

Unlocking the Full Power of Power BI

WITH AUTOMATED DATA LINEAGE



Octopai's Game-Changing Innovation in the Microsoft Fabric Ecosystem

Great decisions demand great data. To truly reach BI greatness, your data needs to be fast, accurate, and trustworthy, **Octopai** ensures your Power BI ecosystem delivers—every time.

Imagine a BI environment where every transformation, every dataflow, and every measure is fully visible, from start to finish. With Octopai, you don't just get a tool—you get peace of mind, knowing your data is always reliable, traceable, and ready for action.

A Unified View. No More Guesswork.

Power BI is powerful. But over time, your data sources multiply and your models get complex, keeping track of everything can feel impossible. Octopai changes that.

- Complete transparency from data ingestion to final report.
- Full control over every dataflow, measure, and transformation.
- Proactive insights to catch issues before they happen.

The Growing Complexity of Data Ecosystems

As organizations increasingly adopt **Power BI** to generate insights from their data, the complexity of managing, governing, and ensuring the integrity of data grows. With the introduction of **Microsoft Fabric**, Power BI now integrates with a broader ecosystem, including **Azure Databricks** and other tools. While this adds power and flexibility, it also raises new challenges for BI teams.

Octopai offers a comprehensive solution, providing full end-to-end lineage across the entire data lifecycle ecosystem with minimal effort. Seamlessly integrated with Power BI, it transforms how BI teams manage data governance, compliance, and impact analysis within the Microsoft ecosystem through automation.

Navigating Power BI Projects: Managing Complexity in the Fabric Ecosystem

Power BI Projects form the foundation of most BI strategies. However, as organizations scale their use of Power BI within the Microsoft Fabric environment, the complexity of tracking data lineage and managing interdependencies across projects increases.

Octopai's data lineage solution provides full visibility into the entire lifecycle of Power BI Projects, from raw data ingestion to the final dashboard. With Octopai, BI teams no longer have to struggle with the limitations of native Power BI tools, which are often insufficient to handle the vast data flows and transformations that occur as projects grow in scale.

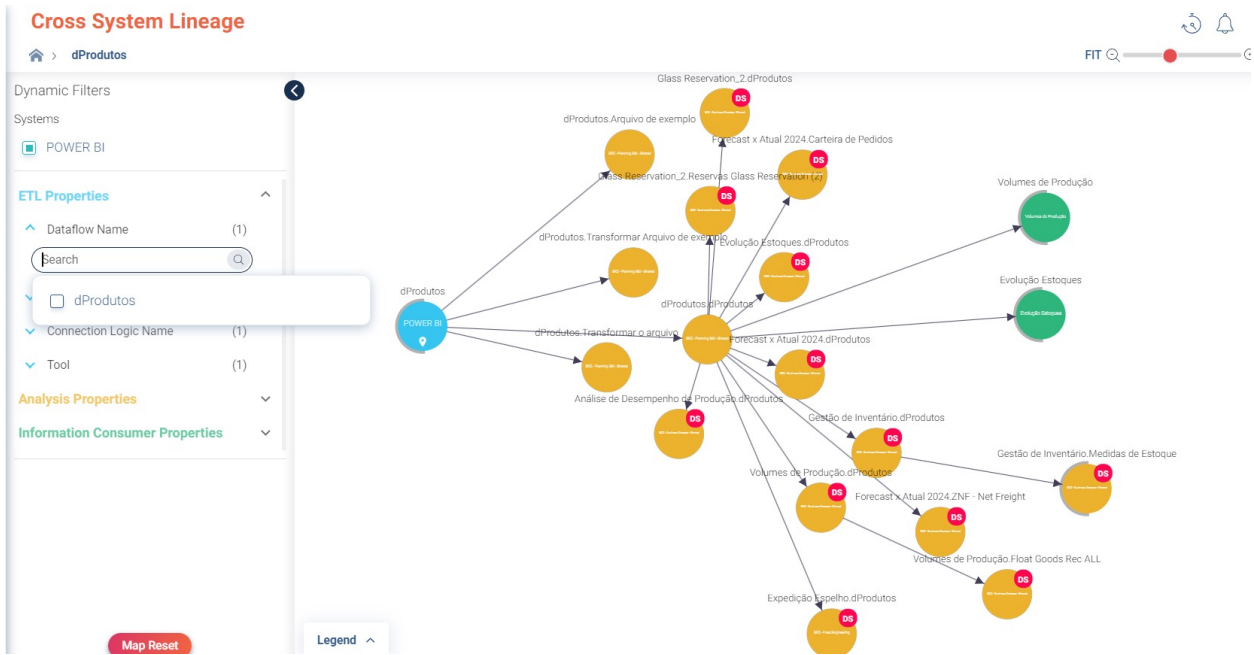


Key Insight: **Seamless Cross-System Data Lineage**

Octopai bridges the gap between Power BI's built-in lineage tools and the broader ecosystem, ensuring BI teams can track every transformation, across multiple ETLs and data storage systems. As Power BI Projects evolve, dependencies between Dataflows, composite models, and custom reports become more complex. Octopai's solution simplifies this by automating lineage tracking, ensuring data integrity across multiple systems, even as they scale.

