

A New Era of Applied AI: How to Accelerate Enterprise Adoption of AI for Business Impact

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SPEAKER
AUSTIN • MARCH 22 '23

A New Era of Applied AI:
How to Accelerate Enterprise
Adoption of AI for Business
Impact

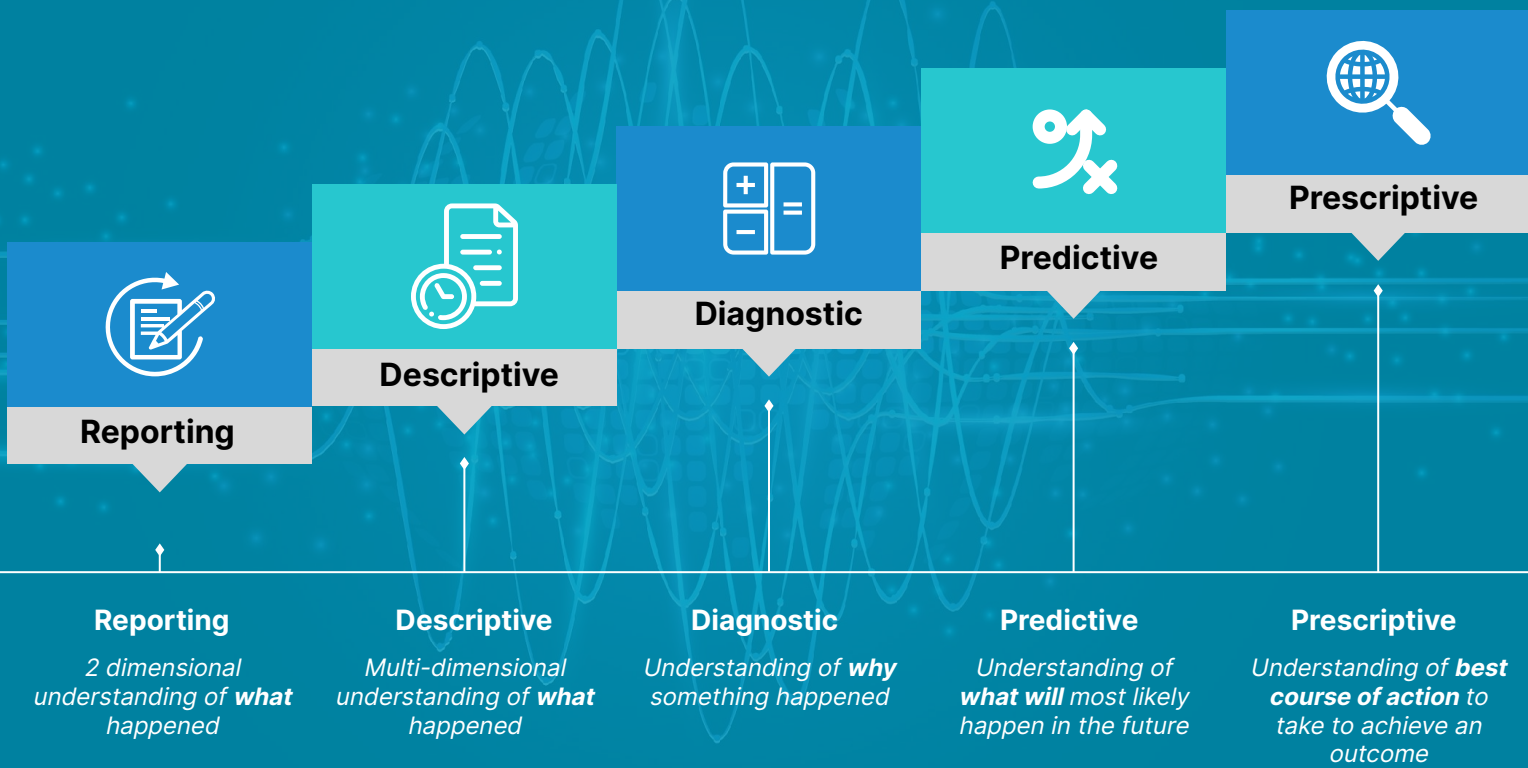


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TRACK / APPLIED & GENERATIVE AI



The Applied AI Opportunity



Challenges in ROI

\$500B

annual investment
enterprise AI/ML in
2023
(IDC)

54%

percent of AI models
moved to production
(Gartner)

85%

percent of AI projects
that fail to create
business value
(Gartner)





Priorities are clear

Over three-quarters of enterprise technology leaders surveyed said **scaling AI and machine learning** use cases to **create business value** is the **top priority** of their enterprise data strategy over the **next three years**.

