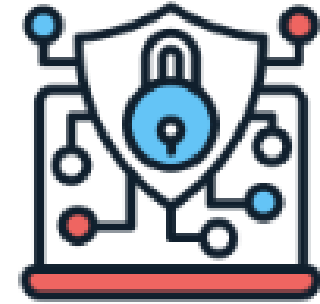
As the world's #1 cloud applications vendor, data security is of paramount importance to us!

Topic 3

SAP tools & technologies that support your data management needs

SAP Master Data Governance (MDG)

SAP MDG helps customers establish a cohesive and harmonized master data management strategy across your domains to simplify enterprise data management, increase data accuracy, and reduce total cost of ownership

	SAP Master Data Governance on SAP S/4HANA (Private Cloud Edition or on premise)	SAP Master Data Governance, cloud edition
Architectural base	SAP S/4HANA based	SAP Business Technology Platform based (ABAP Environment)
Data domains	Business Partner (customer and supplier), Material, Financials, EAM*, RFM* (Retail Article), Custom Objects	Business Partner (customer and supplier), more to come
Data Model	Based on SAP S/4HANA data model (broad attribute coverage)	Based on One Domain Model (core attributes only)
Key Capabilities	Consolidation, Central Governance, Data Quality Management	Consolidation, Central Governance, Data Quality Management
Replication	Data Replication Framework	SAP Master Data Integration (MDI) service
Deployment	On premise or private cloud	Public cloud
Key objective	Fully fledged, central and enterprise wide master data management (multi-domain)	Easy start with low entry barriers Modular MDM approach (federation as a complementary deployment option)

SAP Master Data Governance, Data Quality Management

Process flow

Define Quality

Requirements are defined based on your company's business processes

Priorities are set according to value, impact, and quality evolution

► Experts collaborate to define needed quality level and required checks

► The system helps to identify additional meaningful rules

Enter Quality

Ensure quality at point of entry

Consider all entry-points: single changes, mass changes, load scenarios, in daily business, projects, …

► Rule-based checks in all processes of SAP MDG

► Automation with derivations

Monitor Quality

Operational motivation: detect issues before processes fail

Tactical: ensure progress and performance of current activities

Strategic: enable achievements, define new initiatives
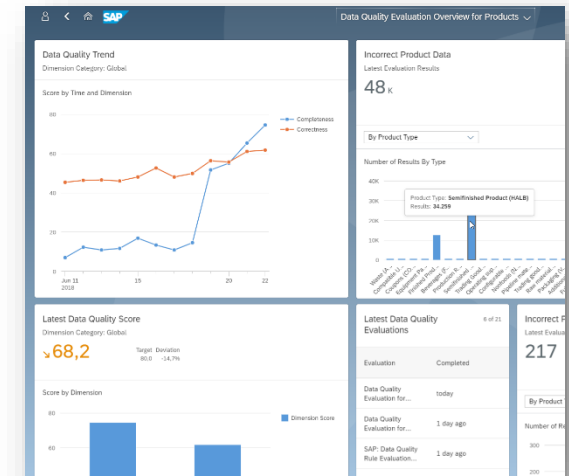
► Easy to consume monitoring and trend reporting
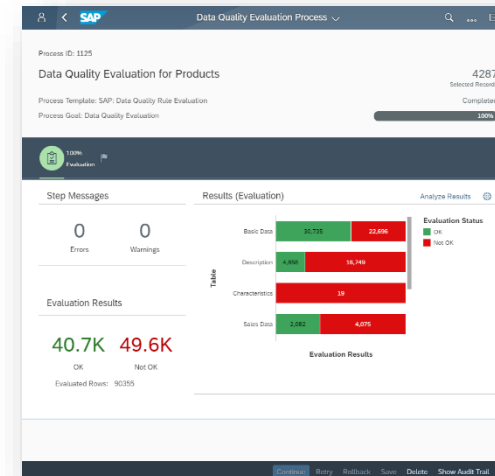
Improve Quality

