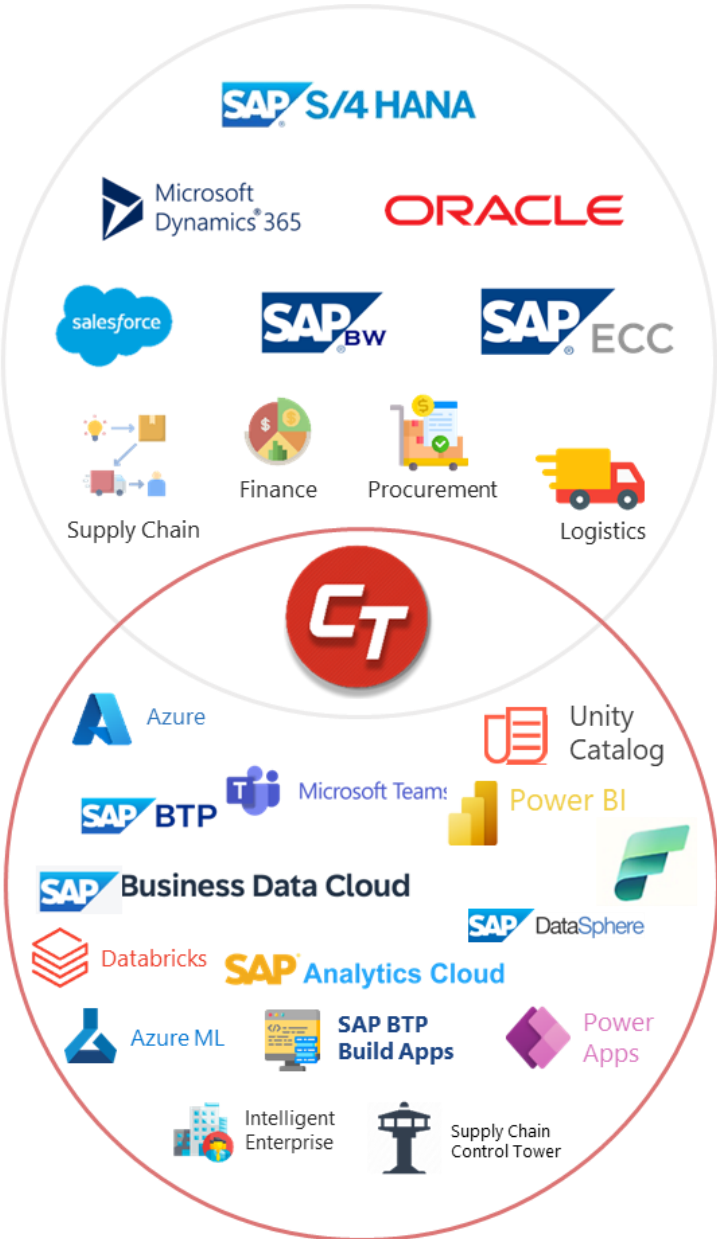




Inventory Optimization with Microsoft Copilot Studio: 8-Week Implementation

Traditional Enterprise Meets Modern Cloud Solutions



Microsoft
Solutions Partner

Microsoft AI
Partner of the Year - Global

Microsoft Rising Star
Partner of the Year - APAC

Microsoft Country
Partner of the Year - India

Microsoft AI
Partner of the Year - India

Azure Data AI
Partner of the Year - Malaysia

databricks
Elite Partner

Databricks
Partner of the Year - APJ

Partnerships

Microsoft
Solutions Partner

databricks
Elite Partner

SAP
Silver Partner

sigma

aws
PARTNER
Advanced Tier Services

3000+
Employees

1550+
Azure
Certifications

500+
Data Scientist
Certifications

1000+
Databricks
Certifications

**Advanced
Specialization**

- AI & Machine Learning
- Advanced Analytics
- Infra Migration to Microsoft Azure
- Kubernetes
- Cloud Security
- SQL server and Windows Migration server and Windows Migration

Industries We Serve

Manufacturing

Retail & CPG

Financial Services

Energy & Sustainability

Healthcare & Life Sciences

Media & Entertainment


Education

Global Presence


Americas | Europe | Middle East | APAC (India, SEA, Australia, Japan)




Data, AI, Apps & Infra




Big Data (ADX, Cosmos)




Fabric




Open AI




Cognitive Vision




Databricks




AI/ML




Azure VM




Azure




DC Migration




VPN Gateway




Load Balancer




SQL Database



Application Modernization



Azure DevOps




Super Apps


Reduced Cost, Faster Development, Insightful Data




Security




Identity Governance




Microsoft Entra ID




Multi-Factor Authentication




Endpoint Management




Azure Sentinel




Zero Trust




Defender for Cloud




Defender for Cloud Apps




Defender for Endpoint



Microsoft Purview



Azure Policy




Defender XDR


Secure your Data and your business




Modern Workplace & Business Apps




Microsoft Viva




CoPilot




SharePoint




Microsoft Teams




Power Apps




Power Platform



Power BI



Power Automate RPA



Microsoft Dynamics 365

Enhanced productivity, ease of business

Previous Landscape



Process- Traditional inventory planning relied heavily on spreadsheets, emails, and manual collaboration across procurement, warehouse, and supplier teams — resulting in inconsistent visibility and delayed replenishment decisions.



