







EDM Webinar

# The Data Fabric: How Ontologies and AI can Transform Data to Business-Decision Knowledge

Panel discussion with:

**Jorge Capilla**
*Data&Analytics Partner for the Western Europe Region*
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EDM Council

# Moderated by **Mike Meriton**
# Co-Founder & COO, EDM Council

- Mike is Co-Founder & COO of the EDM Council
- Served as the first Chairman and active Board member since inception in 2005
- Joined EDM Council in 2015 as a Senior Advisor to lead Industry Engagement strategy, new member services and Council Operations
- Previously the CEO of GoldenSource and held key executive roles at CheckFree (Fiserv), D&B and Oracle.

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# Today’s speakers

Moderator

**Mike Meriton**
Co-Founder & COO
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**Jorge Capilla**
Data&Analytics Partner for
the Western Europe Region
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**Philippe Limantour**
EMEIA Financial Services
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# The Data Fabric: How Ontologies and AI can Transform Data to Business-Decision Knowledge

EY
Building a better working world

# How do companies use Data Fabric to address challenges to accelerate their Data Transformation Journey

## OBJECTIVES

Typical objectives in large corporations:

- **Data is a Common and Governed Asset**
- The information is **democratized in the organization with real-time access**
- Multi-device and self-service, with a **friendly user experience**
- **Automated, flexible and scalable** to incorporate new sources
- While **new technologies or platforms converge with current initiatives, projects and ecosystem**

## CHALLENGES

COMPLETENESS

Gather the accurate insights

How to encompass current and historical information in the solution provided?

CONSISTENCY

Make big rivers with small streams

How to ensure alignment between the strategies proposed and the technologies alternatives, while involving the existing projects and initiatives?

SPEED TO VALUE

Buy in from Corporate and Business Areas

How to convince the different areas to onboard a new platform competing with their existing alternatives?

COLLABORATION

Promote sharing and collaboration

How to promote information sharing and a collaboration culture?

## The Business Data Fabric Model

Acceleration in the Data-Mapping through **Auto-Discovery Technology** embedding AI in processes and operations:

Increase the accuracy in 40%-90% vs a human led effort approach

Enterprise-wide transversal Data Consumption and AI by exposing in real time data points to the business through **Virtualization Technology**:

Increase efficiency up to 80% cost saving

Underpinned by **Ontologies**, to ensure the right P&U customer experience (payor, contract holder, tenant, family, home) and hyper-personalization:

Customer segments x20.000 vs a human led effort approach

# Ontologies and auto-discovery introduces a new data paradigm, Linked Data, which coheres the elements of the entire architecture

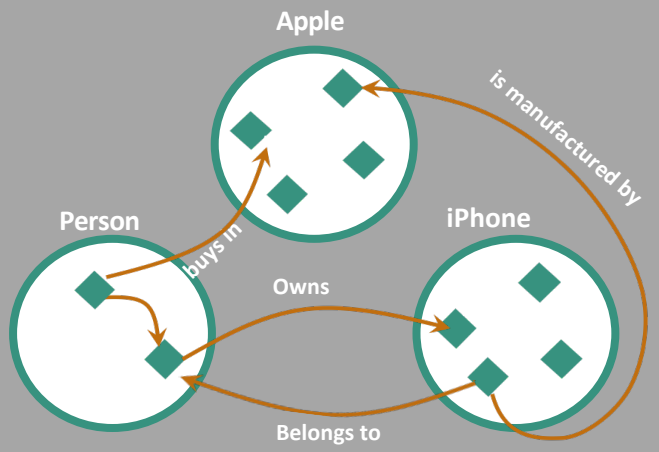
With an ontology corporations reach the next level in the understanding and use of their data:

- Ontology framework goes beyond traditional taxonomic relationships as it allows to introduce **more advanced semantic knowledge** from different domains and interrelate it
- It creates a **Knowledge Graph** depicting all the semantic relations and added features of the data environment substituting the typical tree structure data models
- Ontologies function like a 'human brain: they work and reason with concepts and relationships in ways that are close to the way humans perceive interlinked concepts
- EDM Council's FIBO ontology was a reference source

