

Leveraging Data Analytics to Accelerate the OODA Loop for Enhanced Mission Outcomes

DISA Technical Exchange Meeting (TEM)

Hitachi Vantara Federal

October 16th 2024

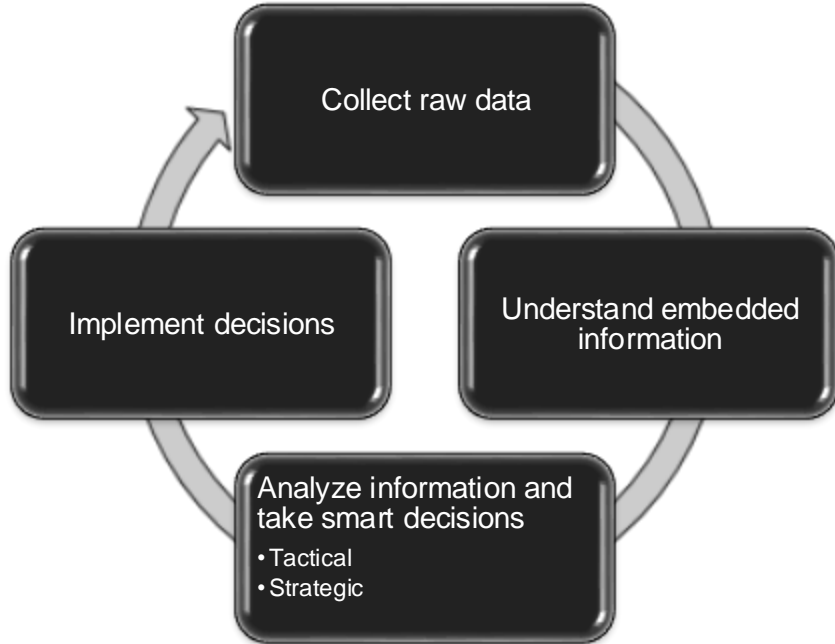
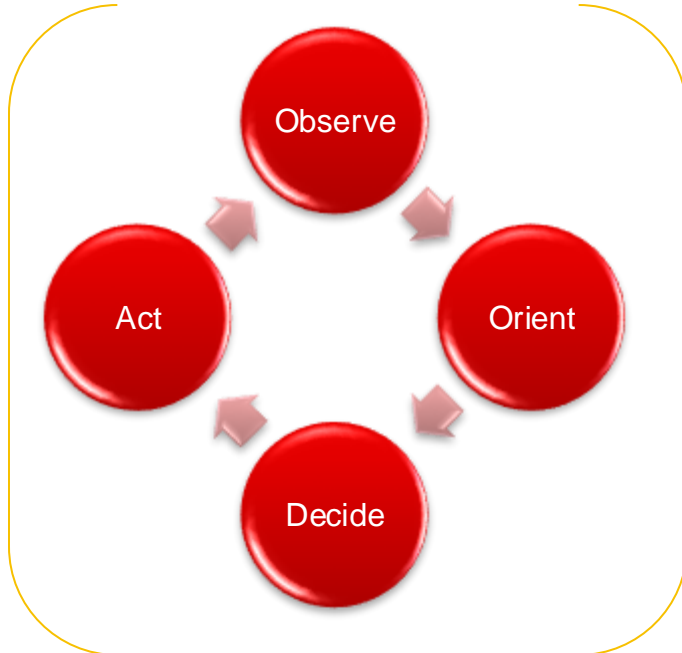