Business Challenges

- Reactive stock management leading to frequent stockouts or overstocking
- Manual data consolidation from ERP, supplier, and logistics systems
- Lack of end-to-end visibility into demand, supply, and shipment timelines
- High dependency on planner judgment and offline follow-ups
- Limited ability to simulate scenarios or handle supplier exceptions proactively

Celebal’s Solution



Solution – Implemented a Copilot Studio Multi-Agent System that autonomously handles forecasting, replenishment, supplier evaluation, logistics, and exceptions to streamline inventory decisions and empowers planners to achieve faster, data-driven, and transparent inventory optimization with human oversight.



Business Impact

- 60–70% faster inventory planning and decision cycle
- Reduced stockouts and excess inventory through proactive forecasting
- Improved supplier and logistics coordination with automated recommendations
- Enhanced visibility and auditability via decision-trace and summary dashboards
- Human-in-loop governance ensuring control and explainability



Personas

- Inventory Planner
- Supplier Relationship Manager
- Procurement Manager
- Logistics Coordinator



Integrations

- Power Automate
- Microsoft Teams
- MS Outlook
- Dataverse



Industry

Cross Industry(Manufacturing / Retail / CPG / Energy)

User Experience Layer

Teams/Chat Interface
End-user conversations & Approvals
routed via Inventory Agent

Observability
Audit trail • Metrics • Alerts • Error
handling

Outlook
End-user notification & Alerts

Exception Handler Agent

Continuous Monitoring & Anomaly Detection

- Monitors all sub-agents in real-time during the execution chain
- Detects failures and constraint violations such as API timeouts, data unavailability
- Tracks performance thresholds and flags warnings

Automated Recovery & Fallback Orchestration

- Re-triggers affected sub-agents with new parameters to generate fallback plans
- Executes automatic recovery for low-impact exceptions

Alert Notifications

- Generates exception alerts
- Logs all exceptions and recovery actions for audit trails.

Inventory Optimization Agent

- **Receives and interprets** natural language queries from users in the chat interface
- **Triggers the sequential chain** of sub-agents based on user request

- Consolidates all agent outputs into a summary card
- Provides human approval checkpoint with options

Sequential Orchestration

1. Forecasting Agent

- Predicts demand using historical sales and trends
- Identifies stockout or overstock risks

2. Replenishment Agent

- Calculates optimal reorder quantity
- Applies lead time, MOQ, and buffer stock rules

3. Supplier Evaluation Agent

- Compares suppliers on cost, lead time, reliability
- Selects best-fit supplier with reasoning trace

4. Logistics Agent

- Evaluates carriers and delivery routes in parallel
- Suggests optimal mode balancing cost vs. ETA

Data

- Data Storage
- SLA Tracking Data
- Master Data Management
- Data Validation

Governance

- Authentication Logs
- Analytics & Insights
- Security & Privacy
- Compliance logs

Unified AI agent managing your entire inventory lifecycle — forecast to fulfillment.



Inventory Optimization Agent




Role

Serves as the main conversational Copilot that interacts with the user, orchestrates all sub-agents.

What it does

- Engages with the user via natural language
- Orchestrates execution of sub agents
- Aggregates each agent's output into a unified result card.
- Displays recommendations, cost summary, and supplier options for user approval or rejection.

Impact

-  Unified inventory control through one intelligent Copilot.
-  Improved transparency, accuracy, and audit readiness.
-  Reduced manual coordination between supply-chain teams.

Stages

- User request → Triggers sub-agents sequentially → Aggregates results → Presents summary in chat → Awaits user approval/rejection.



Supplier Evaluation Agent





Role

Selects the most suitable supplier based on performance and cost metrics.

What it does

- Fetches supplier profiles (mock data).
- Evaluates unit price, stock availability, on-time delivery %, and lead time.
- Chooses best-fit supplier and provides rationale.
- Hands off to Logistics Agent.

Impact

-  Better supplier selection accuracy.
-  On-time procurement performance.
-  Delays due to poor supplier choices.
-  Cost optimization and transparency.

Stages

- Triggered by Replenishment → Evaluates suppliers → Passes to Logistics Agent.



Inventory Forecasting Agent





Role

Predicts inventory demand using historical and trend data.