OKG FIBO

**Semantics & multiplicity of relationships among data entities vs Hierarchical-Relational Data Models**

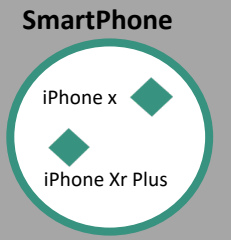
*Example:*




**AI auto Discovery of new data and auto-match of synonyms, approximations, writing errors, etc vs Exact matches from classic tree-based relational data models**

*Example:*

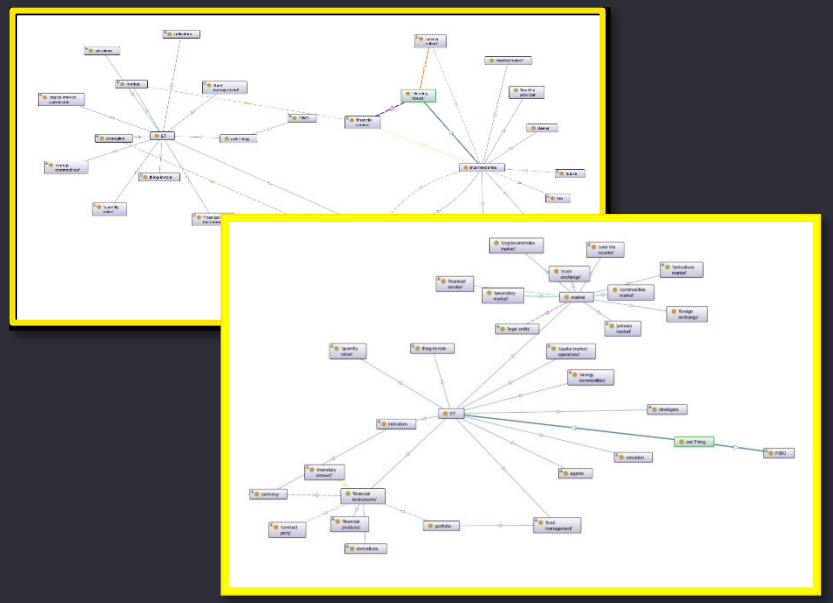
**When you search for *'SmartPhone…***




**Embedded Semantic relationships allow to define equivalence and difference between instances**

# Example: Ontology Data Model in comparison with Relational Data Models

## Ontology Data Model

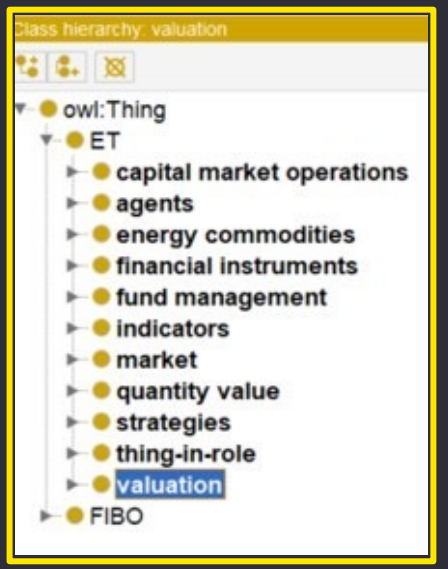


- An Ontology Data Model provides higher level of sophistication by providing richer information (semantic knowledge), including information about relationships among entities
- Also, its interconnectedness and interoperability makes it invaluable for addressing the challenges of accessing and querying data across organization

VS

## Relational Data Models

- Relational Data Models within organizations lack the power and extensibility of ontologies
- They still rely on tree structured taxonomies that **shows hierarchical relationships** within a category or a domain




