

The New Importance of Properly Configuring Your Semantic Model

for AI Powered Insights

Here are some things you can try:

☰ Give me an executive summary

💡 What insights should I look into?

❓ Answer this data question

OK, here's a suggested outline for your report. Select any page topic to view details and start creating pages.

Sales Performance by Product ▾

Customer Segmentation and Loya... ▾

Promotion Effectiveness and ROI ▾

Inventory and Supply Chain Mana... ▾

Describe the summary you want and the visuals it should reference. AI-generated content can contain mistakes, so review your summary carefully. [Read terms](#)

Give an executive summary

Answer likely questions from leadership

Create a bulleted list of insights

Based on the data, what questions are likely to be asked by leadership?
Answer these questions.

95/300

Reference visuals ⓘ

Current page ▾

Create

AI

As AI-powered BI agents like **BI Genius** and **Co-Pilot for Power BI** become more prevalent, organizations must rethink how they structure their **semantic models**. A well-structured model ensures that AI can provide accurate, intuitive, and meaningful responses to users' natural language queries. However, a poorly configured model can lead to confusion, misinterpretation, and frustrating user experiences.



Why Your Semantic Model Matters More Than Ever

Traditional BI users were typically analysts or power users familiar with how data was structured. They could navigate complex tables, ambiguous field names, and inconsistent relationships. AI agents, however, **bridge the gap between technical and non-technical users**, allowing anyone to ask questions and get answers instantly.

To maximize the value of AI-powered analytics, semantic models must be:

- ✅ **Clearly structured** – AI needs an intuitive, logical model to interpret queries correctly.
- ✅ **Consistently named** – Fields should have human-readable names that align with business terms.
- ✅ **Properly related** – Logical relationships between tables must make sense to AI, just as they do to humans.

Let's dive into key strategies for optimizing your **Power BI semantic models** for AI-powered analytics.



Establish Clear and Consistent Naming Conventions

As AI-powered BI agents like **BI Genius** and **Co-Pilot for Power BI** become more prevalent, organizations must rethink how they structure their **semantic models**. A well-structured model ensures that AI can provide accurate, intuitive, and meaningful responses to users' natural language queries. However, a poorly configured model can lead to confusion, misinterpretation, and frustrating user experiences....

The Problem:

Many organizations rely on technical or inconsistent naming in their models (e.g., *Sales_TBL*, *cust_id*, *RevAdj_2023*). While experienced analysts may understand these conventions, AI agents and non-technical users will struggle.

The Fix:

- **Use human-readable names:** Instead of *cust_id*, use *Customer ID*.
- **Avoid abbreviations:** Instead of *RevAdj_2023*, use *Revenue Adjustment (2023)*.
- **Be consistent:** If one table uses "Customer ID," don't use "Client Number" elsewhere.
- **Eliminate unnecessary prefixes/suffixes:** AI doesn't need *_TBL* or *_FACT* to understand a table.

✔ Example:

Bad Naming:	Good Naming:
Sales_TBL	Sales
cust_id	Customer ID
RevAdj_2023	Revenue Adjustment (2023)

AI agents process queries based on natural language. A user might ask, "What are total sales by customer?"—but if the model contains *tbl_sales* and *cust_num*, the AI may struggle to find the right fields.

Design a Logical and Intuitive Data Model

The Problem:

Many semantic models are designed based on source system structures, leading to:

- **Overly complex relationships**
- **Unclear table purposes**
- **Redundant or missing fields**

These issues make it harder for AI agents to derive insights....

The Fix:

- **Use a star schema** whenever possible (Fact & Dimension tables).
- **Group related attributes logically**—keep customer details in one table, not spread across multiple.
- **Ensure primary keys and relationships are well-defined.**
- **Avoid direct table joins in AI queries**—instead, ensure measures and relationships handle them.

✅ Example of an Intuitive Model:

A retail company wants to enable an AI-powered BI agent to analyze sales. A well-structured semantic model might include:

- **Fact Table:** Sales (contains Sales Amount, Order ID, Customer ID, Date)
- **Dimension Tables:**
 1. Customers (Customer ID, Customer Name, Location, etc.)
 2. Products (Product ID, Product Name, Category, etc.)
 3. Dates (Date, Year, Quarter, etc.)

This structure allows AI agents to **efficiently generate insights** without confusion or missing relationships.

Optimize Measures and Calculations for AI Queries

The Problem:

AI agents must generate **accurate** and **meaningful** responses based on user queries. If calculations are embedded in raw SQL queries or poorly named measures, AI may struggle.