Abstract

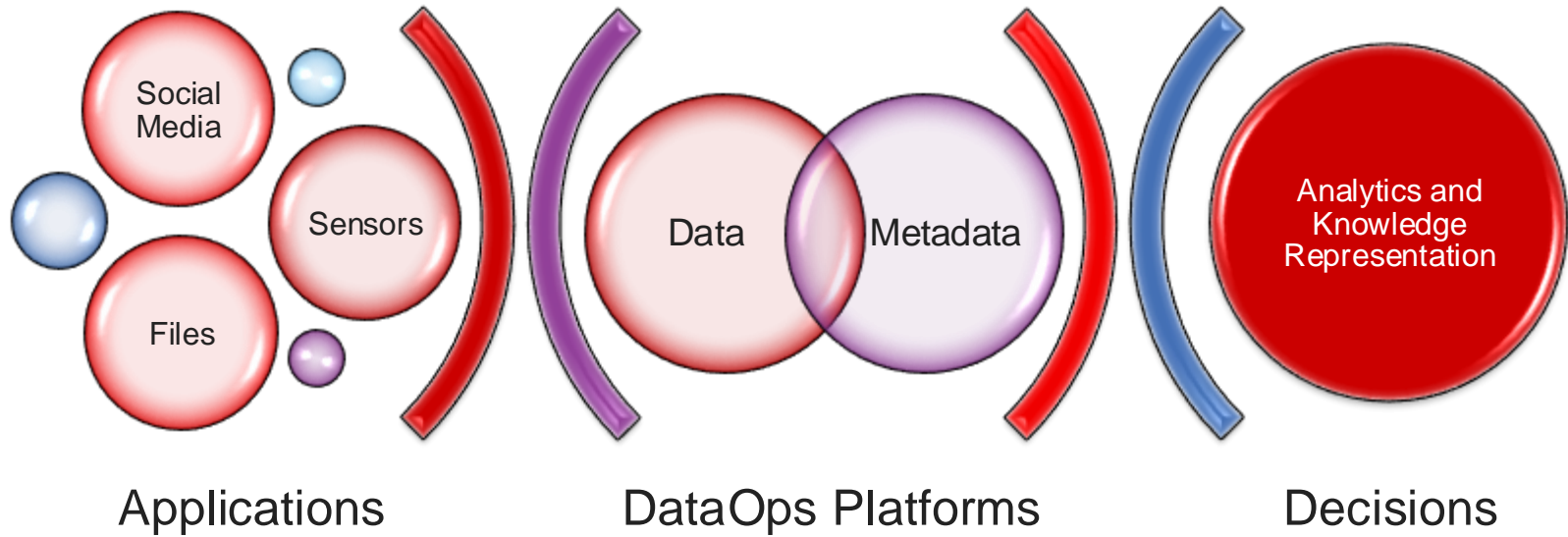
In the ever-evolving landscape of modern warfare and security challenges, the ability to effectively observe, orient, decide, and act (OODA loop) is paramount for mission success. This abstract explores how harnessing data analytics, including Generative AI, can accelerate the OODA loop and enable organizations to align, adapt, and accelerate mission outcomes against adversaries. By integrating advanced data analytics techniques such as machine learning, predictive modeling, and real-time data processing, organizations can enhance their situational awareness, rapidly assess threats, and make informed decisions in dynamic environments. Moreover, leveraging data analytics enables proactive adaptation to changing circumstances, ensuring agility and resilience in the face of evolving threats.

This talk will cover the tangible benefits of incorporating data analytics into the decision-making processes of defense and security organizations such as DISA, ultimately leading to more effective mission execution and a competitive edge against adversaries.