# Beyond any data model, there is always a crucial question that has to be answered: *'who is the customer'*

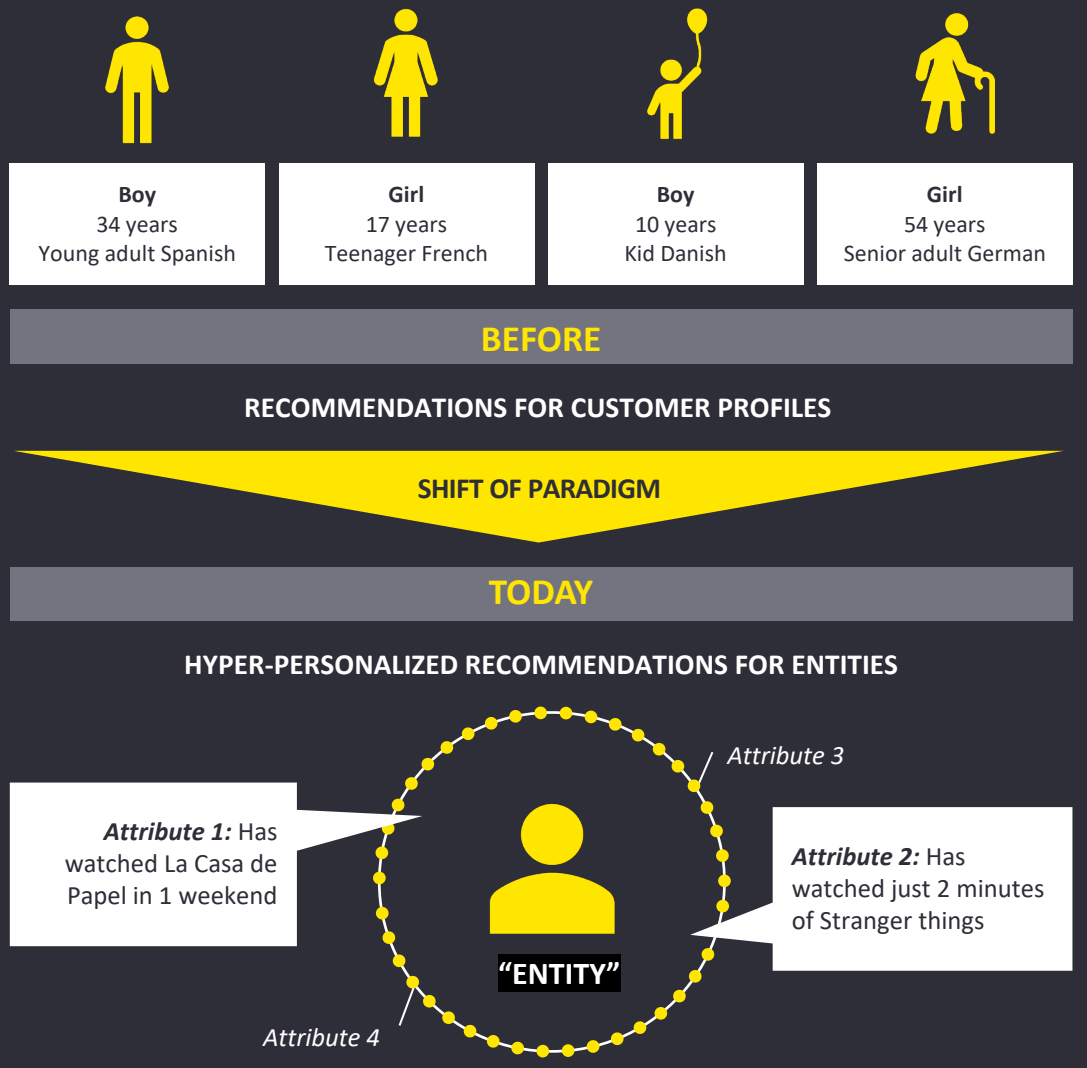
*At Netflix AI & Data is at the core of the business strategy*

**More than 80%** of the TV shows and movies watched on Netflix are **discovered through** the platform's **recommendation engine**. When you think you are choosing what to watch on Netflix you are basically choosing from a number of decisions made by an algorithm

**NETFLIX** doesn't recommend content for a predefined customer profile based on gender, age or nationality, they have moved to the next level: **ENTITIES**

Customers are entities defined by multiple attributes including behaviour and content interaction.

