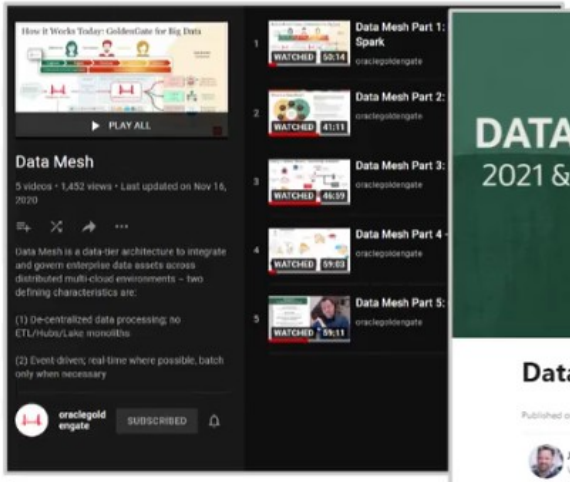
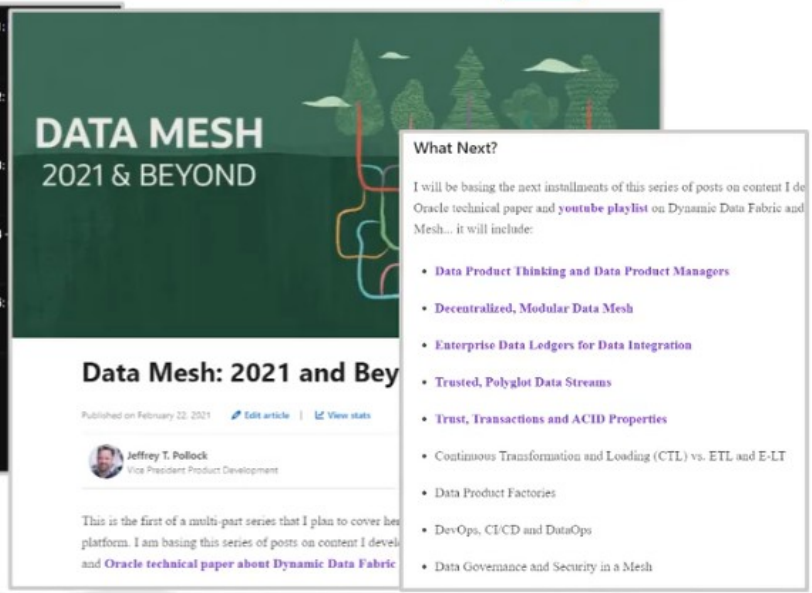
Oracle Engagement on Data Mesh

oracle.com is now full screen Exit Full Screen (Esc)

YouTube



LinkedIn



ORACLE

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Oracle Engagement on Data Mesh