Correct data and drive the correction process

Fix data entry processes

Evolve the definition of quality

► Tools to fix data and to improve checks at point of entry
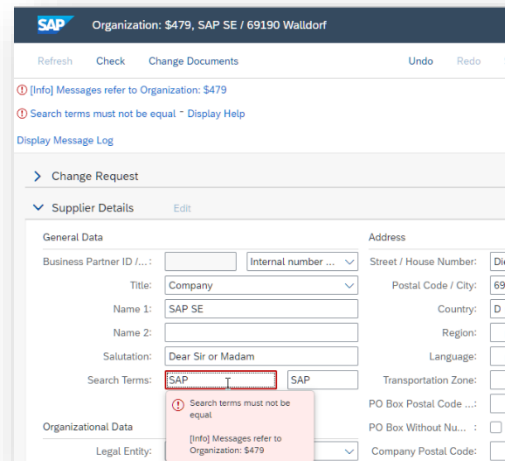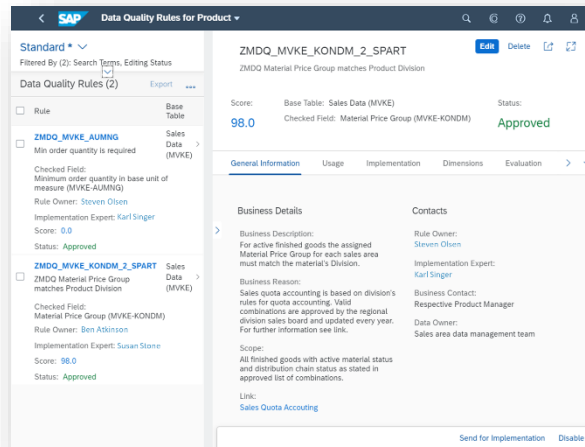
SAP Data Migration tools

```
Simple scenarios  ──────►  SAP S/4HANA Data
                           Migration Cockpit  ──────►  Staging tables
                                                        approach

                                              ──────►  Direct data
                                                        transfer approach

                   ──────►  Rapid Data Migration
                            with SAP Data Services


Complex scenarios ──────►  SAP Advanced Data
                           Migration by Syniti
```