Therefore, **NETFLIX** recommends content based on the history of entities with similar attributes.



# The Business Data Fabric multiplies exponentially its added value in certain scenarios & business situations

**Ontologies become a central element from which the Business Data Fabric leverages all its potential**

## 1 Innumerable data sources and data formats

- Ontologies have the capability to understand both the multiple data sources and the semantic relationships generated between data, regardless their format and their origin
- Standardizes well-defined concepts, essential for the business

## 2 Wide range of markets & products and resilience

- As the markets are high in number and increasing along the time, ontology design can be customized and updated depending on the appearance of new markets and players
- Builds future resilient architecture for quick business transformations wherever they are made

## 3 Every market has its own context depending on regions

- Bearing in mind that markets context varies across regions, an ontology is the best way to understand and formalize the information that comes with it and take advantage of it to make faster decision making
- Ensures compliance with each market's own regulations

# Key Take Aways


**The Business Data Fabric is a paradigm shift that focuses on engaging both business and technology stakeholders in a new approach**

**Embedded in the Business Data Fabric, Ontology Data Models conforms a new reality on the use of business knowledge and reasoning techniques by providing enterprise data with real meaning due to their semantic approach and interoperability**

**Under current conditions a Proof of Concept can be developed in 8-10 weeks providing immediate and tangible value for the business**

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# Traditional AI is key in order to compete in a hyper connected world…

# But traditional AI fail to “understand” data

**85%**

**“Around 85% of companies think AI will offer a competitive advantage, but only one in 20 is ‘extensively’ employing it today”**

*- Sloan Management Review*

**30%**

**of AI projects are being directed by CEOs**

*- Gartner, 2020*

## Why does it matter to be powered by AI?

Because we are experiencing a new wave of disruption unlike any we have seen before, driven by the *single platform natives.*

A key characteristic of a Single Platform Native is that they automate not only processes but decisions.

### Intuition driven decision-making

Traditionally decision making within organizations relied on the intuition/ experience of its managers.

### Data driven decision-making

The advent of “big data” drove the race towards “data driven decision- making”, which while making several strides was still prone to human error and bias.

### AI driven decision-making

Firms with a digitally native operating model have AI automating both processes *and decisions*, with humans deployed outside the critical path of operations, designing the governing policies.