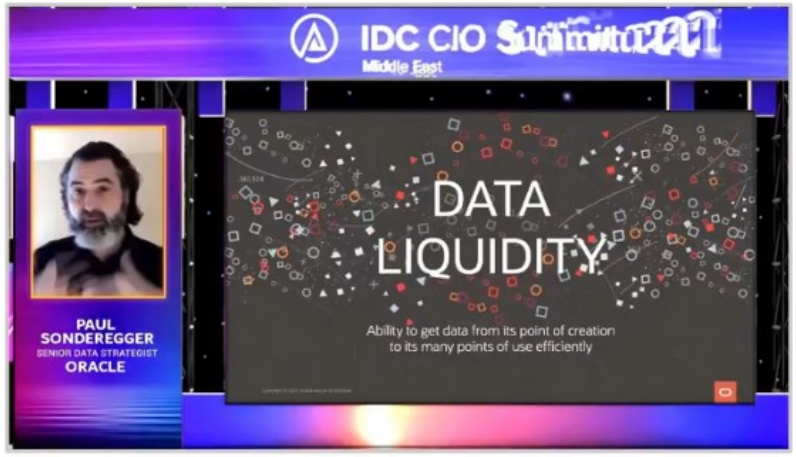
Thought Leadership

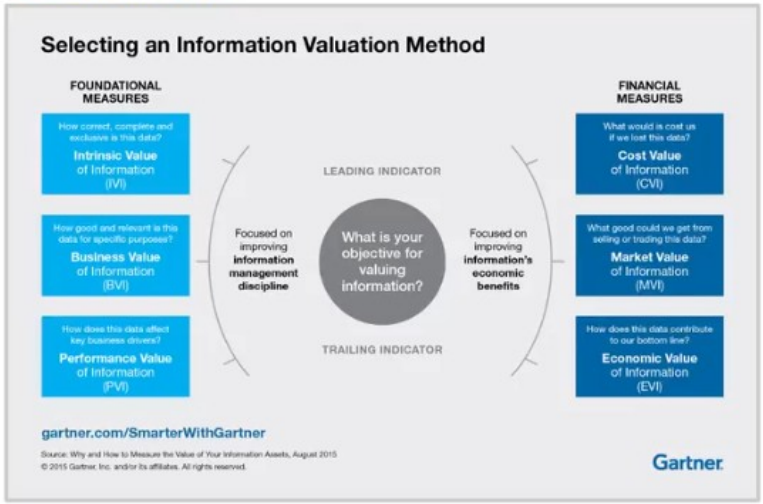
Tools for data products

Decentralized event-driven architectures

Streaming patterns

Data as Capital, and Liquidity of Data



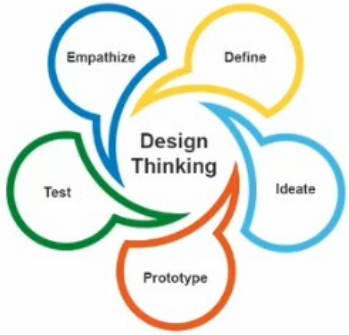


Accelerate Business Transformation Goals

Scope of Data Mesh Concepts

Organizational/Systems

Strategy: Data Product Thinking



Data Architecture

- Anti-monolith/pro-decentralization
- Business domain oriented – catalog, graph, metadata, etc.
- Event-driven, real-time, and streaming

Design Thinking

Jobs to be Done Theory

Scope of Data Mesh Concepts

Organizational/Systems

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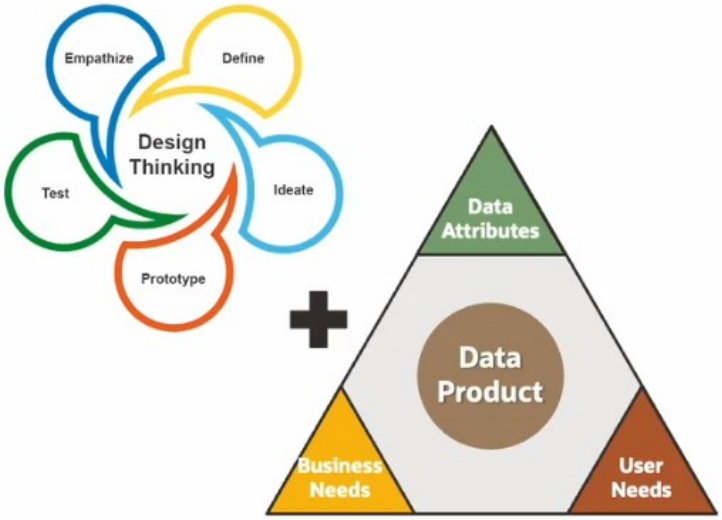

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Digital Capital and Superstar Firms[1]

25%

of a firm's value is digital capital.

"Digital capital" refers to factors of production that are
1) complementary to IT assets, but
2) are not otherwise recorded on the balance sheet

Digital capital quantities by market value

Digital capital is more concentrated than any other asset class.

The most value is concentrated in the top decile of firms by market value.

Digital capital accumulation predicts firm productivity three years out.

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Total clarity

Operational data availability

Faster innovation cycles

Reduction in data engineering

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Digital capital accumulation predicts firm productivity three years out.