OODA Loop

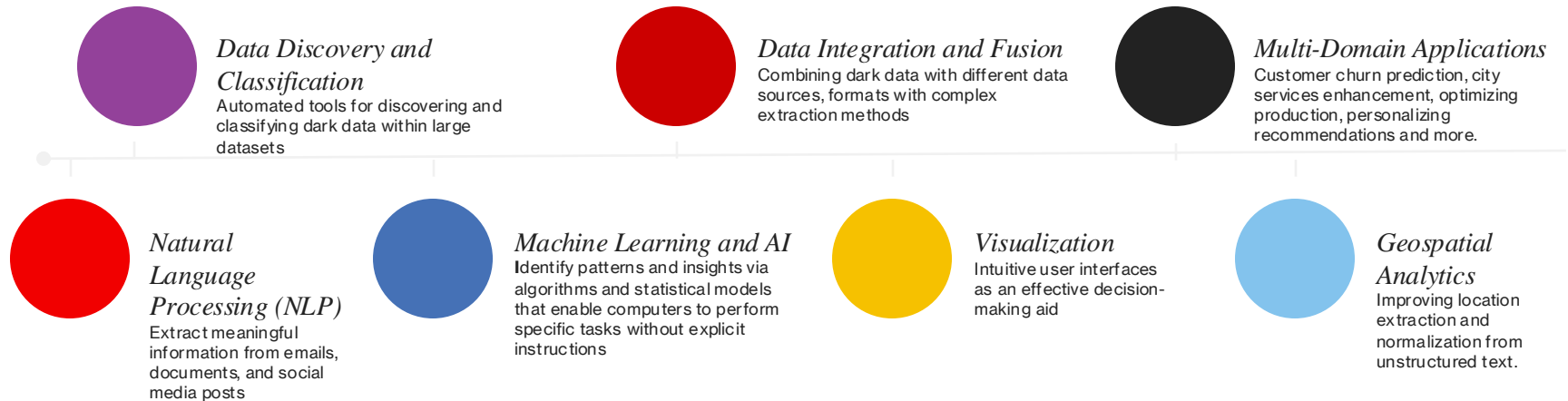


Data-Driven Decision Intelligence



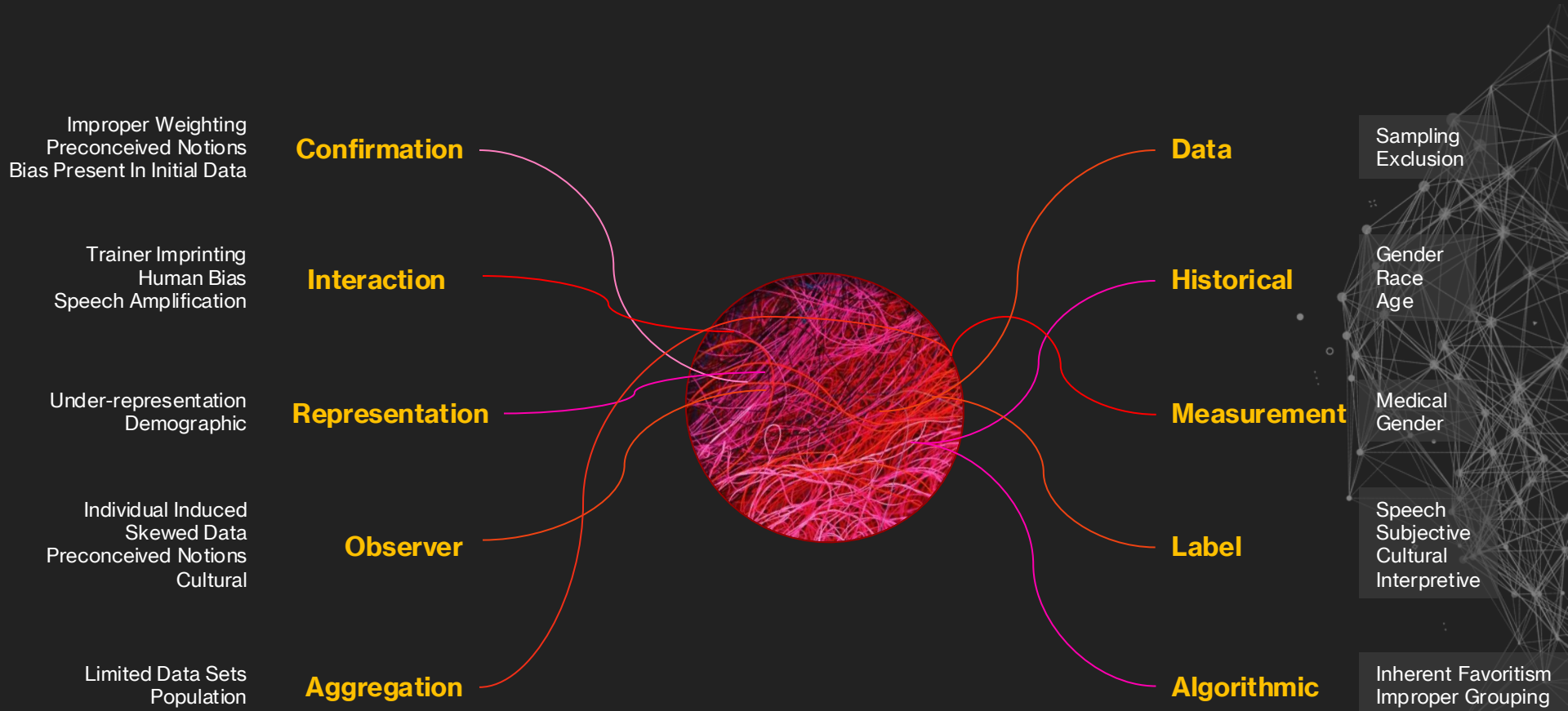
Challenge: Dark Data

"Dark data" refers to data that organizations collect, process, and store but do not use for any meaningful purpose. It often includes unstructured data that is difficult to analyze with traditional tools.



Practical Applications: Using dark data from electronic health records (EHRs) to improve patient outcomes and streamline operations / Using social media and other publicly accessible data for operational strategies / Do more with more

Challenge : Bias Creep



We're Pentaho. We're stronger than ever.

HITACHI
Inspire the Next

We've been in the game for 18 years. Long enough to recognize real data-fitness: hard-won, hard-earned and rock solid. Long enough to have honed our technologies and strengthened our solutions to handle the challenges ahead.



PRE-APPROVED DOD SOLUTION

Directly Awardable through CDAO's Tradewinds Solutions Marketplace. CDAO approved Federal competition requirements (FAR/DFARS)

Data is our DNA.

18+

years of excellence



120+

IP / Patents



74%

of Fortune 100 companies



40

of the top 44 Global Banks



Part of the
Hitachi Family

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Pentaho+ Data Platform | Data Driven for Business Outcomes

Fully functional (ingest, transform, process, store, enrich, search, access & analyze) **Pentaho+ Data Platform** works with Snowflake with consistency and a significantly reduced turnaround time of days instead of months.