Uncovering Hidden Challenges in Power BI's Dataflows and Measures

Power BI's **Dataflows** are central to its ETL processes, simplifying how data is transformed and prepared for analysis. However, native tools often fall short in providing the depth of visibility needed for large, intricate dataflows that span multiple systems and sources. Additionally, the proliferation of **report-native measures**—custom calculations created at the report level—further complicates lineage tracking, potentially introducing hard-to-detect errors into business logic and reports.



Through Octopai’s automated lineage solution, BI teams gain clear insight into how every dataflow and measure interacts with the broader ecosystem. With full traceability from **ingestion through Dataflows** to final reporting, Octopai ensures that no transformation goes unnoticed.

What’s at Stake: **Business Logic and Compliance Risks**

When report-native measures are created, renamed, or built upon, business logic can break, leading to misinformed decisions. Without proper lineage tracking, understanding how these measures evolve—and how they impact downstream reporting—is nearly impossible. Octopai’s comprehensive visibility eliminates this uncertainty, allowing BI teams to monitor every transformation across models, ensuring that data remains accurate and consistent across all reports.

Beyond Display Names: Tracking the True Data Journey in Power BI

A key challenge within Power BI's **semantic models** lies in how **display names** are used to represent data transformations. While these names provide clarity at the report level, they often mask the true lineage of the data. As a result, BI teams may struggle to trace data back to its original source, especially when measures are renamed or when multiple layers of transformation occur.

The image shows a Power BI interface with a data model on the left and a SQL script on the right. The data model includes tables like 'glass_count' and 'GLASS_COUNTS'. The SQL script is as follows:

```
1 --Server:
2 --DataBase:
3 --Schema:dbo
4 --ShareEntity:GLASS_COUNTS
5 --Provider:TABLE
6 --ObjectId:c76afff7-df5a-4e5b-
7 9391-81efcd9cb40
8
9 select -float_value +
10 lag(float_value, 1) over
11 (partition by tag_code order by
12 time_utc desc) as glass_count,
13
14 , equipment_name
15
16 from auto.v_historian_smart where
17 tag_code in (
18 'HU_75_T_FURN_STAT_FurnacePGC_COUN
19 T_GLAS_JW', 'HU_76_T_FURN_STAT_Furn
20 acePGC_COUNT_GLAS_JW',
```

Your Data, Clear and Simple

In Power BI, names change, models shift, and reports evolve. But that doesn't mean your data should get lost along the way. Octopai ensures that every change, big or small, is mapped and monitored.

- **See the full story** of every measure, no matter how it's renamed.
- **Keep business logic intact** across transformations.
- **Stay compliant** with industry regulations effortlessly.

Octopai provides a unique advantage here, allowing BI teams to view the full lineage of data transformations—even when display names change or measures are renamed. This not only ensures transparency across the entire data pipeline but also protects against **ambiguous reporting** that can occur when BI teams rely solely on display names to track transformations.

Power BI's Composite Models: Governance and Lineage Challenges

Composite models within Power BI allow for the combination of data from multiple sources, offering immense flexibility. However, this flexibility introduces governance challenges as data is drawn from disparate systems, and business logic can break when changes are made upstream. Monitoring these complex transformations becomes difficult without a solution that provides comprehensive lineage tracking.

Octopai steps in by offering complete end-to-end visibility across **composite models**, enabling BI teams to manage governance effectively. With Octopai, teams can ensure that business logic is preserved, even when transformations occur across multiple models and data sources. The result is **cleaner, more reliable reports** and **simplified governance** across the entire Power BI ecosystem.