Hidden Data Economy

Wide variety of shapes and structures

Applications Sensors Devices

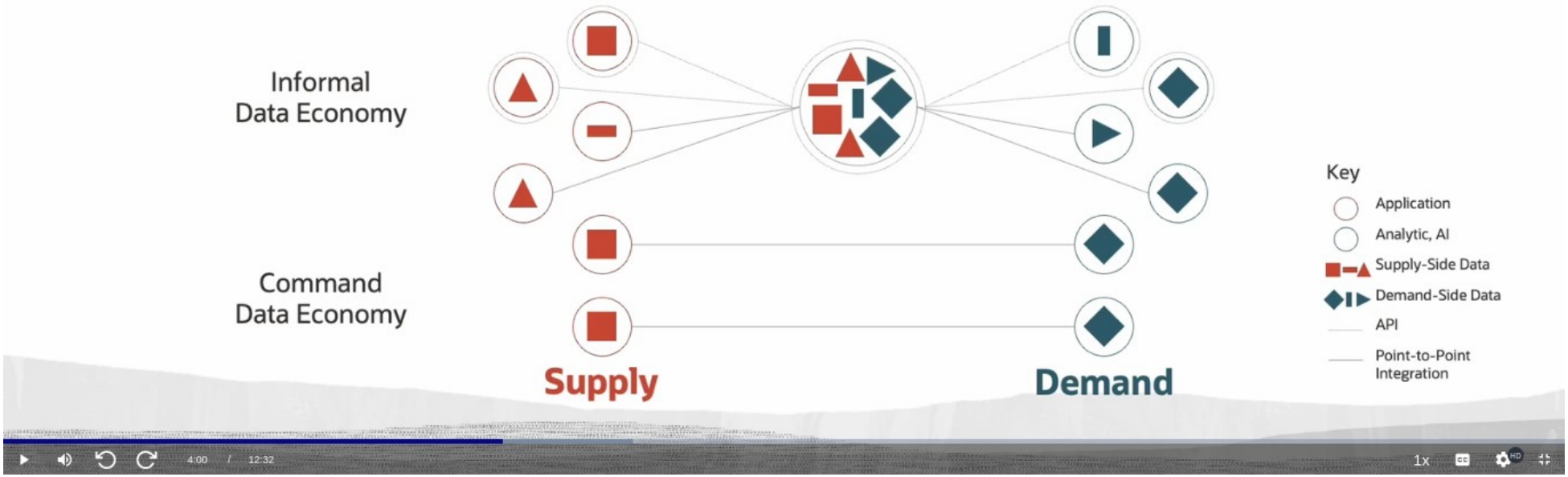
Demand side

Analytics AI

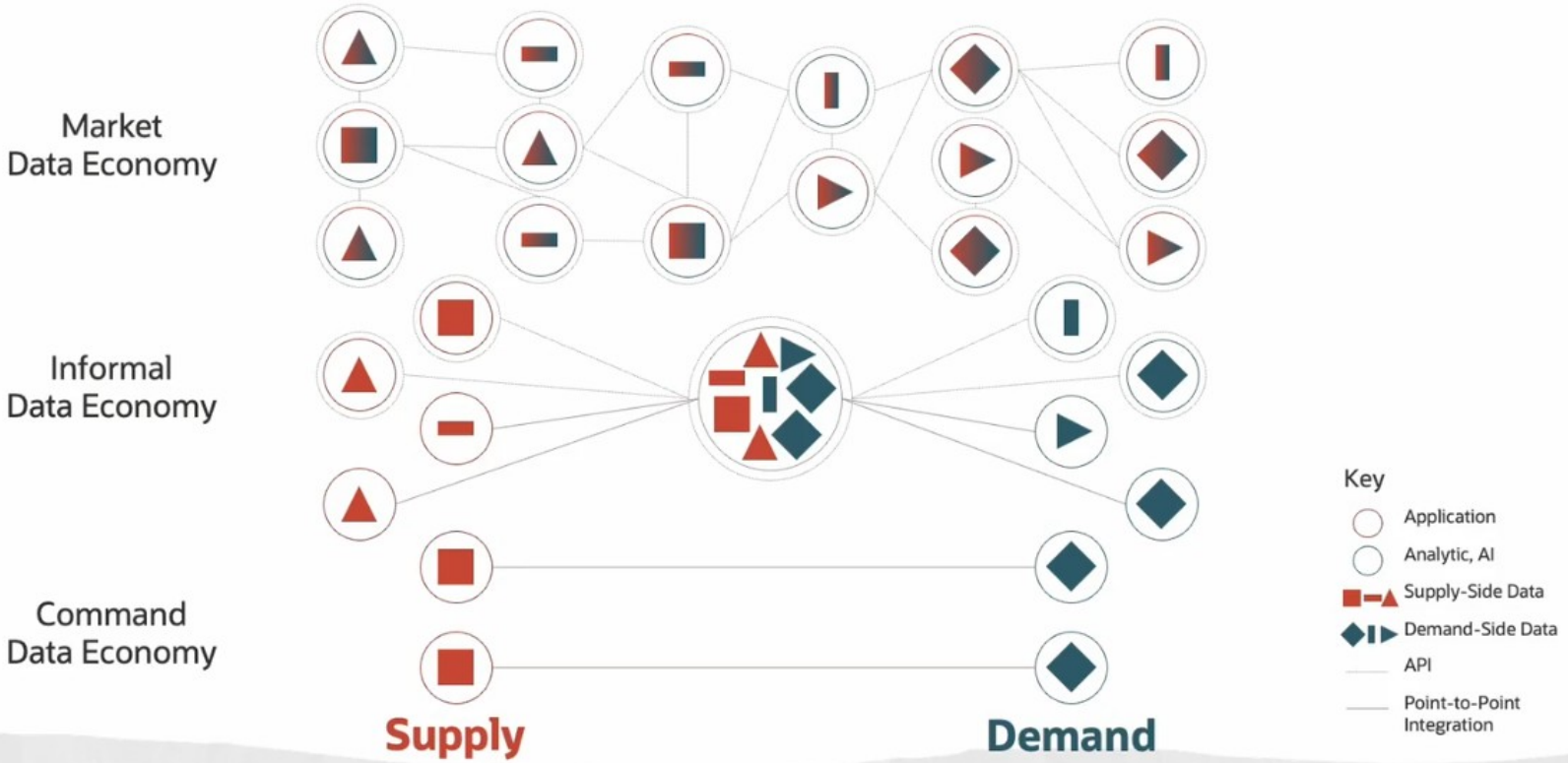
Hidden Data Economy

Websites