# Ability to select the best way to reach a desired outcome is based on knowledge

## AI algorithms do not understand the meaning of data

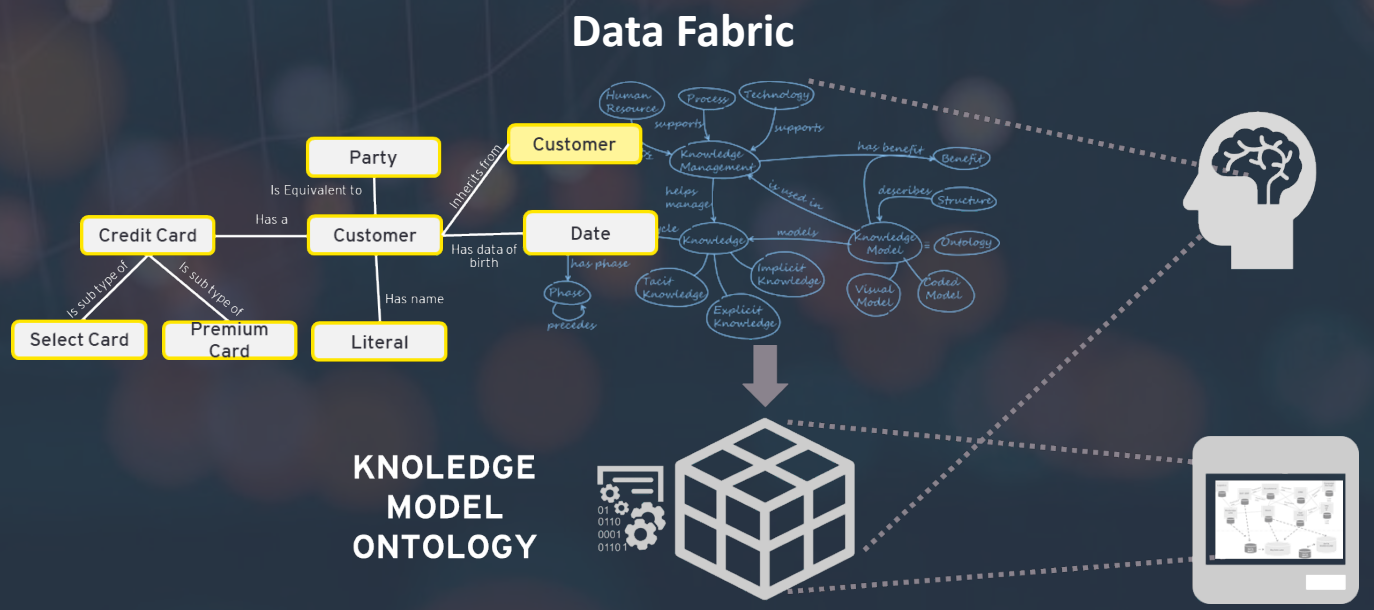
***DATA***
is a collection of facts, signals, or symbols.
In this form, it might be raw, inconsistent, or unorganized

***INFORMATION***
is a collection of data that is ordered in a consistent way

## Taking decisions requires to use a data fabric approach

***WISDOM***
***is the ability to select the best way to reach the desired outcome based on knowledge***

***KNOWLEDGE***
is a collection of information with its associated context



Case Study:

**Deploying new client offerings at scale**

**enabling counselors to autonomously access business knowledge**

# Counselors are requested to sell and operate hundreds of products and services How can they access that knowledge to **raise GNP** and **reduce execution risk**?

## THE IRRITANTS

Difficulty and waste of time for employees to quickly find the reliable business and contracts information they need to respond quickly and appropriately to their customers when they are in a sales or support situation.

Multiple sources of information used (with questions about veracity, freshness, lack of capitalization over time...)

Key 'hidden' information in large sets of contracts documents

## TARGET PRIORITIES

Effective employee time is GNP.

Autonomy issue for counselors to access offers, products and procedures.

Major issue of relevance of responses given the legal and reputational risks, as well as compliance requirements

Rationalization of costs and efficiency of network support systems (specialized support units, middle and back offices support, etc.)

Reactivity and proactivity to engage the customer

Process execution efficiency and continuous improvement

# How the Data Fabric approach can solve these challenges?

**Counselors need to give accurate answers to clients and use the right processes to execute requests**

Counselors training takes too much time and money

Counselors call sales and operations support teams which consumes time and money

Business Knowledge is documented in thousands of natural language source documents

Traditional search engines do not understand knowledge meaning

What if we could provide a user interface where counselors could ask any complex question?

The Data Fabric and AI semantics allows to automatically answer to complex questions

by *automating* the source documents to the knowledge model

by *understanding* questions and finding the right answer in few seconds

# Counselors can autonomously access to contextualized business knowledge

GOVERN BY VALUE

BUSINESS DOMAIN

BUSINESS RULES

CONTEXT

QUANTITATIVE DATA

**DESKTOP USER INTERFACE TO ASK QUESTIONS IN NATURAL LANGUAGE**

?

answer

## AI Semantic Consumption

An access to information with business meaning

**KNOWLEDGE MODEL**

## Ontologies

Encoded knowledge that represents concepts and relationships within a business domain