What it does

- Pulls historical sales and promotion data (simulated).
- Applies trend analysis to project 30/60/90-day demand.
- Identifies potential stockouts and calculates risk.
- Passes forecast data to Replenishment Agent.

Impact

-  Accurate demand planning with minimal manual effort.
-  Early visibility into potential stock shortages.
-  Smarter inventory decisions through data-driven forecasting.
-  Over-reliance on spreadsheets and human judgment.

Stages

Forecasting → Triggers Replenishment → Feeds Summary Card.

Sequential orchestration of specialized agents with event-driven exception handling and human-in-loop control.

Replenishment Agent





Role

Determines optimal reorder quantities and timing to maintain stock balance.

What it does

- Calculates reorder quantity with safety buffer.
- Considers MOQ, supplier lead time, and cost.
- Suggests replenishment quantity and timing.
- Passes output to Supplier Evaluation Agent.

Impact

-  Reduced stockouts and excess inventory.
-  Cost-efficient replenishment planning.
-  Manual computation errors.
-  Faster procurement cycle initiation.

Stages

Triggered by Forecasting Agent → Calculates reorder → Passes to Supplier Evaluation.

Exception Handler Agent





Role

Manages exceptions like supplier delays or out-of-stock events.

What it does

- Detects disruptions in supplier or logistics steps.
- Re-runs supplier and logistics logic to find alternatives.
- Auto-substitutes supplier/SKU and maintains timeline.
- Alerts user with fallback plan.

Impact

-  Workflow resilience and business continuity.
-  Manual escalation and rework.
-  Real-time adaptability in disruptions.
-  User trust in autonomous decisioning.

Stages

Triggered on error/delay → Replans via alternate agents → Updates Summary Card.

Logistic Agent





Role

Optimizes fulfillment and shipping strategy for the chosen supplier order.

What it does

- Simulates available carrier options (mock API).
- Calculates cost, ETA, and speed-to-stock.
- Selects best shipping method based on priority.
- Sends delivery plan to Summary Card

Impact

-  Reduced shipping cost and delivery time.
-  Optimized fulfillment workflow.
-  Manual logistics coordination effort.
-  Supply chain visibility.

Stages

Triggered by Supplier Evaluation → Calculates shipping → Outputs to Summary Card.

Operational Analytics Dashboard (1 of 2)

Inventory Optimization Copilot — Agent Governance Dashboard
Command-center view across Forecasting, Replenishment, Supplier Evaluation, Logistics, and Exception Handler agents.

Live agent monitoring - Last refresh: 1 min ago



Top KPI's

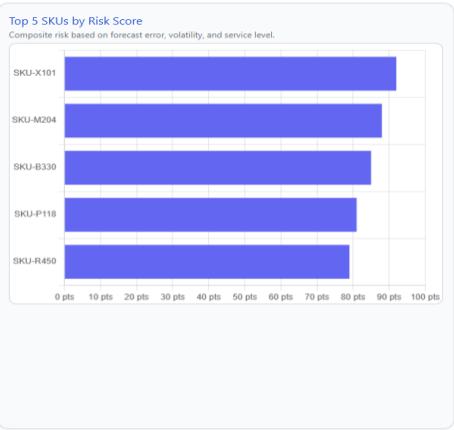
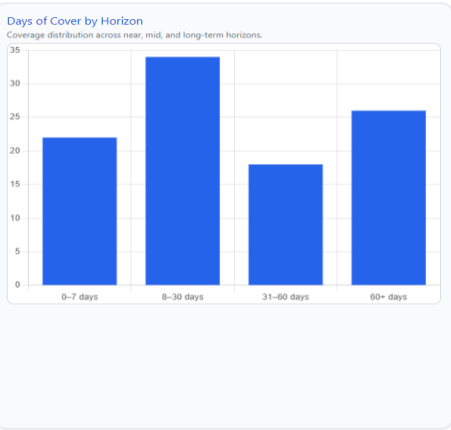
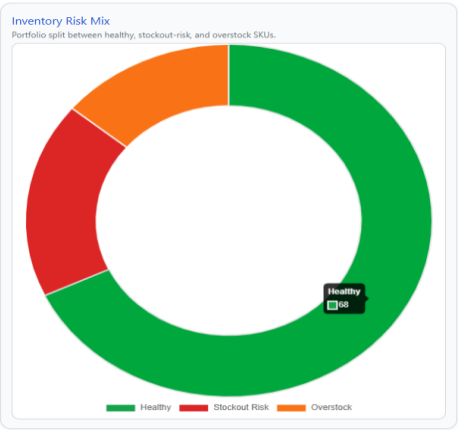
- High forecast accuracy ensures stable planning across 30/60/90-day horizons.
- Proactive risk detection identifies SKUs approaching stockout conditions early.
- Overstock visibility helps reduce working capital tied in excess inventory.
- Strong agent autonomy with most decisions handled without human override.