Pentaho+ Data Integration

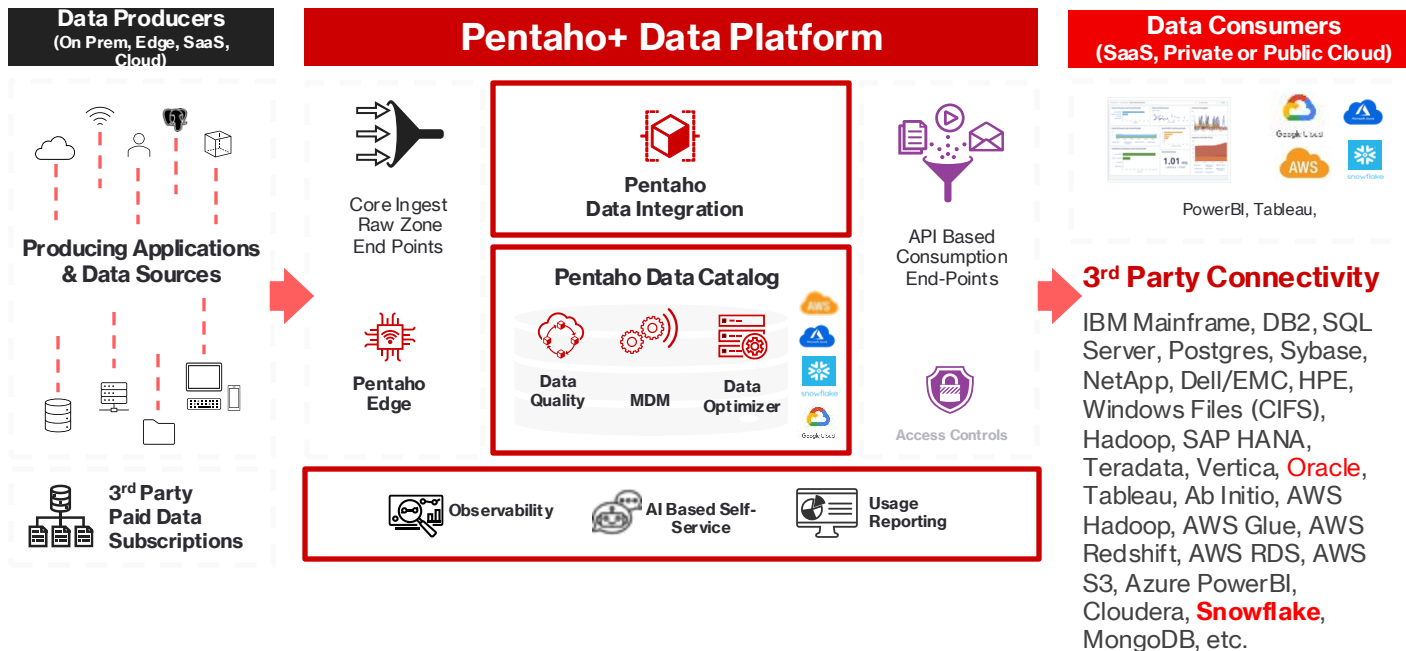
- ◆ SAP Connector
- ◆ Open Plugin framework
- ◆ Snowflake bulk-loader and warehouse integration
- ◆ Metadata Editor
- ◆ Built for big data pipeline automation & scale

Pentaho+ Data Catalog

- ◆ Data profiling - structured & unstructured data support
- ◆ Data Lineage
- ◆ Data Quality / Business Rules
- ◆ Master Data Management – data reliability for Snowflake
- ◆ Data Storage Optimization
- ◆ Semantic search
- ◆ Duplicate detection
- ◆ Simplified Data Ontology exits, expanding capabilities

Outcome

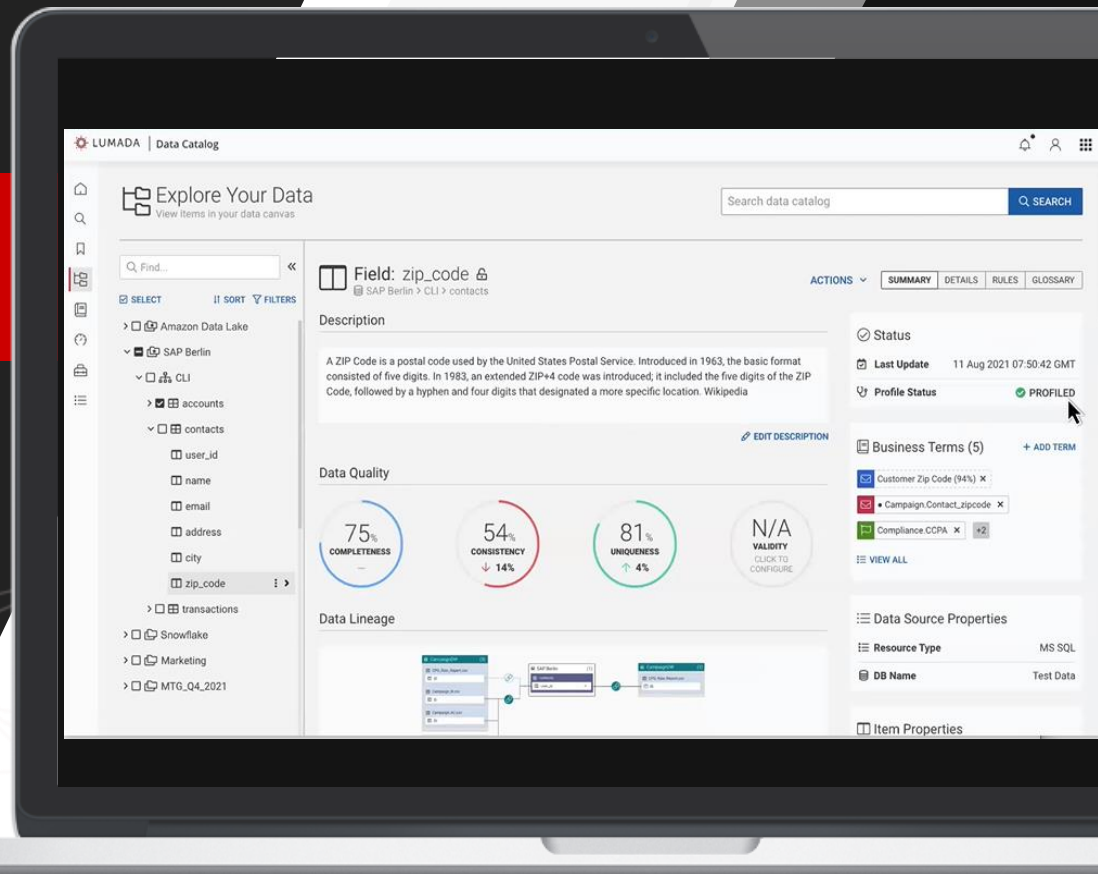
The **Pentaho+ Data Platform** can be used to rapidly manifest a working **Data Platform** which can be enhanced and/or modified as required for private and public cloud. Typical user base are line of business teams who want immediate functionality but are not yet “**Data Driven**.”