(MIT Technology Review Insights Survey, 2022)



Understanding how AI has changed



Adv Analytics & Stats

- Bayesian methods
- Hadoop / Spark
- On Premise



Rise of AutoML & MLOps

- Just 'upload csv'
- Monitoring & management
- Cloud / SaaS



IOT & Generative AI

- Pre-trained / Model Repos
- Computer Vision / NLP / NLU
- Hybrid / Edge



Better decisions require intelligence

KEY CHALLENGES TO DELIVERING BUSINESS VALUE

Relevant Predictions

Business needs change rapidly. Can AI stay relevant to the business “moment?”



Explainable Predictions

Hard to understand AI predictions. Can they be explained? Can they be trusted?



Consumable Predictions

AI is valuable only if it can be consumed by business. Can decision makers consume AI-augmented insights?

Example: Forecast future sales



The screenshot displays the Power BI Desktop interface for a report titled "sales_insights". The dashboard contains four visualizations:

- Sales Amount Avg:** A gauge chart showing an average sales amount of \$764.82, ranging from \$0.00K to \$1.53K.
- Order Quantity by Product Line:** A pie chart showing the distribution of order quantities across four product lines: S (38.61%), M (28.07%), R (25.7%), and T (7.62%).
- Sales Amount by Ship Quarter:** A line chart showing sales trends from Quarter 3, 2005 to Quarter 3, 2008, with a peak in Quarter 2, 2008.
- Sales Amount by Product Category:** A treemap visualization showing sales distribution across categories R-2, M-1, T-3, and S...

The interface includes a ribbon with tabs for File, Home, Insert, Modeling, View, and Help. The right-hand pane contains sections for Filters, Visualizations, and Data, with various options for building and filtering visualizations.

What is the Semantic Layer?



A semantic layer is **a business representation of corporate data that helps end users access data autonomously using common business terms**. A semantic layer maps complex data into familiar business terms such as product, customer, or revenue to offer a unified, consolidated view of data across the organization.

[https://en.wikipedia.org › wiki › Semantic_layer](https://en.wikipedia.org/wiki/Semantic_layer) ⋮

[Semantic layer - Wikipedia](https://en.wikipedia.org/wiki/Semantic_layer)

RA what is a semantic layer?



A semantic layer is a conceptual layer in a data warehouse that provides a simplified and standardized view of the data for business users. It acts as a bridge between the technical data model of the database and the business requirements of the end-users.  

The semantic layer consists of metadata, which is data that describes the data in the database, and it defines business terms, measures, and dimensions in a way that makes sense to end-users. The semantic layer provides a common language and understanding of the data, which helps to reduce confusion and ambiguity when different users access the same data.

The main purpose of the semantic layer is to make it easier for non-technical users to access and analyze the data. It abstracts the complexity of the underlying data model and presents the data in a way that is intuitive and easy to understand. This simplification can speed up the process of generating reports and queries and enable business users to make better-informed decisions based on the data.



Where is the Semantic Layer?



Data Pipelines

Hard coded into ELT transformations – can be difficult to govern and keep consistent across disparate use cases.



Data Warehouse

Tend to be rigidly defined and difficult for business users to interact with directly. Often results in business groups extracting data subsets and setting up localized semantic layers



Independent “Universal” Semantic Layer

A purpose-built platform or tightly integrated set of services that leverage power of central data platform



Analytics Tools

Results in siloed semantic layers with inconsistencies across different use cases or work groups using different analytics consumption tools.