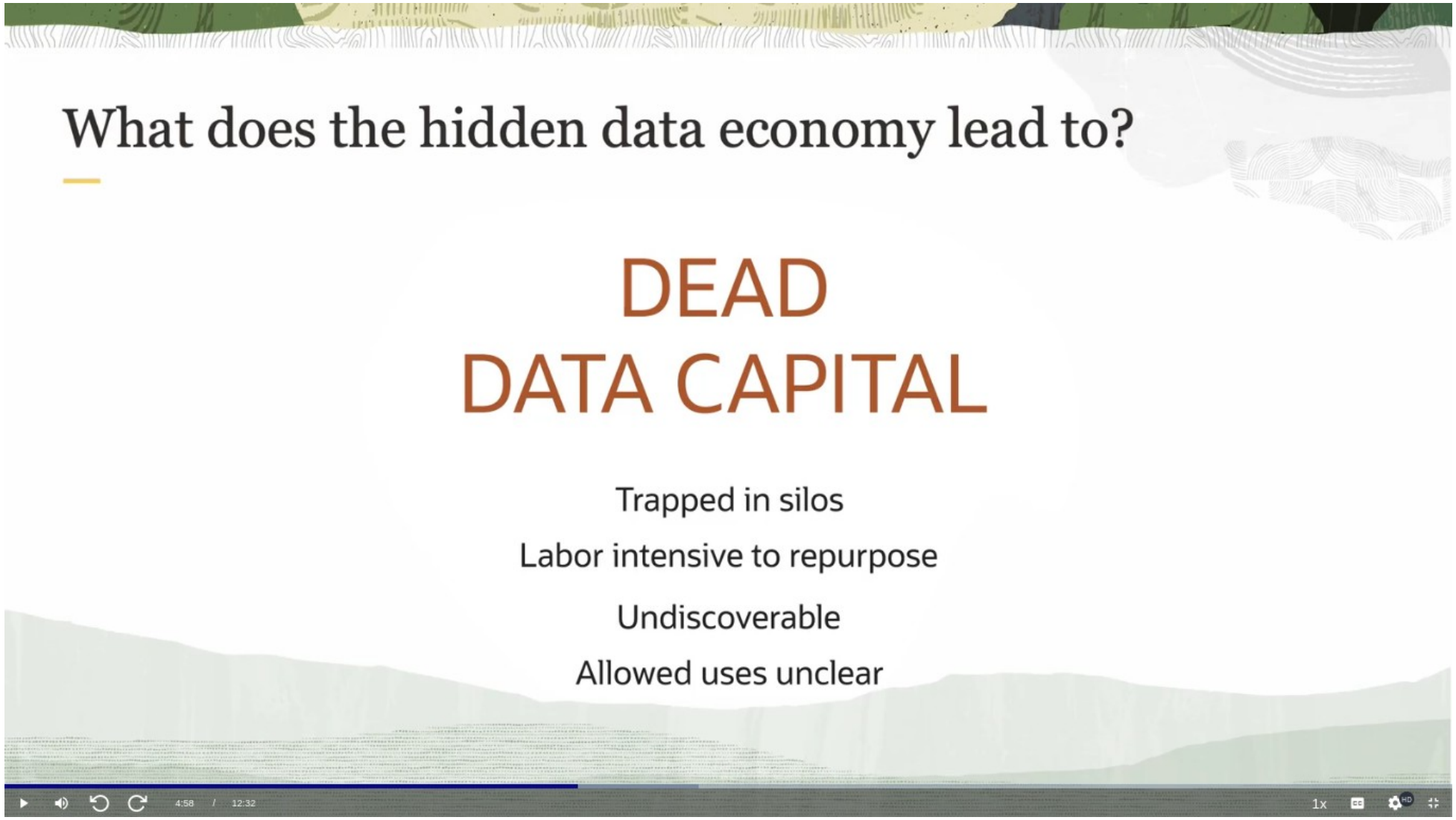
Mobile Applications



Hidden Data Economy



What does the hidden data economy lead to?



Twin Threats of Digital Transformation

Loss of competitive advantage

Legal and reputational damage