Data Catalog

Powerful Decisions Based on Trusted Data

- Automated data discovery for analytics & governance
- Accessing quality and lineage for trust
- Empower standardization with business glossary
- Data compliance for risk reduction
- Data lineage for governance



Discover Data Meaning



Automate content discovery and classification at scale

- Use AI-driven semantic discovery for all data
- Train once, discover everywhere
- Infer missing lineage and relationships for a complete picture
- Gain deeper understanding with advanced rules-based discovery



Explore relationships across data and business concepts

- Bring relationships to life through a visual knowledge graph, our Galaxy View
- Visual exploration of data and relationships for experts and non-experts alike



Search To Your Needs



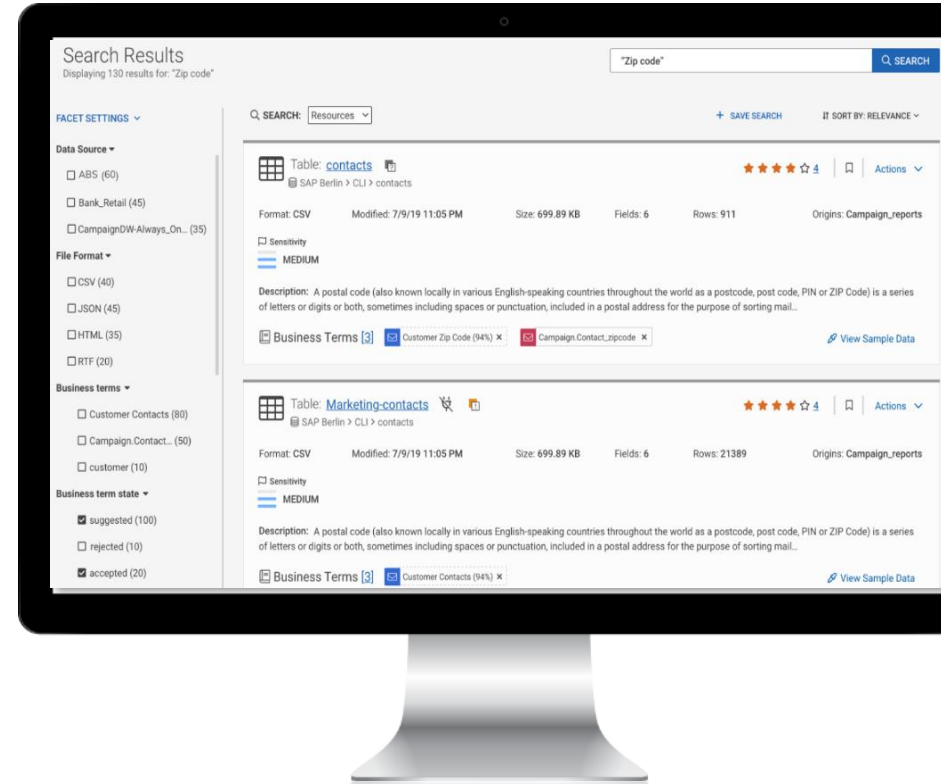
Amazon-like search experience

- Familiar experience for finding data, no training needed
- Accelerate finding all matching content
- At-a-glance views provide quick assessment