## AI Auto discovery

Automated matching between words and their business meaning

## Data Virtualization

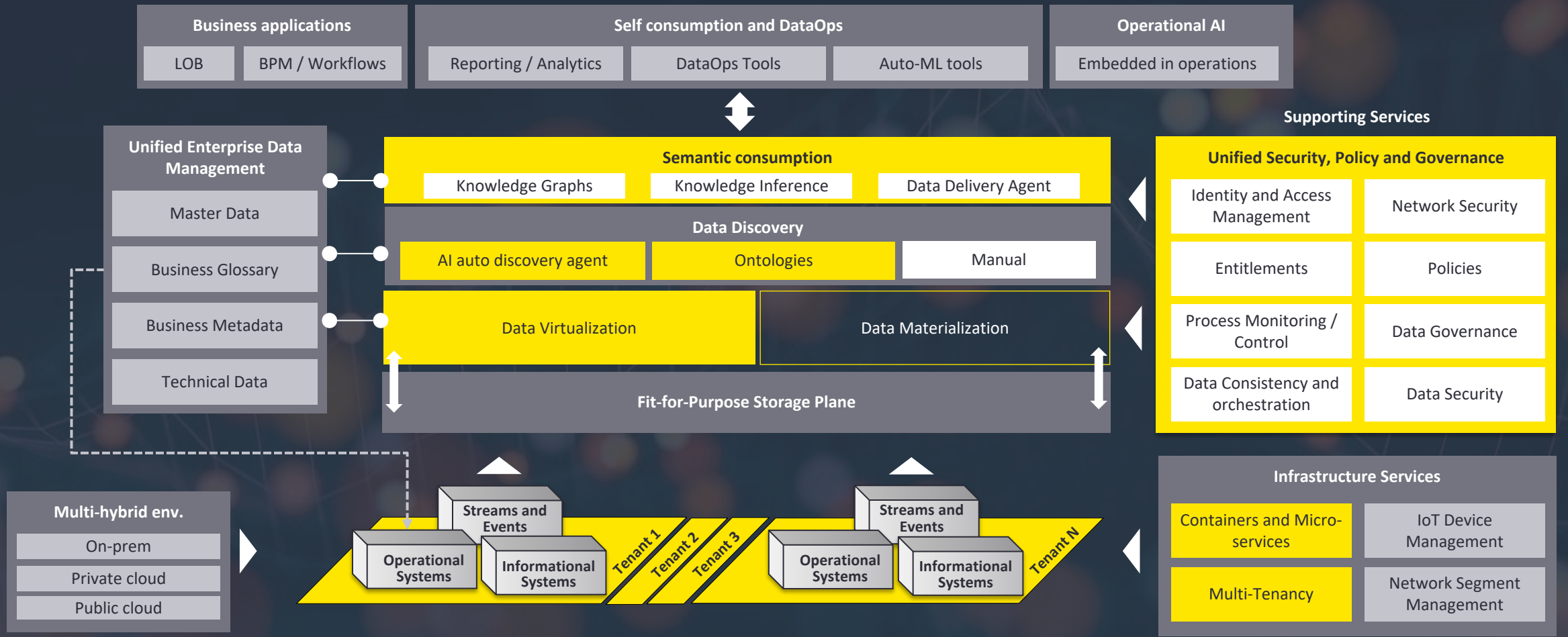
Technology to provide a single point of access to the data

**KNOWLEDGE SOURCES**

**Natural language knowledge written by business**

Thousands of documents (word, pdf, powerpoint, html, …)