Data Strategy That Reinforces Competitive Strategy

Competitive Strategy

Create unique value — Value your customer can only get from you

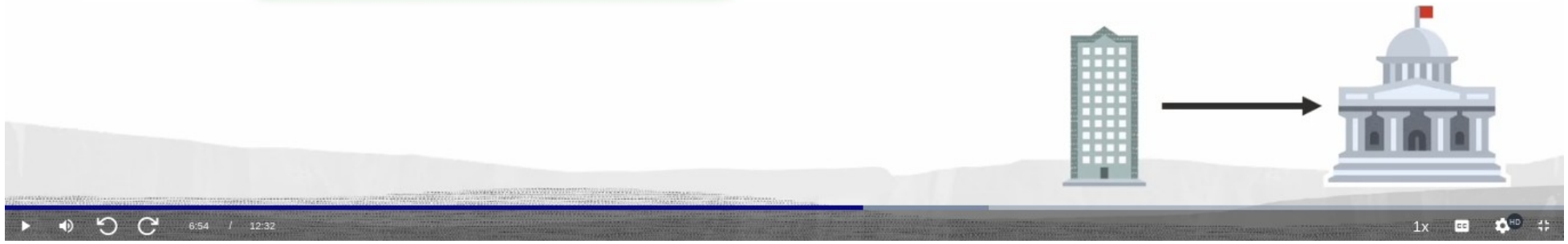
in a unique way — Through activities your rivals cannot easily copy