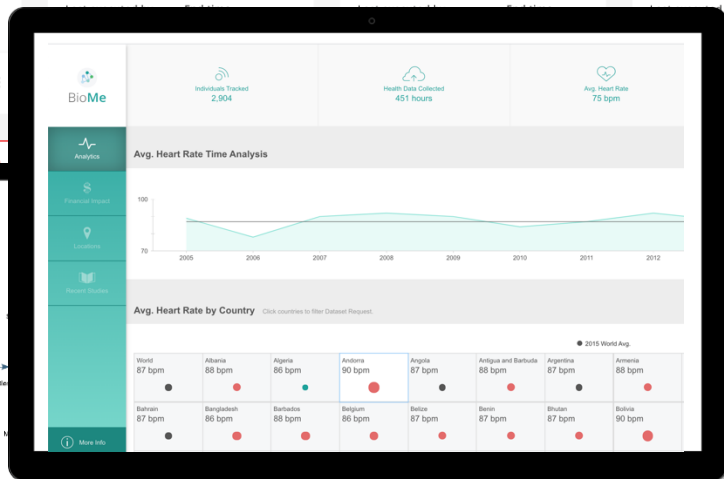
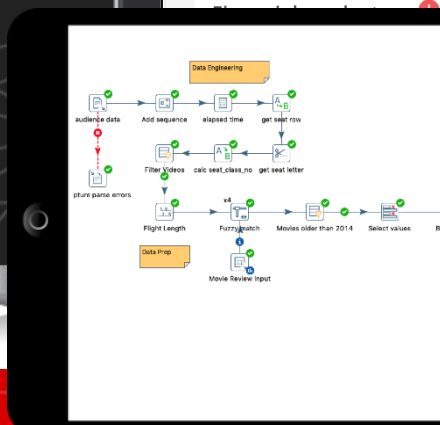
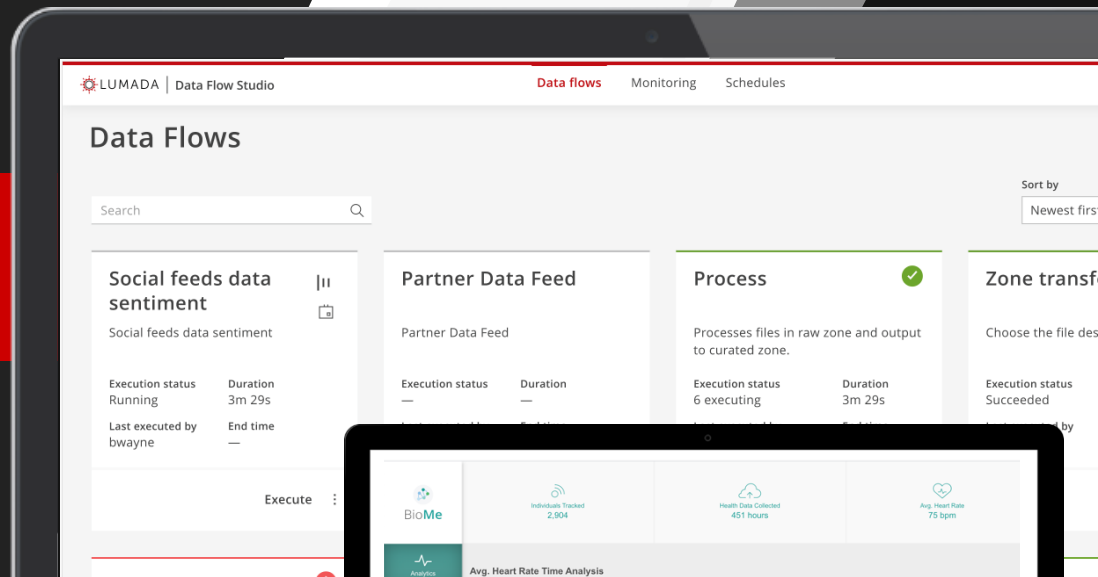
Domain-aware search

