

Intelligent Supply Chain Management Accelerator

Forecast demand and optimize inventory with
Azure Machine Learning and the Microsoft Power Platform



Manage response to supply chain trends

Readiness during uncertainty and rapid change can yield opportunity

Evolving, unique needs	Fast-moving demands	Constant disruption	Accelerated tech investment
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Targeted, agile, and flexible supply chain solutions should be a **#1 priority** for successful organizations.



67% of organizations say meeting customer expectations is a critical force impacting supply chains.



80% of organizations prioritize building a responsive supply chain.



6 in 10 organizations plan to invest in technology to bolster supply chain processes, data synthesis, and analysis capabilities.



New supply chain pressures

Limited insight into supply and demand data challenges business success



Slow and uninformed decision making due to lack of sophisticated, scalable, and high-quality forecasting for inventory and demand.



Balancing customer satisfaction while minimizing carrying, storage, and maintenance costs.



Strained supply chains caused by unexpected but imminent events, amplifying urgency for modern solutions.



Increased technology costs and limited ROI when solutions aren't finely tuned to business needs.



Inability to scale without technology to enable aggregation and analysis of growing volume of supply chain data.



Build a resilient supply chain

Future proof your business with a demand-driven, customer-centric supply chain

Build consumer loyalty
through a more seamless,
connected customer experience.

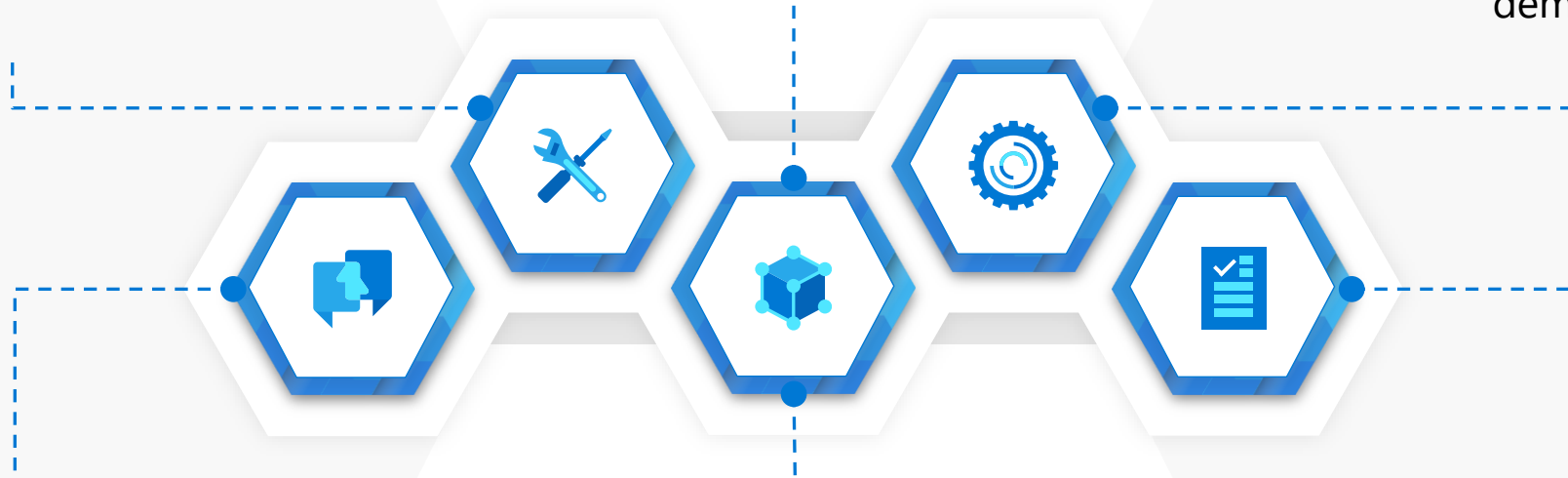
Better predict and prepare
for unexpected supply
chain events.

**Maximize operational
efficiencies and reduce costs**
with inventory aligned to shifting
demand.

Gain a competitive edge
with customized, quick
deployment.