Graph Insights & Interpretation

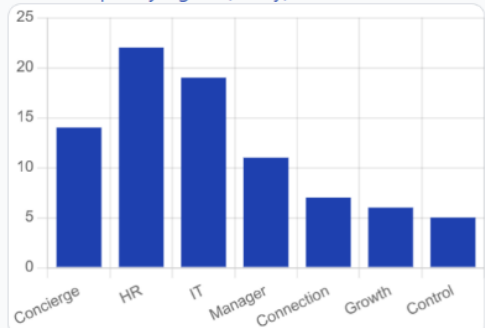
- **Inventory Risk Mix:** Portfolio distribution across healthy, stockout-risk, and overstock SKUs.
- **Days of Cover by Horizon:** Coverage visibility across short-, mid-, and long-term inventory horizons.
- **Top 5 SKUs by Risk Score:** Risk-based ranking of SKUs using forecast error, volatility, and service levels.

Graph Insights & Interpretation

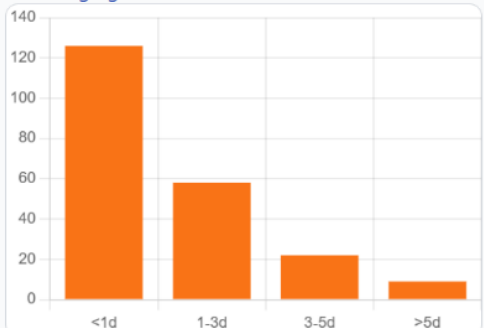
- **Agent Throughput:** Number of decisions/actions completed by each agent over the last 7 days.
- **Agent SLA Compliance:** On-time completion rate against the defined SLA for each agent.
- **Automation vs Human Overrides:** Share of autonomous decisions compared to steps requiring human intervention.



Queue Depth by Agent (today)

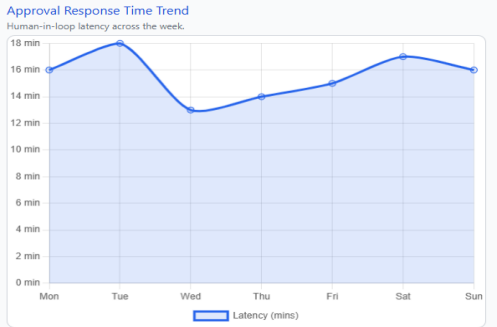
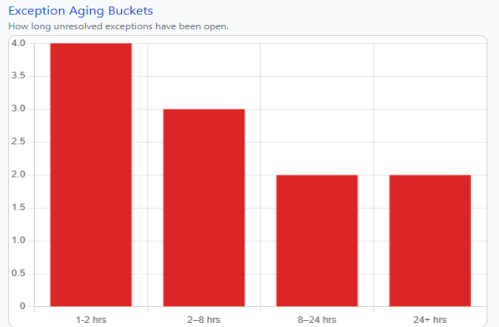
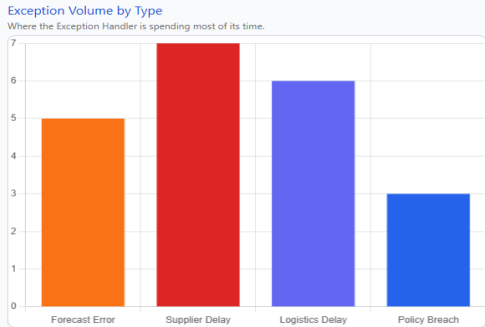


Ticket Aging Buckets



Rework vs First-Time-Right





Visual Insights & Observations

- **Exception Volume by Type:** Shows which exception categories consume the most agent workload.
- **Exception Aging Buckets:** Indicates how long unresolved exceptions have remained open across aging intervals.
- **Approval Response Time Trend:** Tracks human-in-loop approval latency throughout the week.

Stage-wise Agent Operational KPIs

Stage / Agent	Items in Progress	Avg Cycle Time	SLA %	Auto Decisions %	Exceptions (30d)
Forecasting Agent	34	6.2 min	98	92	1
Replenishment Agent	27	4.8 min	96	88	2
Supplier Evaluation Agent	21	5.5 min	95	84	3
Logistics Agent	19	7.3 min	93	79	3
Exception Handler Agent	11	12.4 min	91	63	5
Summary & Approval Copilot	9	14.1 min	94	—	4

About Table

- **Forecasting and Replenishment Agents show the best performance**, with fast cycle times and high SLA & automation rates.
- **Exception Handler and Logistics Agents carry higher operational load**, reflected in longer cycle times and more exceptions.
- **Automation effectiveness varies by stage**, with autonomous decisions highest in planning stages and lowest during exception management.
- **Overall SLA performance remains strong across all agents**, indicating stable and reliable operational execution.



Thank You!