- Searches are performed using domain-specific glossaries of your teams

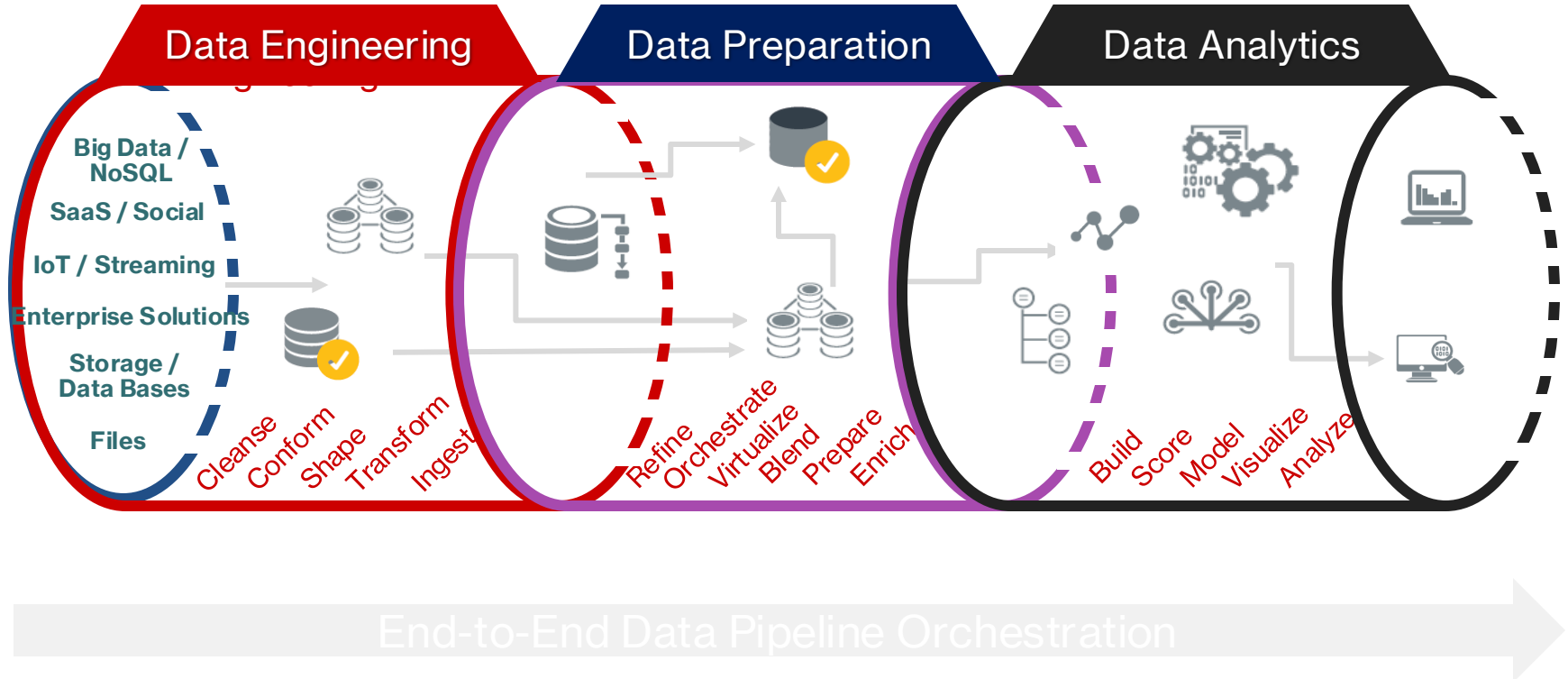


Data Integration & Analytics

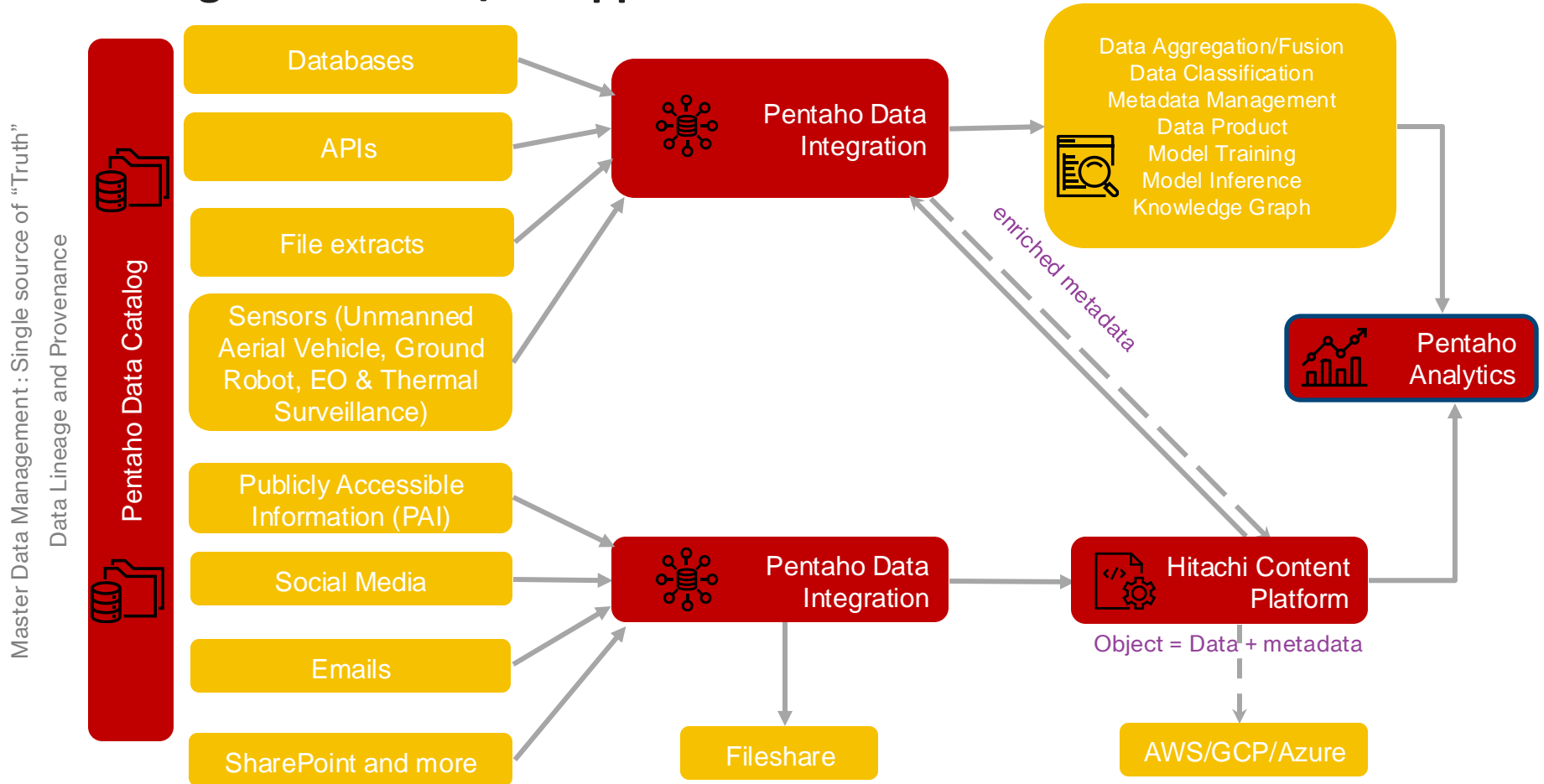
- Data pipelines & analytics
- No-code environment
- Any data, any system
- Enterprise scale and security
- Open-Source foundation
- Micro-Services Architecture



End-to-end approach



Data Integration for AI\ML Applications



Modern Data Integration, Orchestration and Analytics

Scalable End-to-End Data Management & Operations



An end-to-end analytics, ingestion and orchestration of data via a complete enterprise platform.