Impact Analysis in Power BI: Avoiding Reporting Pitfalls

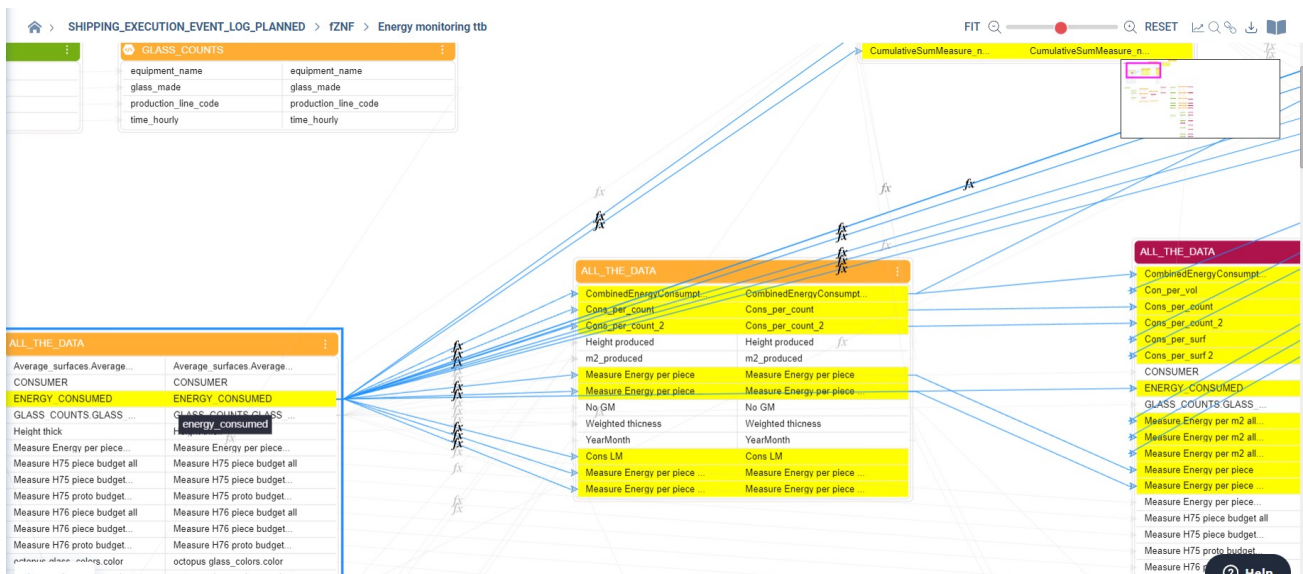
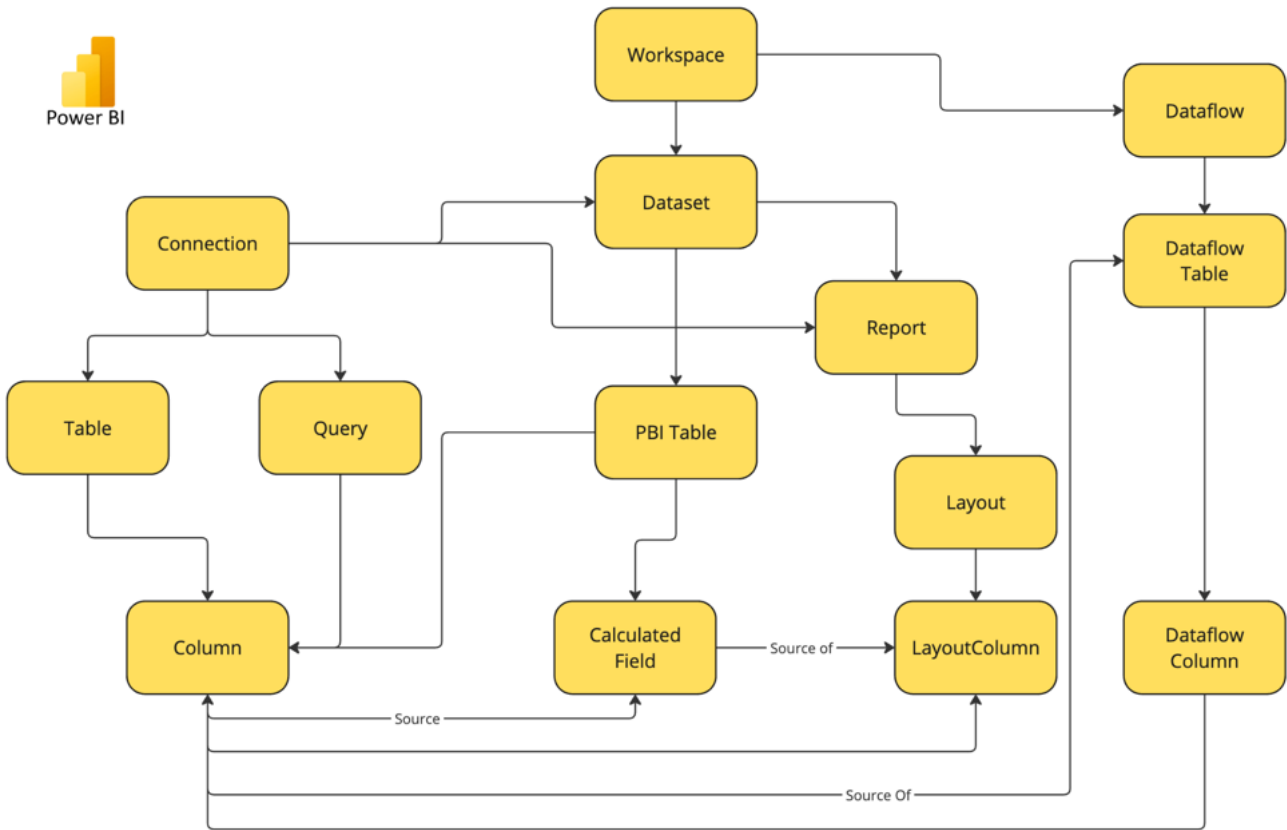
BI **Dataflows** affect downstream reports and dashboards. Without proactive impact analysis, these changes can go unnoticed until they cause significant disruptions in business reporting.