The Fix:

- **Use well-named, pre-defined DAX measures** instead of expecting AI to compute complex formulas.
- **Ensure key business metrics (KPIs) are readily available** rather than requiring multiple steps.
- **Avoid ambiguous calculations**—clearly define what "Revenue" includes (e.g., gross vs. net).

✅ Example of Measure Optimization

Bad Measure Name	Good Measure Name	Definition
Rev_Adj	Net Revenue	Total revenue after discounts and adjustments
Sales_amt	Total Sales	Sum of all sales transactions
Profit%	Profit Margin (%)	$(\text{Net Profit} / \text{Total Revenue}) * 100$

When users ask, "What was our net revenue last quarter?", AI should map that to the correct measure effortlessly.

Provide Metadata, Synonyms, and Field Descriptions

The Problem:

AI needs **context** to interpret queries correctly, and so do your users. If business users don't know how data is structured, they may get misleading answers. Additionally, different users may phrase the same question in various ways, making it essential to define **synonyms** for key fields.

The Fix:

- **Add field descriptions** in Power BI to provide clarity on what each field represents.
- **Define business rules for key measures** to ensure accuracy.
- **Document table purposes and relationships**—this also helps human users!
- **Use Power BI Synonyms** to allow users to query data naturally, even if they use different terminology.

Enhancing AI Querying with Power BI Synonyms and Field Descriptions

✅ Power BI Synonyms: Helping AI Understand User Queries

Power BI **Synonyms** enable AI agents like **BI Genius** to recognize multiple ways users might refer to the same data field. This makes it easier for AI to return relevant insights even when users don't use exact field names.

Field Name:	Synonyms:
Customer ID	Client ID, Account Number, Customer Number
Total Revenue	Sales, Turnover, Earnings
Order Date	Purchase Date, Transaction Date

✅ Example Scenario:

A user asks: "What are our total sales this quarter?"

- If the data model only has "**Total Revenue**", the AI might not match it correctly.
- With "**Sales**" and "**Turnover**" added as synonyms, the AI correctly maps the query to the **Total Revenue** field.

A different user asks: "Show me transactions by client ID"

- If the model only has "**Customer ID**", the AI may struggle to understand the request.
- By adding "**Client ID**" and "**Account Number**" as synonyms, the AI easily maps the query to the correct field.

How to Add Synonyms in Power BI:



1. Open **Power BI Desktop**



2. Go to **Model View**



3. Select a table or field



4. In the **Properties pane**, find **Synonyms**



5. Add alternative names users might use for that field

✅ Field Descriptions: Giving AI and Users Context

Field descriptions provide extra clarity about what a field represents, making it easier for AI and business users to understand its purpose.

Field Name	Description
Total Revenue	Total revenue generated from all transactions, excluding refunds.
Customer ID	Unique identifier for each customer. Used to join with the Customers table.
Order Date	Date when the order was placed. Used for time-based analysis.

Example Benefits:

- If a user asks *"What is our total revenue?"*, the AI can refer to the **field description** to ensure it's pulling data correctly.
- Business users who are unfamiliar with the data model can hover over a field in Power BI and see a short description explaining what it contains.

How to Add Descriptions in Power BI:

1. Open **Power BI Desktop**

2. Go to **Model View**

3. Select a table or field

4. In the **Properties pane**, find **Description**

5. Enter a **clear, concise explanation** of what the field represents

Why This Matters for AI Agents Like BI Genius

- **Synonyms ensure AI understands user queries** even when phrased differently.
- **Field descriptions provide AI with context**, reducing misinterpretations.
- **Users get clearer, more accurate responses** without needing deep knowledge of the data structure.

By leveraging **Power BI Synonyms and Field Descriptions**, organizations can create a **more intuitive, AI-friendly semantic model**, ensuring that AI-powered BI agents **deliver fast, accurate, and business-relevant insights** to all users—regardless of their data expertise.

The Future of AI-Driven Analytics Starts with Your Data Model

AI agents are transforming the way users interact with data. However, their effectiveness depends **entirely on the quality of the underlying semantic model**.

By implementing **clear naming conventions, logical data modeling, optimized measures, and proper documentation**, organizations can unlock the full potential of AI-driven BI insights.

✅ Next Steps:

- ✓ Review your **Power BI Semantic Model** for naming consistency.
- ✓ Ensure your **data relationships** are logical and easy for AI to interpret.
- ✓ Define **clear business metrics** and pre-built calculations.
- ✓ Add **metadata, synonyms and descriptions** to key fields and measures.

With these best practices, your organization will be AI-ready, ensuring that tools like BI Genius deliver accurate, actionable, and user-friendly insights.