**Boost accuracy, execution
speed, and scalability**
of inventory forecasting and visibility.

Improve decision making
through user-friendly analysis
and insights into your data.



Optimize inventory and demand forecasting

Leverage data in a meaningful way to meet and exceed customer expectations

The **Intelligent Supply Chain Management Accelerator** helps optimize inventory and demand forecasting and innovatively integrates:

Azure Machine Learning (AML) to validate, analyze, predict, optimize on data

Microsoft PowerApps to streamline cloud-based development

Microsoft Power BI for user-friendly data visualization

A distributed OSS computing framework, **Ray.io®**, for scalability



Improve decision making in evolving conditions with accurate and fast demand forecasting and inventory optimization.



Quickly bring the AI/ML business application to life within your supply chain through innovative integration of Microsoft solutions.



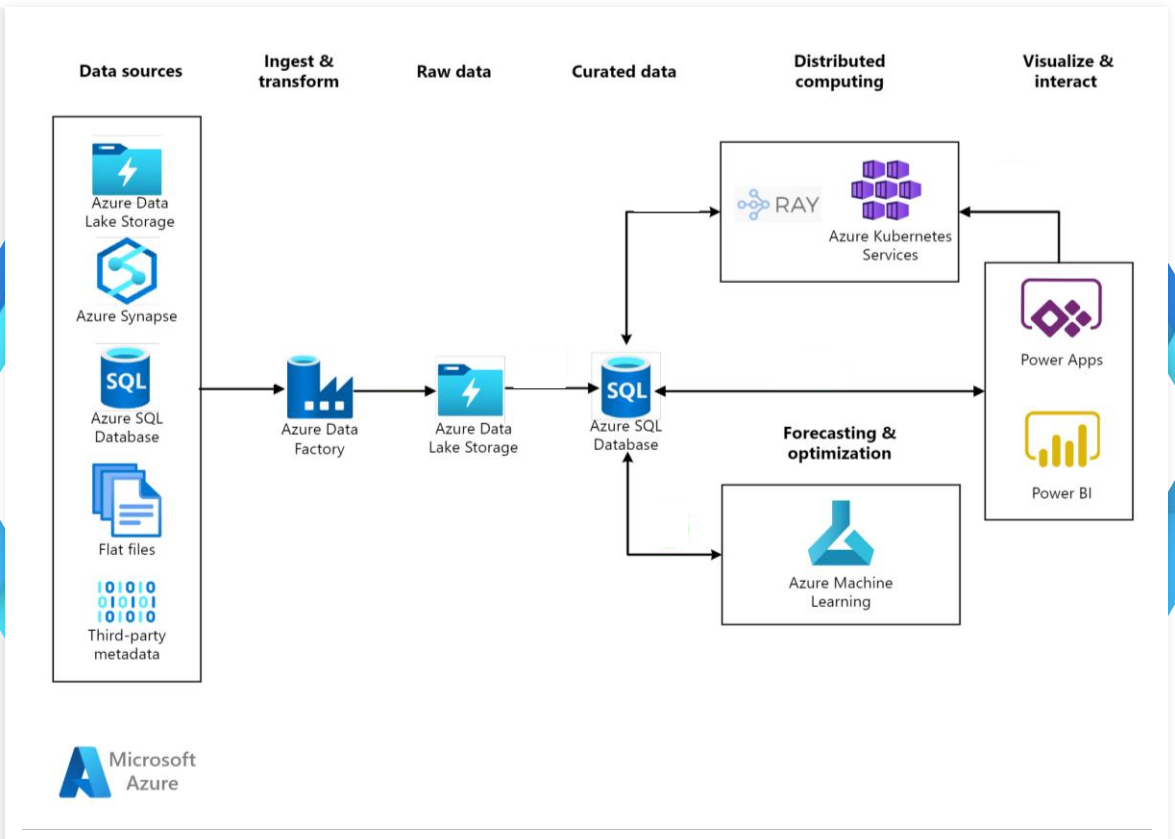
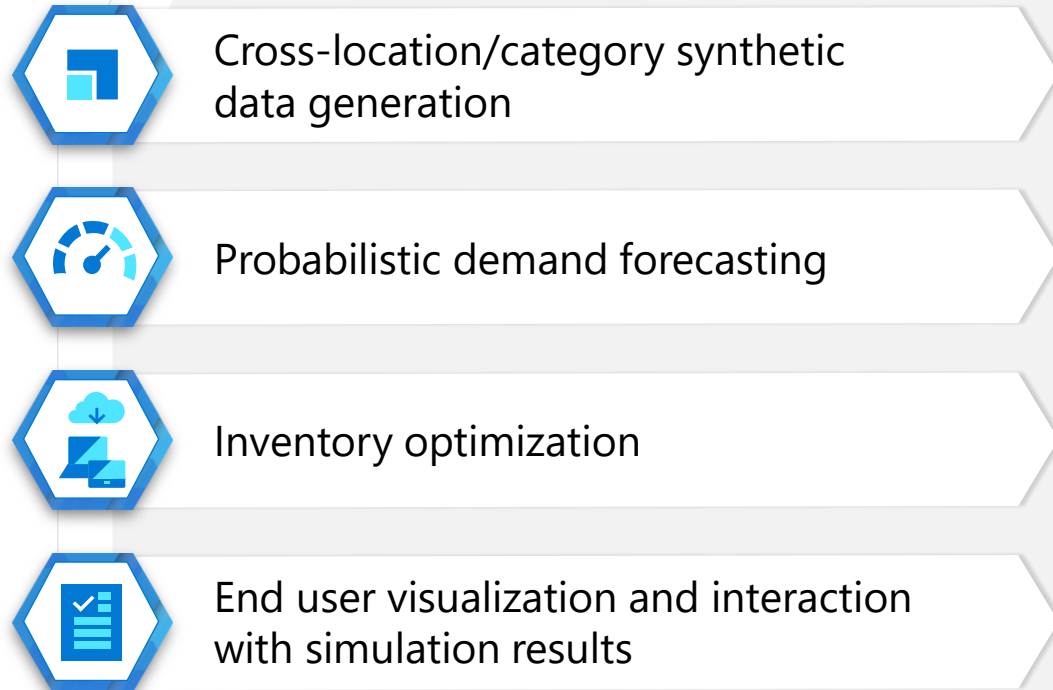
Perform optimization simulation at scale with new parallel computing technology.