Data Strategy

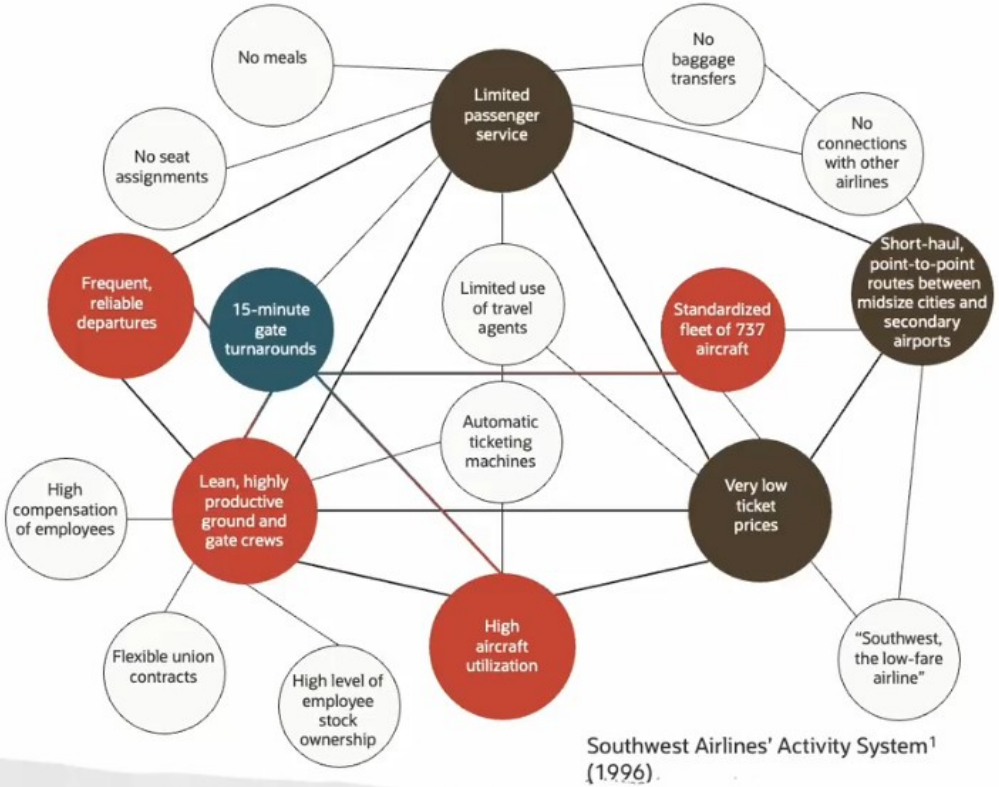
Create unique data assets — Observations only you possess

Use them to enhance uniqueness — Differentiation, cost position, or both

Protect observer and observed — Safeguards for all data stakeholders



Activity Systems Tie Data Strategy to Competitive Strategy



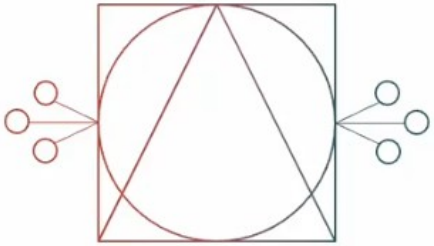
Southwest Airlines' Activity System[1] (1996)

Can we use predictive maintenance to get to 10-minute turnarounds?

Sensor data
Engines, subsystems
Record data
Aircraft utilization, repair and maintenance, arrivals and departures

Anonymize, mask employee records
Monitor model for performance as planes age

Data Products, the Building Blocks of Data Strategy



A data product is a discrete set of observations and its complementary code designed to fulfil one or more jobs to be done.