Syniti ADM use cases
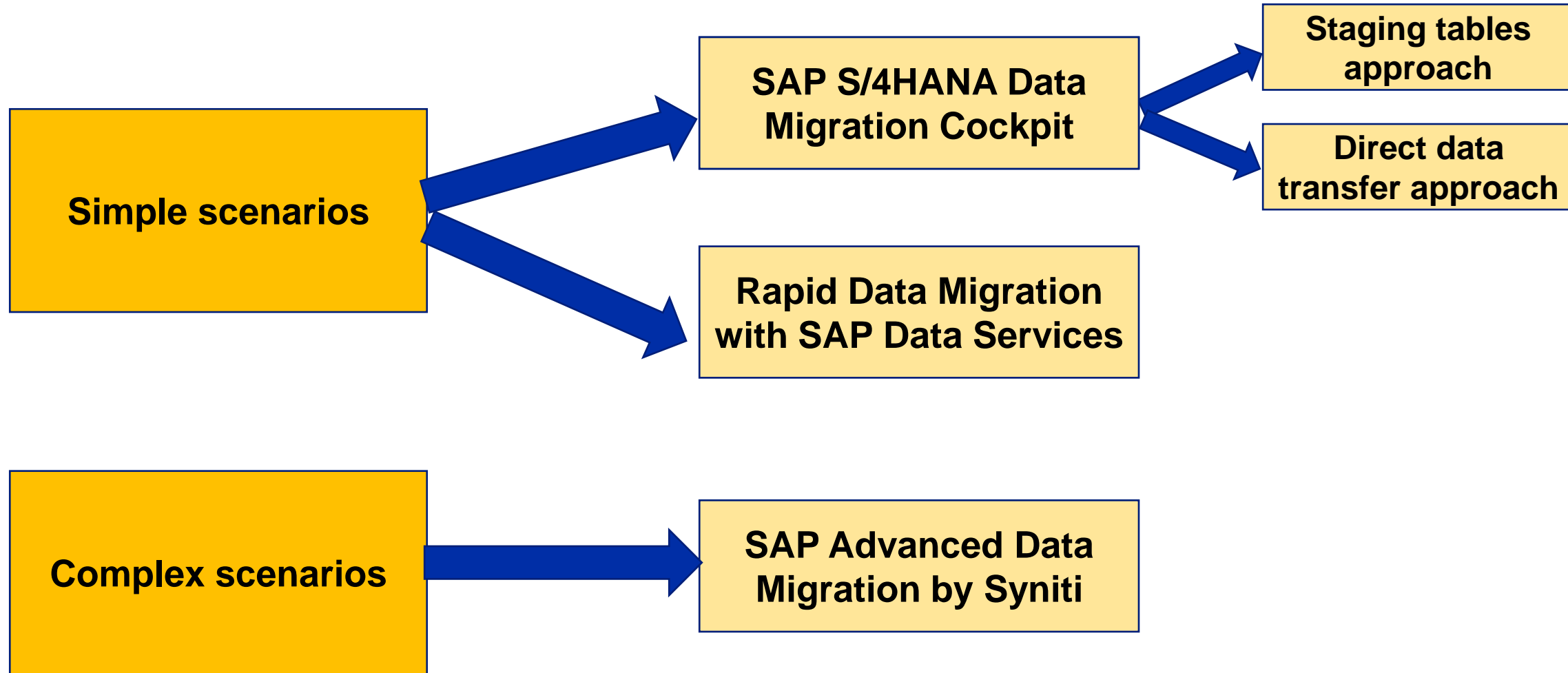
Sample Scenarios

New Systems
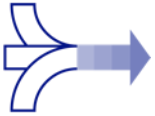
Mergers & Acquisitions

Move to Cloud

SAP & Non-SAP

SAP Advanced Data Migration

- Central migration report creation and distribution

- Collaborative, web-based, legacy-to-SAP mapping

- Project execution and metrics-based tracking

- Reuse-driven central design and decision capture

Benefits

Centralized Reporting

On-time, On-budget Go-Lives

Trusted Data

Eliminate Risk of Non-Compliance

Data Archiving & Retention

> *SAP Information Lifecycle Management (ILM) is a versatile application that meets your data archiving & retention needs & then some!*

What it does

SAP ILM helps customers streamline your IT infrastructure and protect the privacy rights of their consumer data, automate data archiving & retention, decommission legacy systems, while balancing the total cost of ownership, risk, and legal compliance

How you benefit

- ✓ Lower cost & complexity of your IT landscape
- ✓ Control your data volumes & manage your risks
- ✓ Improve compliance with legal requirements
- ✓ Get access to a wealth of data at a reduced cost

SAP Datasphere – from Data Warehouse Cloud (DWC) to a Data Fabric

			NEW	NEW	NEW
Data warehousing and data federation	Business content	Data marketplace	Semantic modeling: analytic models	Data catalog, quality, and orchestration	Application and data integration

Capabilities of DWC have been assimilated into Datasphere;
Datasphere is the new generation of DWC

DAMA Areas supported

✓ Data warehousing
✓ Data governance
✓ Data discovery

SAP press release from March 8, 2023 announcing general availability of SAP Datasphere

SAP Data Intelligence

An application that enables you to leverage enterprise applications to become an intelligent enterprise and provides a unified way to manage, integrate, and process all your company's data. Comes as an on-prem offering (aka Data Intelligence) and a SaaS offering (aka Data Intelligence Cloud)

Data Integration

Connect and **integrate everything,** structured, unstructured or streaming

Amazon Redshift · Google Cloud Platform · amazon web services S3 · hadoop · Microsoft Azure · SAP

Data Processing

Extract meaning from data, orchestrating any mix of engines

python · R · TensorFlow · GO · Apache Spark · node JS · JavaScript · SAP
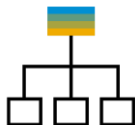
Data Catalog

Discover, classify, profile, understand and **prepare** all your enterprise data assets