Boost risk prediction capabilities and scenario modeling using multivariate probabilistic forecasting.

Architecture and data flow

Practical, scalable, and manageable solution for implementing inventory optimization architectures





Use cases

Analyze product information across locations to **assess demand levels and decrease inventory costs.**

Identify the ideal amount of inventory to have in stock.

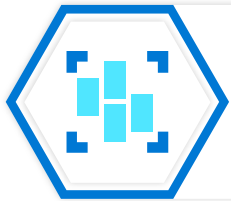
Predict how seasonal changes or other events might affect sales and restocking options.

Forecast the prices of commodities across locations and sales channels by using historical transaction data in a retail context.

Analyze stock variability and sales by using historical demand data to forecast demand in future periods, across customers, and by location and sales channel.

Enhanced inventory and supply chain demand forecasting

Integrated AI and cloud app solution boosts scalability, flexibility, and inventory optimization



Situation

Accurate forecasting of customer demand is essential to **optimizing inventory levels and reducing costs** for a US-based discrete manufacturing company with eight global subsidiaries.

Without these capabilities, **business-critical decision making** is impacted and becomes especially problematic during supply chain disruption.



Solution

To quickly address forecasting for inventory and demand, we implemented a **comprehensive integrated architecture** including Azure Machine Learning, a data platform, Microsoft Power Apps and Power BI, Kubernetes, and an OSS framework.

This provides **robust, distributed scientific-computing capability** that meets the customer's desired business need for forecasting and sensitivity analysis for hundreds of items in a few minutes.



Impact

Scalable, fast, and accurate forecasting for inventory and supply-chain demand and inventory optimization has overcome significant business challenges and is leading to optimal outcomes—including **analysis of data more than 100x faster** than existing solutions.

The new solution has **improved user experience** among the operations research team as well as decision makers.