Know Your Impact. Before It Hits.

When your data flows smoothly, so does your business. With Octopai's proactive impact analysis, you'll never be caught off-guard by unexpected changes.

- **Visualize how data changes** impact downstream reports.
- **Resolve issues faster**, before they disrupt decision-making.
- **Stay ahead** of potential data errors.



Octopai's **impact analysis** capability addresses this by enabling BI teams to trace how changes in data transformation affect the entire pipeline. With Octopai, teams can anticipate and mitigate risks before they lead to reporting errors, ensuring that the integrity of Power BI reports is maintained at all times. By using Octopai as a tool for making strategic changes, SLAs can be more effectively communicated and adhered to, improving overall accountability and performance across the data lifecycle.

Case in Point: Proactively Managing Data Transformations

Octopai goes beyond simply identifying changes—it provides BI teams with the tools to proactively monitor transformations, ensuring that any potential issues are caught early. By offering end-to-end lineage and impact analysis, Octopai allows teams to deliver more accurate, timely reports that drive better business decisions.

Built for the Future of BI

```
PreviousValue, ("Index"), "PreviousValue", JoinKind.LeftOuter),
ExpandedTable = Table.ExpandTableColumn(MergedTable,
"PreviousValue", ("float_value"), ("Previous_float_value")),
11
12
13 // Step 4: Calculate glass_count
14 GlassCount = Table.AddColumn(ExpandedTable, "glass_count", each if
[Previous_float_value] = null then null else - [float_value] +
[Previous_float_value]),
15
16 // Step 5: Remove the Index and Previous_float_value columns
17 RemovedColumns = Table.RemoveColumns(GlassCount, ("Index",
"Previous_float_value")),
18
19 // Step 6: Filter for non-negative glass counts
20 FilteredTable = Table.SelectRows(RemovedColumns, each [glass_count]
>= 0 or [glass_count] = null),
21
22 // Step 7: Group data by hour, production_line_code, and
equipment_name
23 GroupedTable = Table.Group(FilteredTable, ("production_line_code",
"equipment_name", "time_utc"),
24 ({"glass_made", each
List.Sum(List.Select({[glass_count], each _ >= 0}), type number))),
25
26 // Step 8: Truncate time_utc to the hour level
27 AddedTimeHourly = Table.TransformColumns(GroupedTable, ({("time_utc",
each DateTime.From(DateTime.ToText(_, "yyyy-MM-dd HH:00:00")), type
datetime))),
28
29 // Step 9: Sort by time_hourly in descending order
30 SortedFinalTable = Table.Sort(AddedTimeHourly, ({("time_utc",
Order.Descending)))
31 in
32 SortedFinalTable
```

Business Interpretation and Insights

Purpose
The query aims to analyze the production data from a manufacturing plant, specifically focusing on glass production across various production lines and equipment. The goal is to calculate the hourly glass production count, providing insights into the operational efficiency and productivity of different production lines and equipment.

Data Sources
- **Database Server**: `ServerName`
- **Database Name**: `DatabaseName`
- **Table**: `auto_v_historian_smart`

Key Metrics
- **glass_count**: The count of glass produced, calculated based on the difference between consecutive float values.
- **glass_made**: The total count of glass produced per hour, per production line, and per equipment.