Supply Side

Mostly passive: Data that **is** something

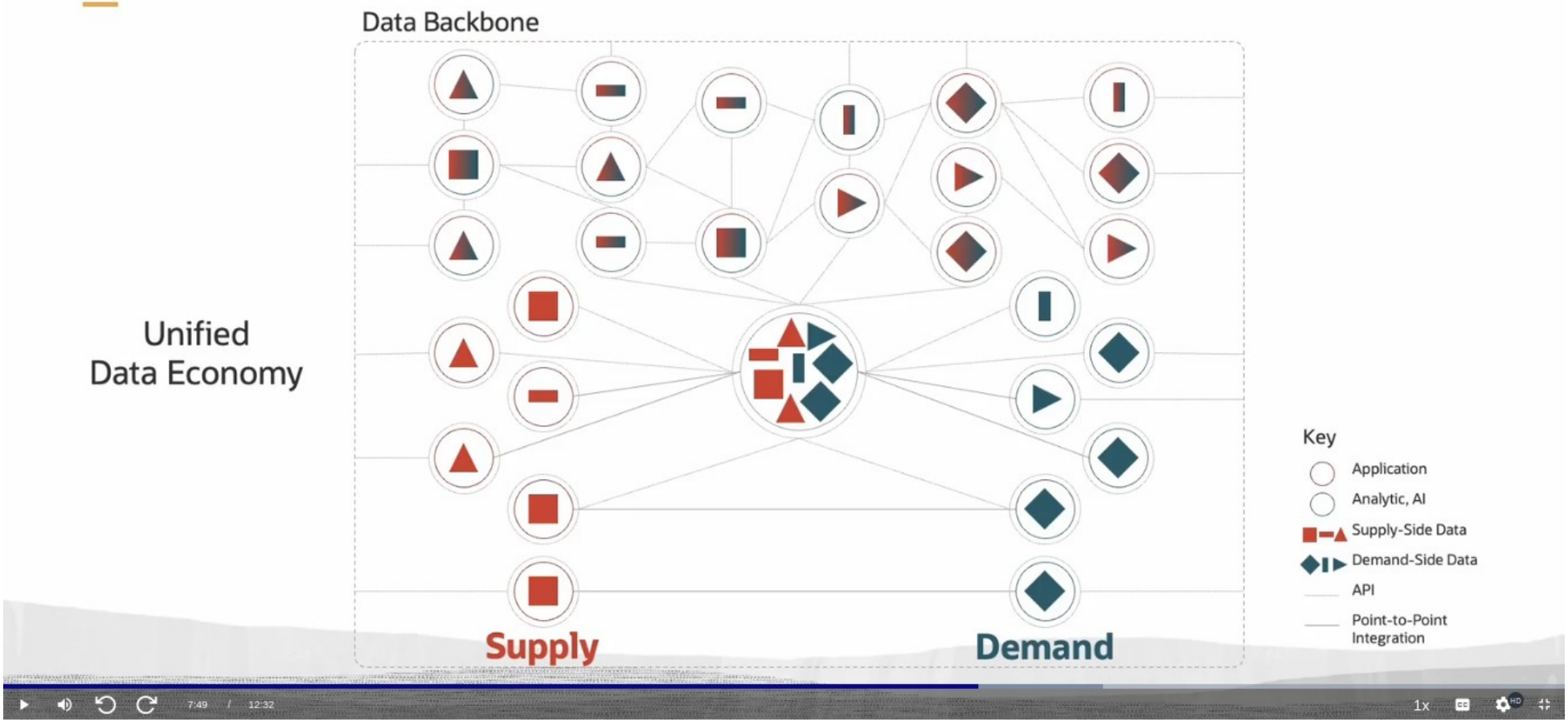
Data Sets
  Sets of observations in different shapes, formats
Models
  Domain objects, data models, ML features
Libraries
  Inert algorithms, technical definitions of business semantics

Demand Side

Mostly active: Data that **does** something

Analytics
  Reports and dashboards, real-time and historic
Algorithms
  ML models, scoring, business rules
Data Services
  Payloads, topics, authorization

A Unified Data Economy Requires a New Data Backbone



Principles for Translating Data Strategy into Data Architecture

Data Liquidity

Ease of data reuse and recombination[1]

Data Productivity

Value created as a result of data usage per unit of work, dollar invested, or resource consumed

Data Security

Protections against external and internal threats

Data Governance

Assurances of data quality, compliance, ethics

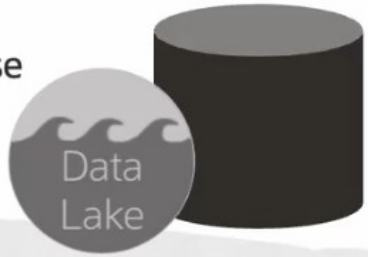
A Data Mesh Is...

A data solution for enterprise-scale domains and/or event-driven data-centric cloud projects

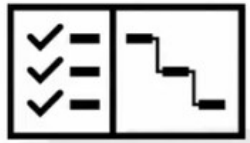
A data architecture approach focused on outcomes (data products), IT agility (service mesh), and speed (streaming data)

A Data Mesh Is Not...