Accelerate your journey

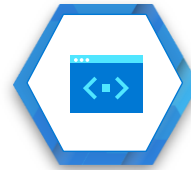
Implement distributable supply chain forecasting and optimization solutions



Kick-off

Learn more about the **Intelligent Supply Chain Management Accelerator** and view a demo.

30 minutes



Proof of value

Optional solution code walk-through and prototype based on sample data for testing.

1-3 days



Proof of concept

A proof of concept (PoC) is built with customer's data with support of technical specialists and partners.

MVP is scaled to deployment.

2-5 weeks

Transform your supply chain

Quickly implement distributable supply chain forecasting and optimization



Perform inventory optimization **at scale** using new parallel computing technology.



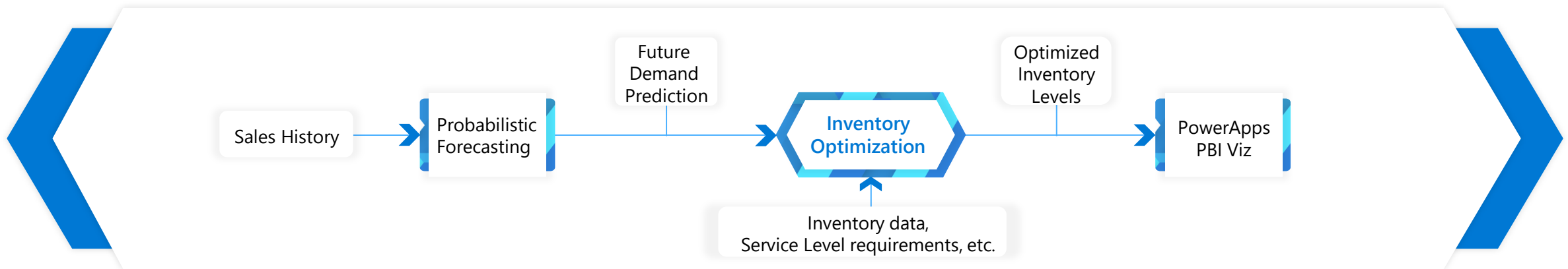
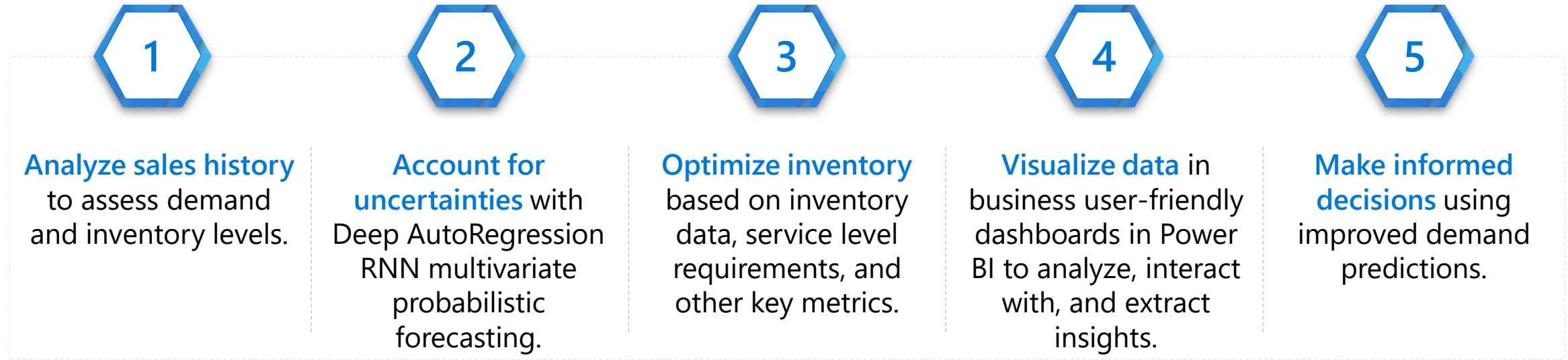
Leverage **advanced multivariate probabilistic forecasting** for multiple items.