Top use cases for Data Intelligence

Integrate SAP apps → Unique out-of-the-box integration with SAP enterprise applications
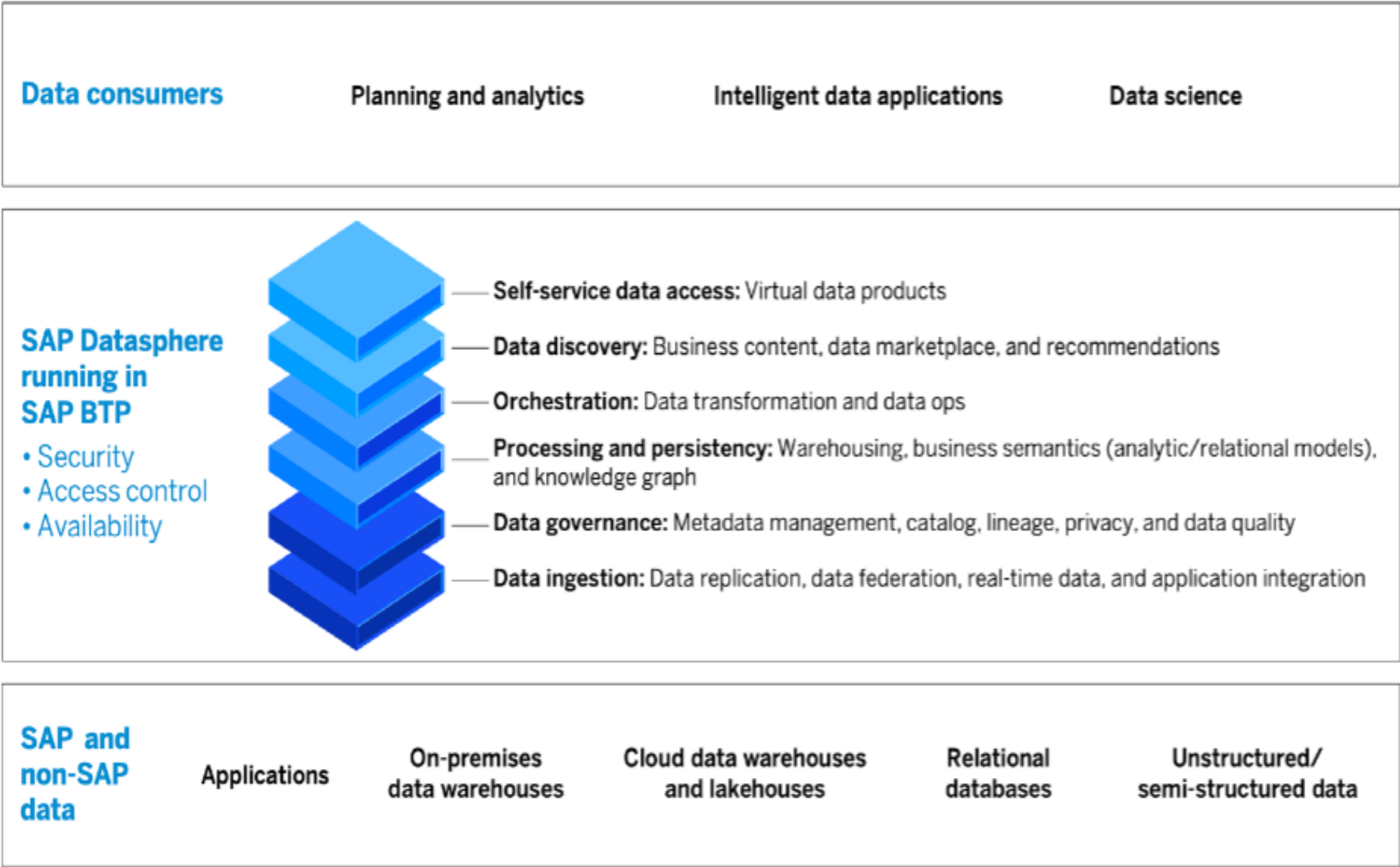
Reuse SAP tools → Unique out-of-the-box reuse of any existing Data Services, SLT, Information Steward, HANA on prem, BW etc.

Integrate any 3rd party → Open, multi-cloud and containerized technology, with out-of-the-box integration to any 3rd party database or data lake and orchestration of any 3rd party processing engine.

SAP Datasphere building blocks & architecture

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Data consumers
    Planning and analytics   Intelligent data applications   Data science

SAP Datasphere running in SAP BTP
- Security
- Access control
- Availability

Self-service data access: Virtual data products

Data discovery: Business content, data marketplace, and recommendations

Orchestration: Data transformation and data ops

Processing and persistency: Warehousing, business semantics (analytic/relational models), and knowledge graph

Data governance: Metadata management, catalog, lineage, privacy, and data quality

Data ingestion: Data replication, data federation, real-time data, and application integration

SAP and non-SAP data
    Applications   On-premises data warehouses   Cloud data warehouses and lakehouses   Relational databases   Unstructured/ semi-structured data

Data Security & Privacy

- We monitor the global regulatory landscape to implement safeguards to protect the fundamental rights of anyone whose data is processed by SAP, including customers, suppliers, partners, prospects, employees, and applicant. As such, **security & privacy are embedded in all our application.**

- As an example, with SAP HANA provides as default multiple security features such as:
  - Access control
  - Access logging
  - Availability control
  - Authentication & single sign-on
  - Audit trail

Learn all about our data security & privacy framework at https://www.sap.com/about/trust-center/data-privacy.html