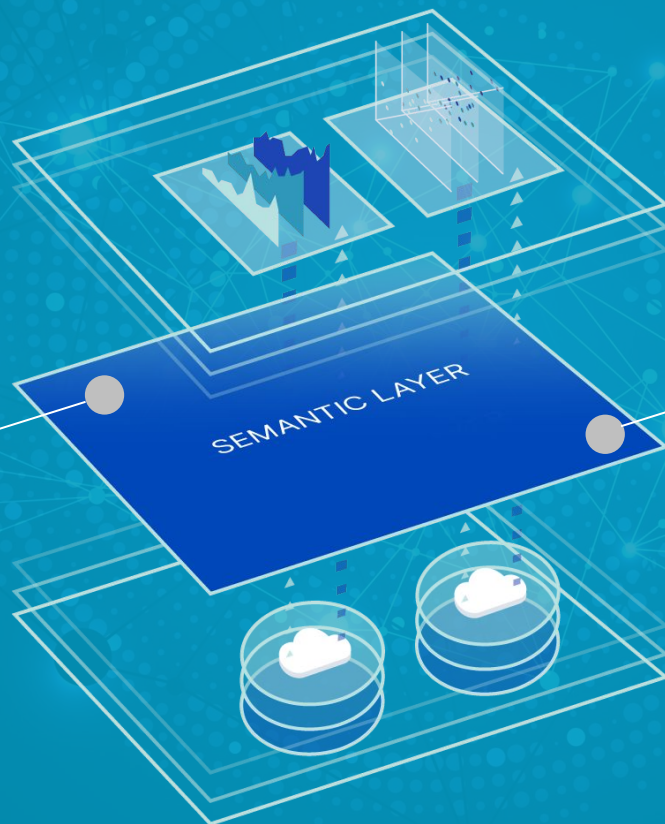




A Shift in Knowledge Gravity

Managing Business Context with Passive Metadata

- How is the data structured & what are the key data relationships?
- Where does the data come from?
- What is the shape and size of the underlying raw data?



Augmenting Analytics Experience with Active Metadata

- What data is being used and what are the most popular combinations?
- How can we augment historical data with predictive & prescriptive data?
- Which queries have run, how have they performed & how can we make them faster?



AtScale Capabilities for Scaling AI

MANAGED FEATURES

Manage library of features while retaining control over definitions, calculations, and lineage. Serve on-demand feature data to ML Pipelines.

SEMANTIC PREDICTIONS

Publish ML Model-generated predictions to business users with full semantic layer context – consumable through existing BI tools.

ON-DEMAND INFERENCE

Integrate ML Model-generated inferences within semantic layer to directly generate predictions with push-down query logic from a BI tool.

Applied AI: Intelligent decision-making



The screenshot displays the Microsoft Power BI Desktop interface. The main view shows a dashboard with three primary components:

- Line Chart:** "Sales Amount and Units Sold Prediction by Ship Month". The Y-axis represents "Sales Amount and Units Sold Prediction" ranging from \$0.0M to \$1.0M. The X-axis represents "Ship Month" from July 2005 to July 2008. Two data series are plotted: "Sales Amount" (blue line) and "Units Sold Prediction" (purple line). Both series show a general upward trend over the period, with a notable dip in late 2006 and a sharp decline in early 2008.
- Bar Chart:** "Sales Amount and Units Sold Prediction by Country". The Y-axis represents "Sales Amount and Units Sold Prediction" from \$0M to \$6M. The X-axis lists countries: United States, Australia, United Kingdom, Germany, France, and Canada. For each country, two bars are shown: a blue bar for "Sales Amount" and a purple bar for "Units Sold Prediction". The United States shows the highest sales, followed by Australia.
- Summary Cards:** Two large text cards are positioned at the bottom left of the dashboard:
 - 16.45M Units Sold Prediction**
 - \$15.72M Sales Amount**

The right-hand side of the interface shows the "Filters" and "Visualizations" panes. The "Filters" pane includes a search bar and two filter sections: "Product Category" (set to "is M -1") and "Filters on all pages". The "Visualizations" pane shows various chart options, and the "Fields" pane shows a list of available data fields, including "Internet Sales Cube", "Customer Metrics", "Prediction Features", "Product Metrics", "Sales Metrics", "Time Relative", "Color Dimension", "Customer Dimension", "Gender Dimension", "Customer Attributes", "Gender", "Geography Dimension", "Order Date Dimension", "Order Dimension", "Product Dimension", "Ship Date Dimension", "Size Dimension", "Style Dimension", and "Weight".



What does Generative AI mean for the Enterprise?

WORKLOADS

Structured
Unstructured

Batch
Real-Time

Cloud(s)

APPLICATIONS



PROCESSES



Underwriting



Call Center



Expense
Management



CRM



Generative AI needs context, business context





Thanks

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