Enable business users and analysts to **easily visualize and interact with data** with an innovative integration of solutions.

Accelerator solution details and workflow

Sophisticated methodologies for high-quality forecasts



Dashboard

Power Apps



Supply Chain Management Solution Accelerator



Github



How to use



View Power BI
Dashboard



Run



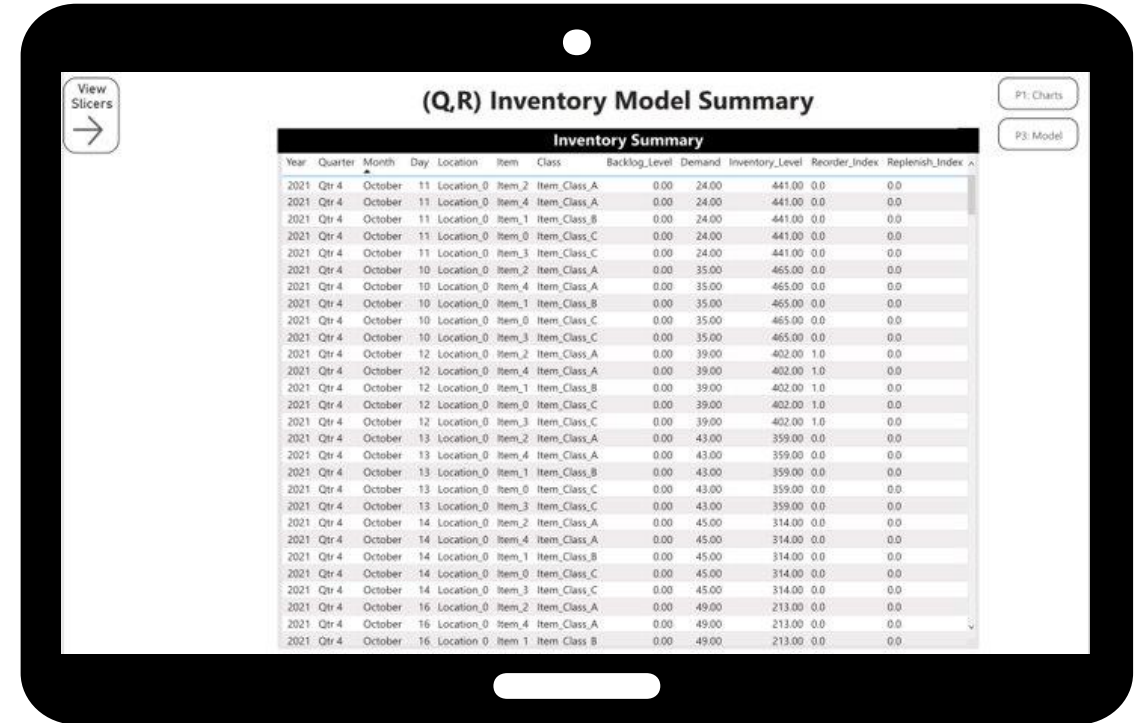
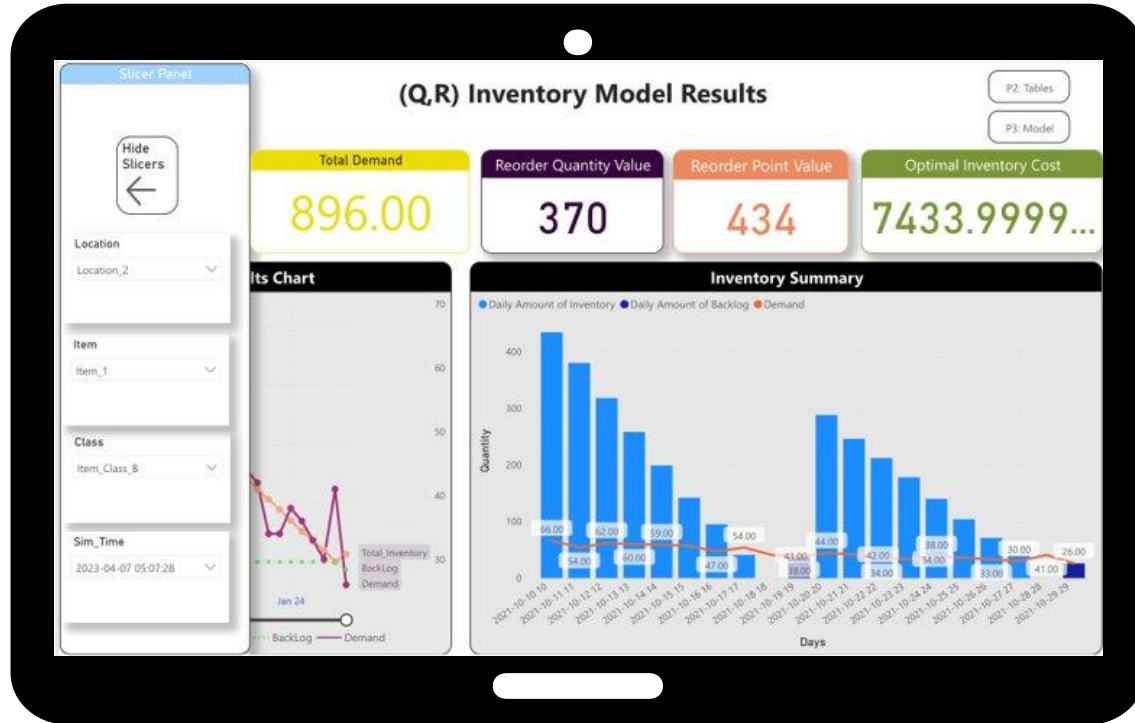
MSUS Azure Accelerators