Data Security & Privacy solutions

As companies continue to rapidly move operations & data to the cloud, ensuring cybersecurity for our customers is an imperative for SAP. Our solutions for cybersecurity naturally cover both data security & privacy

UI Masking & Logging
- ✓ Protect sensitive information in the UI layer
- ✓ Block or log data access
- ✓ Secure & refine access

SAP Code Vulnerability Analyzer
- ✓ Identify & remedy security vulnerabilities in ABAP custom code

SAP Focused Run
- ✓ Security Configuration Management, SAP S/4HANA, SAP HANA, SAP NetWeaver & J2EE
- ✓ Patch Management

SAP Enterprise Threat Detection & SAP Enterprise Threat Detection Cloud Edition
- ✓ SIEM solution tailored to the needs of SAP applications
- ✓ Effectively identify and analyze threats in SAP applications

SAP Data Custodian
- ✓ Key management
- ✓ Create, enforce, monitor & report on data access, storage, movement, processing, location

Topic 4

Lessons Learned

Plan early

✓ Always remember that without good data in your system, your S/4HANA implementation will run into challenges eventually

✓ It is never too early to formulate your data strategy → do not take the 'better late than never approach'

A data strategy – an imperative

- ✓ Do not take a scattershot approach to data management
- ✓ Formulate a data strategy that works for your enterprise
- ✓ Not all components are equally important or relevant
- ✓ You will not get your strategy right with your first go – it will evolve over time
- ✓ Ensure you have socialized and obtained buy-in from the key business stakeholders

A data strategy – an imperative

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Become a data-driven enterprise

✓ Strive to enshrine in your transformation charter the goal to become a data-driven enterprise
✓ Champion the benefits of becoming a data-driven enterprise
✓ Demonstrate the benefits of a data-driven approach especially for analytics, decision-making etc.
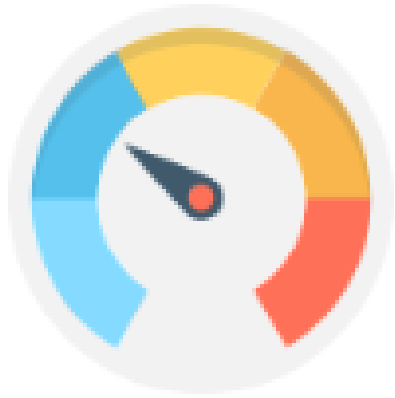
Measure & monitor

✓ Establish KPIs/metrics to measure the success of your data initiatives – do not let your strategy remain at the conceptual level

✓ Monitor & analyze these on a regular basis

✓ Take appropriate measures to address non-compliance & discrepancies

Pick appropriate tools/applications

✓ SAP provides a gamut of tools & applications that meet your data needs

✓ There could be some overlaps in their capabilities that could cause confusion

✓ Make sure both decision-makers & users are familiar with their features so that you make the correct choices

✓ Take advantage of the free trial versions for a lot of these applications to get a rapid understanding

Where to Find More Information

https://www.dama.org/cpages/home
- Link to the global data management community at DAMA

https://www.sap.com/products/technology-platform/datasphere.html
- Learn all about SAP Datasphere

https://www.sap.com/products/technology-platform/master-data-governance.html
- Learn all about SAP Master Data Governance

https://www.sap.com/about/trust-center.html
- Find all the information you need on security, compliance, privacy, and cloud service performance

https://www.sap.com/products/technology-platform/data-intelligence.html
- Learn all about SAP Data Intelligence

https://blogs.sap.com/2021/03/10/part-1-migrate-your-data-migration-cockpit-from-sap-s-4hana-2020-sap-s-4hana-cloud-2008-migrate-data-using-staging-tables-and-methods-for-populating-the-staging-tables-with-data/
- Detailed blog on data migration using the S/4HANA Data Migration Cockpit

https://www.sap.com/products/technology-platform/advanced-data-migration-software.html
- Learn all about Advanced Data Migration and Management by Syniti

Key Points to Take Home

- Data is one of the most important assets that any company has

- To ensure that your data is being appropriately utilized, your company must have a robust data strategy in place

- A robust data strategy is a key ingredient for success with an S/4HANA implementation/transformation/deployment

- Many components make up a data strategy including but not limited to data governance, quality, architecture, migration, security etc.

- SAP provides a gamut of tools & applications for customers to be successful not only with their data initiatives but also throughout their entire S/4HANA transformation journey

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Thank you! Any Questions?

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Please remember to complete
your session evaluation.

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