Business Insights for Analysts

- Operational Efficiency**: By aggregating glass production data hourly, analysts can identify peak production times and potential bottlenecks.
- Performance Comparison**: The data allows for comparison between different production lines and equipment, helping to identify which are performing optimally and which may require maintenance or optimization.
- Trend Analysis**: Sorting the data by time allows for trend analysis over different periods, enabling better forecasting and planning.
- Quality Control**: Filtering out non-good status records ensures that only valid production data is analyzed, maintaining the integrity of the insights.

Power BI is evolving. Your data needs are growing. And Octopai is here to help you stay ahead, effortlessly managing complexity in a way that feels simple.

- **Fully automated** data lineage across the Microsoft Fabric ecosystem.
- **No manual tracking**, just seamless data transparency.
- **Govern with confidence**, now and in the future.

Inner System Lineage

SHIPPING_EXECUTION_EVENT_LOG_PLANNED

Planned_Truck_Shipme...

- Activity
- Custom
- DELIVERY_NB
- PLANNED_END_SHIP_DA...
- REAL_END_SHIP_DATE
- TimeStamp

RAW_DATA

- CARRIER_CODE
- Count
- Custom
- DELIVERY_NB
- Duration actual arrival pla...
- Duration planned actual s...
- END_UNLOADING_DATE_...
- END_UNLOADING_DATE_...
- END_UNLOADING_TIME_...
- FACTORY_CODE
- INCOTERM_CODE
- ORDER_NB
- PICKING DATE
- PICKING_END_DATE
- PLANNED_END_LOAD D

Planned_Truck_Shipme...

- Filtered rows 2
- Activity
- Custom
- TimeStamp
- CaseId
- DELIVERY_NB
- PLANNED_END_SHIP DA...
- REAL_END_SHIP_DATE
- Changed column type

RAW_DATA

- CARRIER_CODE
- Custom
- START_UNLOADING_DAT...
- DELIVERY_NB
- Duration actual arrival pla...
- Duration planned actual s...
- Changed column type 7
- END_UNLOADING_DATE_...
- END_UNLOADING_DATE_...
- END_UNLOADING_TIME_...

Properties

Operational Metadata

Expression

```
1 = Table.AddColumn("Changed column type 7", "END_UNLOADING_DATE_TIME", each Text.Combine([END_UNLOADING_DATE_CUSTOMER_SITE], [END_UNLOADING_TIME_CUSTOMER_SITE], " "), type text),
```


How Octopai Feels Different

- **It's fast.** No more manual tracking. Octopai gives you insights instantly.
- **It's intuitive.** Understand every piece of your data without the guesswork.
- **It just works.** Octopai integrates directly into Power BI, with no interruptions to your flow.

Insights and Key Takeaways: Power BI at its Best with Octopai

- ✓ **Seamless Data Lineage Across the Microsoft Fabric Ecosystem:** Octopai provides complete, automated data lineage, ensuring BI teams have full visibility over dataflows and transformations as they scale.
- ✓ **Comprehensive Governance:** By tracking every transformation across **composite models**, **Dataflows**, and **report-native measures**, Octopai simplifies governance, ensuring compliance with industry standards like GDPR and HIPAA.
- ✓ **Proactive Troubleshooting:** With impact analysis, BI teams can detect and resolve data issues before they disrupt critical reports, delivering more reliable business insights.
- ✓ **AI Confidence with Trusted Data:** Octopai ensures that the data feeding into Power BI's AI models is clean and traceable, empowering BI teams to rely on their insights confidently.
- ✓ **Future-Proofing Power BI:** As Power BI Projects and the Microsoft Fabric ecosystem evolve, Octopai ensures that data governance and lineage tracking remain intact, supporting BI teams through ongoing growth.

Conclusion:

Power BI, Perfected with Octopai

With Octopai, Power BI becomes even more powerful. You'll have the insights, control, and confidence to let your data lead the way, without ever worrying about what's happening behind the scenes. It's not just data lineage. It's the future of BI, built for you.

As organizations continue to rely on Power BI to drive business insights, the need for comprehensive, automated data lineage is paramount. Octopai transforms how BI teams manage complexity within the Power BI and Microsoft Fabric ecosystems, providing unparalleled transparency, proactive impact analysis, and seamless governance.

With Octopai, BI teams are empowered to not only navigate the challenges of modern data ecosystems but to lead the way with precision, trust, and confidence in their data.

Embark on your journey to cloud transformation with the power of data lineage. Leverage the advanced capabilities of Octopai's data lineage tools to navigate the complexities of cloud migration.

Ensure your migration strategy is not only technically sound but also strategically aligned with your business objectives.

Start transforming your data management approach today for a successful and empowered future in the cloud.

[See how Octopai can ensure Visibility, Compliance and Cost Reduction](#)

[Schedule a Demo](#)