Accelerating Customer's Data Journey



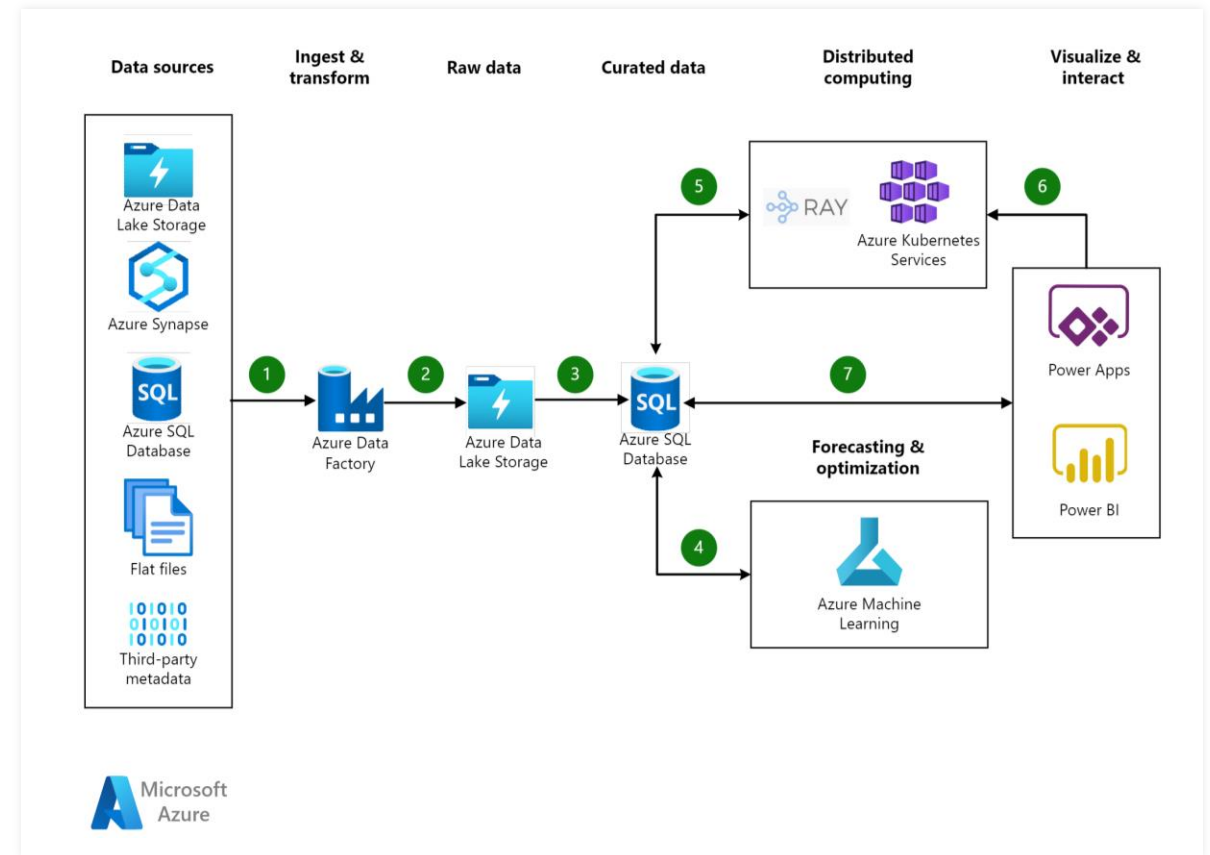