Flexible Data Integration



Accelerates data pipeline development and integration with data lakes and warehouses. Providing streamlined data migration and visualization

Intelligent Data Access & Delivery



Empowering users with self-service, automation thru data-as-a-service and metadata injection, ML and containerization for improved productivity

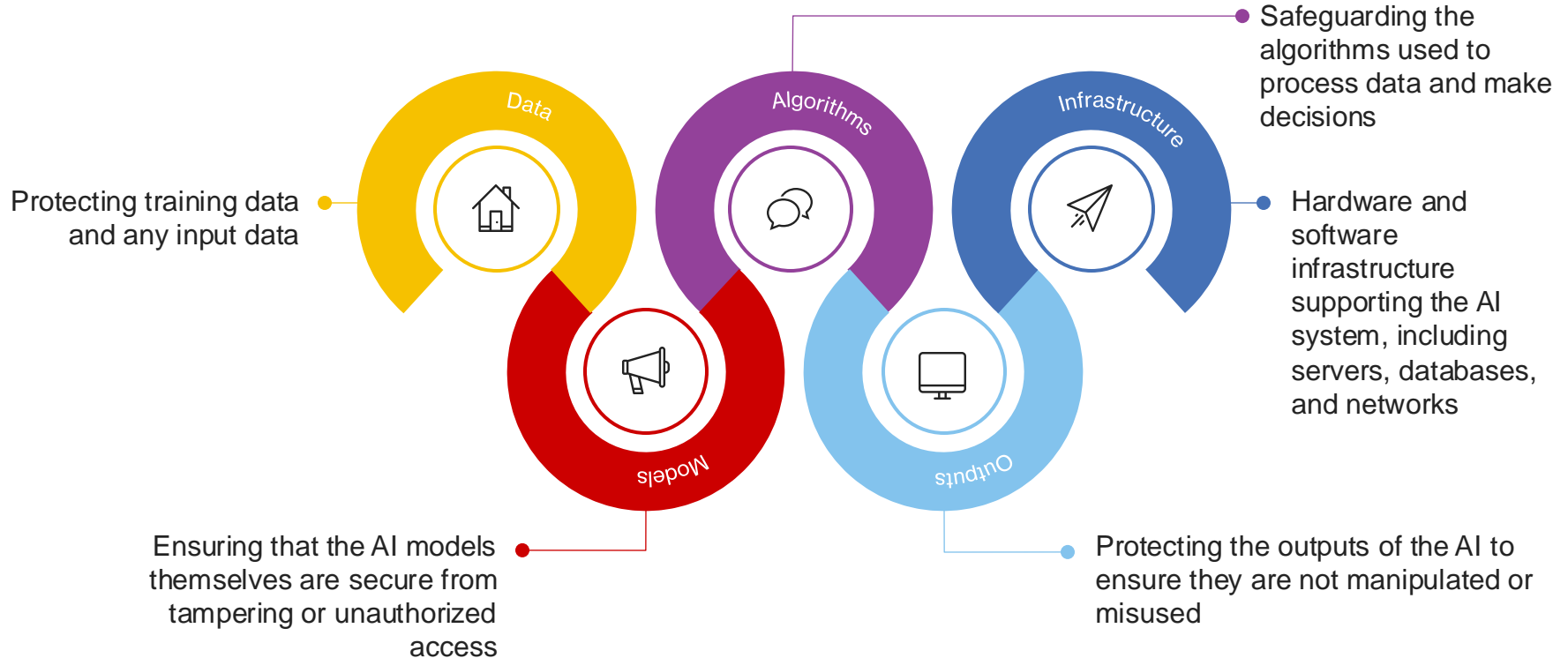
Optimize Business Analytics Experience



Enable easy to use data-driven business intelligence thru extended analytics, insights and interactive reports

Socio-technical System

“encompasses both social and technical aspects, integrating human and machine elements in complex and interdependent ways”

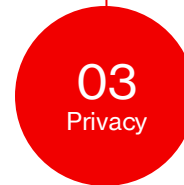


Data Governance

Purpose: Influencing AI security by establishing policies, procedures, and standards for managing data throughout its lifecycle



Validating
and
cleansing
data



Only
accessible to
authorized
individuals



Audit trails

Data
protection
laws and
regulations



Tracking data
origin
(provenance),
transformations,
and movements

Desired goal: AI outputs are reliable and trustworthy

Connect, Index and Search Strategy



Connect



Process



Test & Find

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Thank You