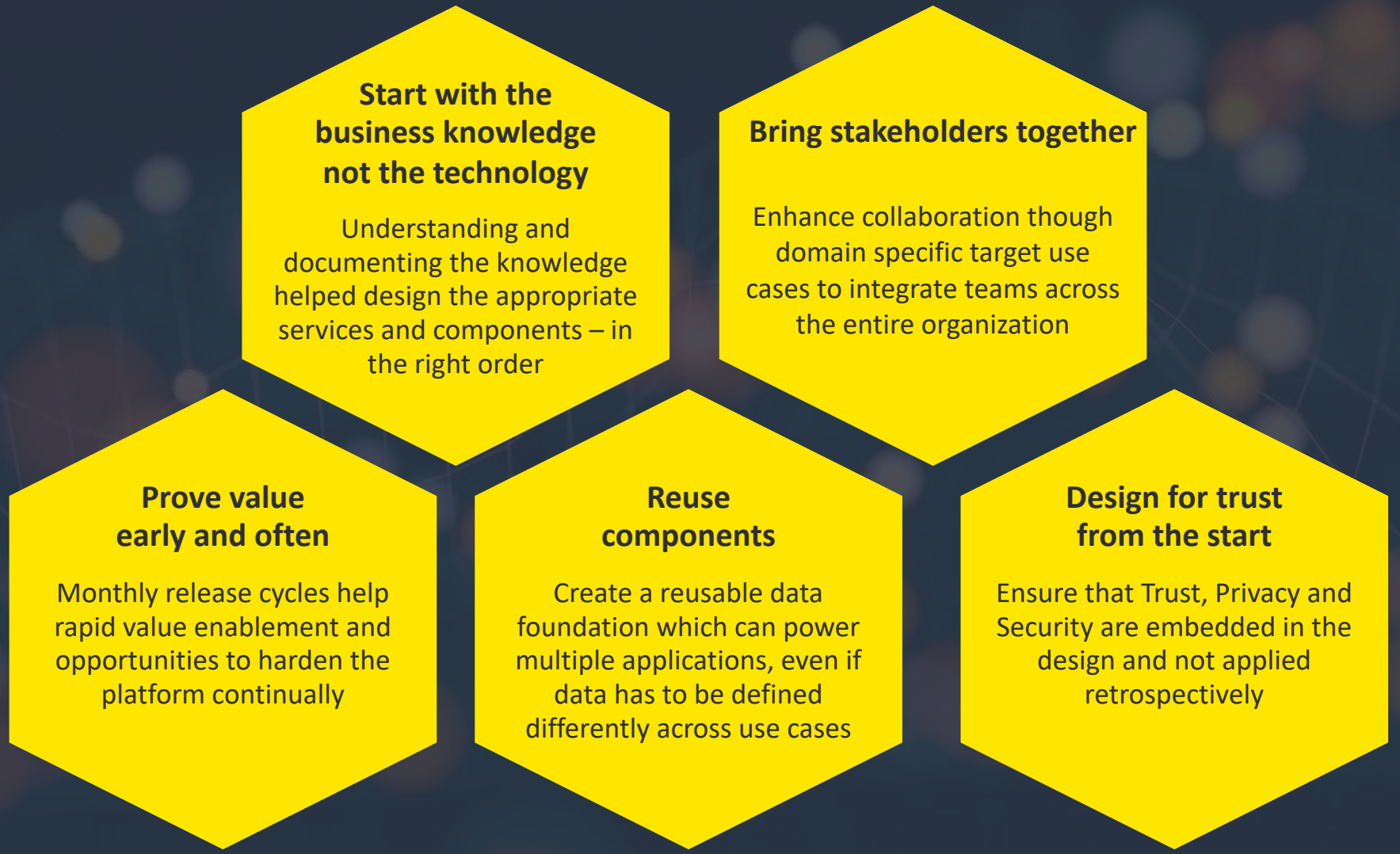
# Business Data Fabric architecture blueprint




Business users, analysts, Data Scientists would now use the common consumption layer.
Additionally, in rare scenarios, Data Scientists could also have direct access to the raw data for their analysis.

- **Operational Systems** - Structured (RDBMS, OLTP), Un-structured – XML, Files, Mass data
- **Informational Systems** - Data Marts, Data-Warehouse, Data Lakes
- **Stream and Events** - IoT

# Lessons Learned



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Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.



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# Questions?


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