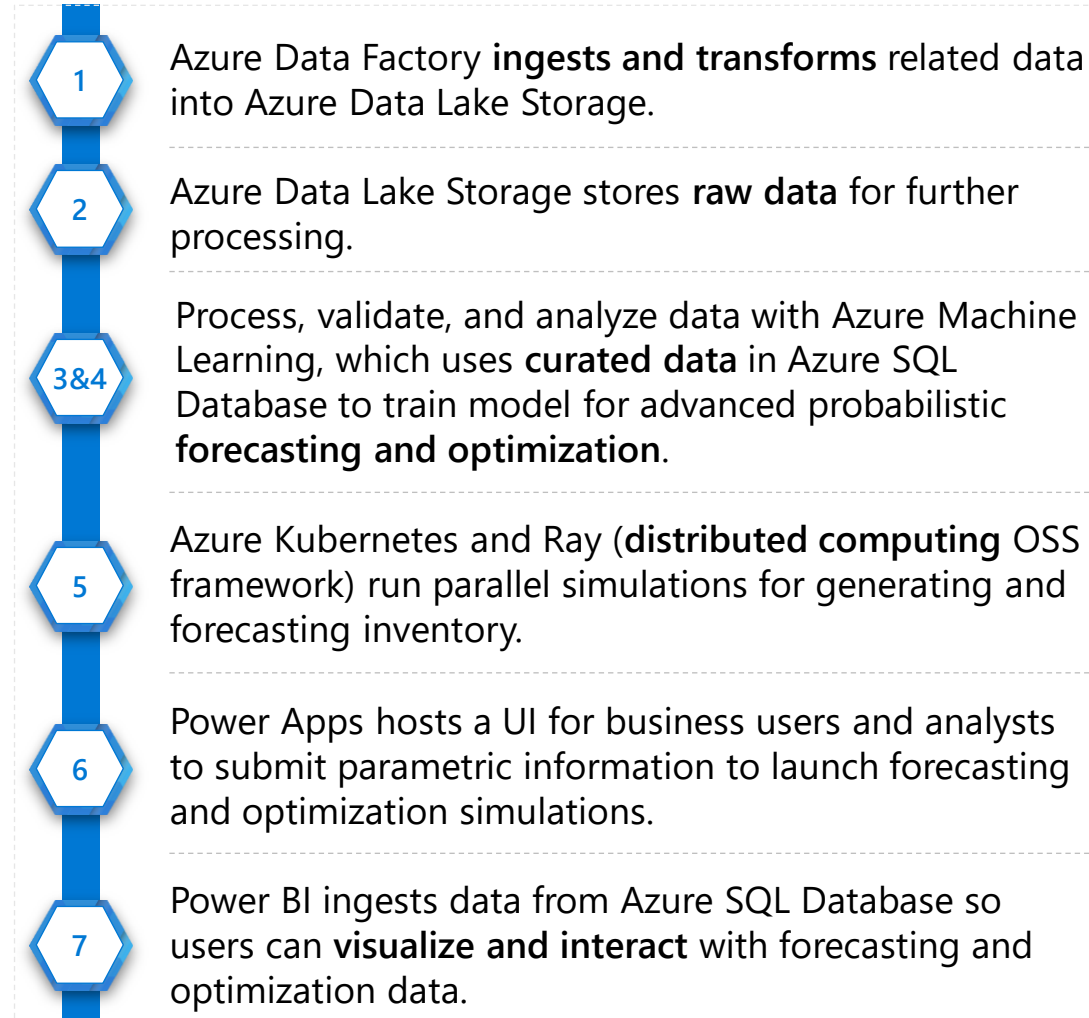
Dashboard