An alternative point-solution for data warehouse or data lakes



A finite project that can be run by a LoB Departmental IT org in isolation

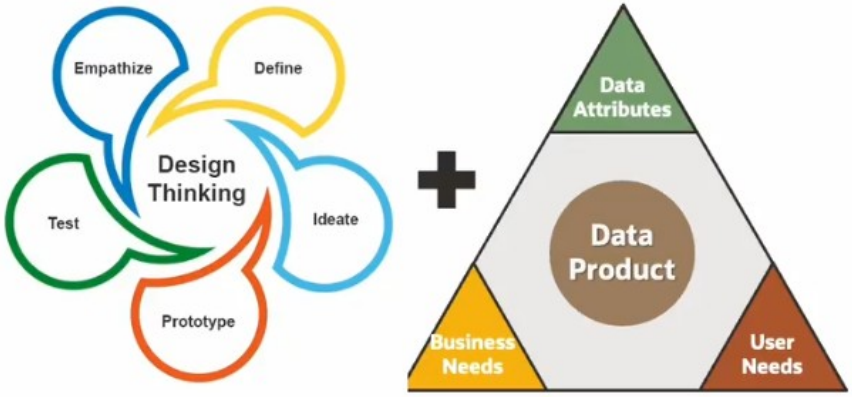


A single tool or single cloud service that you can buy

Attributes of a Trusted Data Mesh

Upgrade legacy enterprise data architecture, monolithic integration tools, and outmoded batch processes.

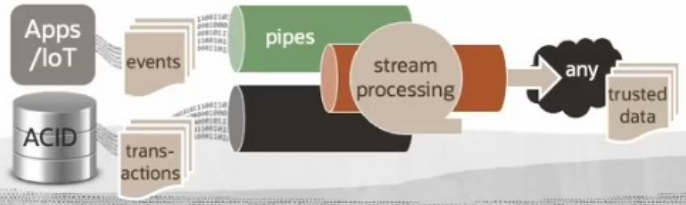
Value-Focused, Data Product Thinking



Decentralized, Multicloud Mesh

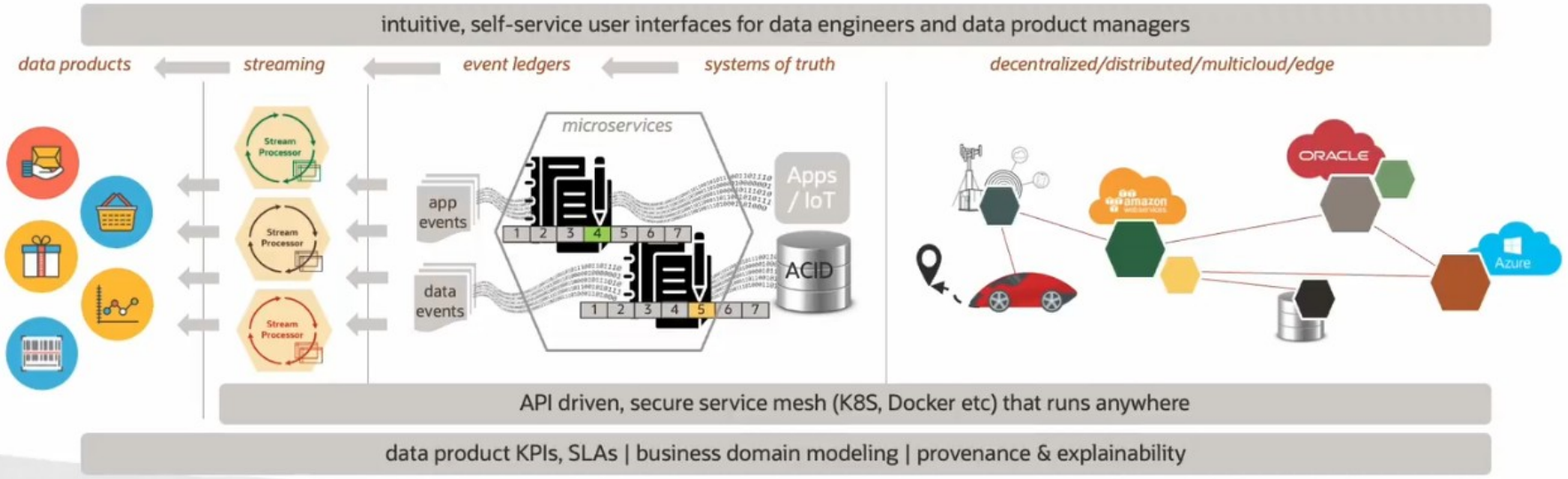
Enterprise Data Ledgers

Trusted, Polyglot Streams



What is a Data Mesh?

A trusted Data Mesh is a data architecture approach focused on outcomes (data products), IT agility in a multicloud world (service mesh), trusted data of all kinds (polyglot data streams), and faster business innovation cycles (event-driven integration).



OCI-Based Data Mesh Blueprint