Power BI

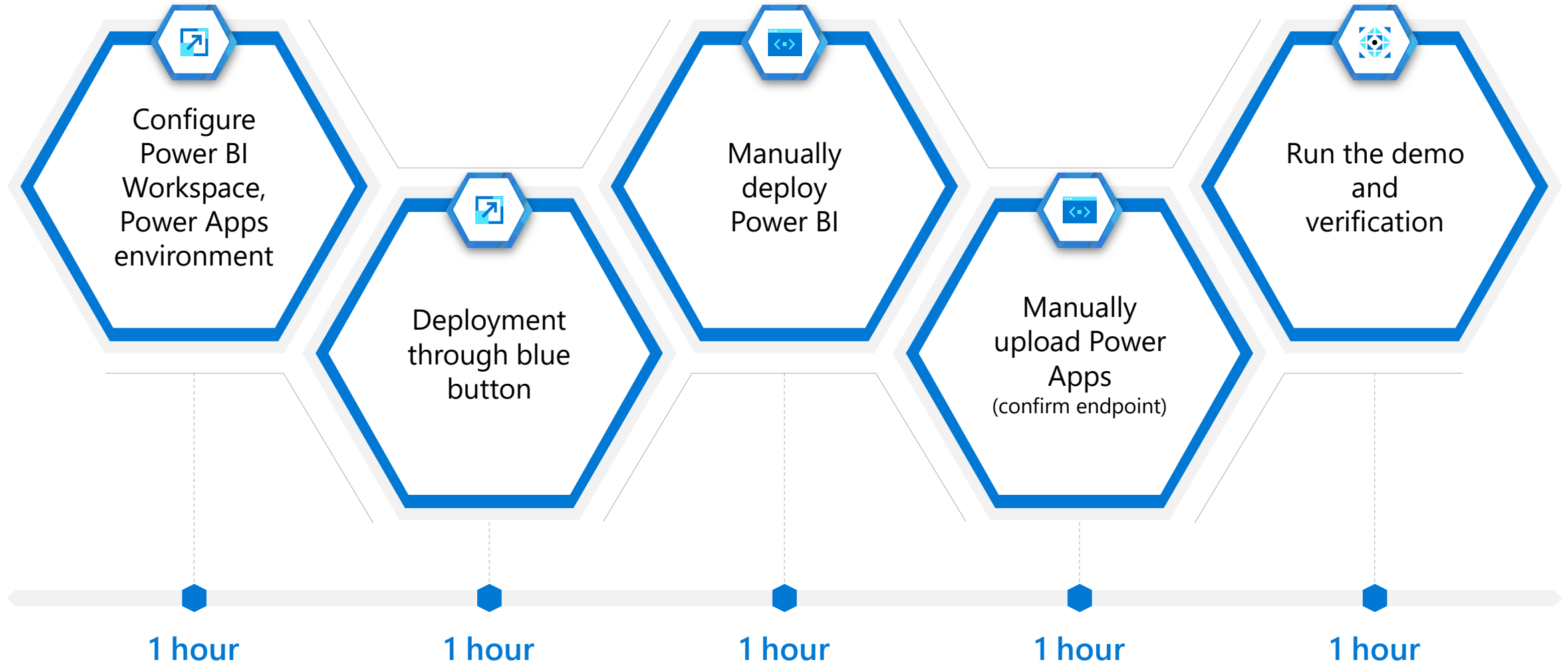


Architecture and data flow

Practical, scalable, and manageable solution for implementing inventory optimization architectures



Next steps to AI-powered demand forecasting and inventory optimization



Thank you

