

ToolsGroup Technology & Product Vision

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Our DNA

Optimizing supply chain performance through data science

Optimizing performance based on linear algebra, statistics, optimization and AI



First to provide machine learning in a supply chain planning platform



Acquired Evo for AI-powered optimization



Superior results that we can prove



First to offer probabilistic planning



Acquired Onera for zero latency event-based data analysis and optimization





Market Trends: What We're Hearing

Feedback from our customers and from the broader market



Decision Centric Planning:

The new knowledge worker needs to be empowered to collaborate and make decisions rapidly. Standard S&OP practices can't keep up with the speed of business today.



AI and ML have become mainstream yet the need for visibility and in understanding the impact of decisions is higher than ever.



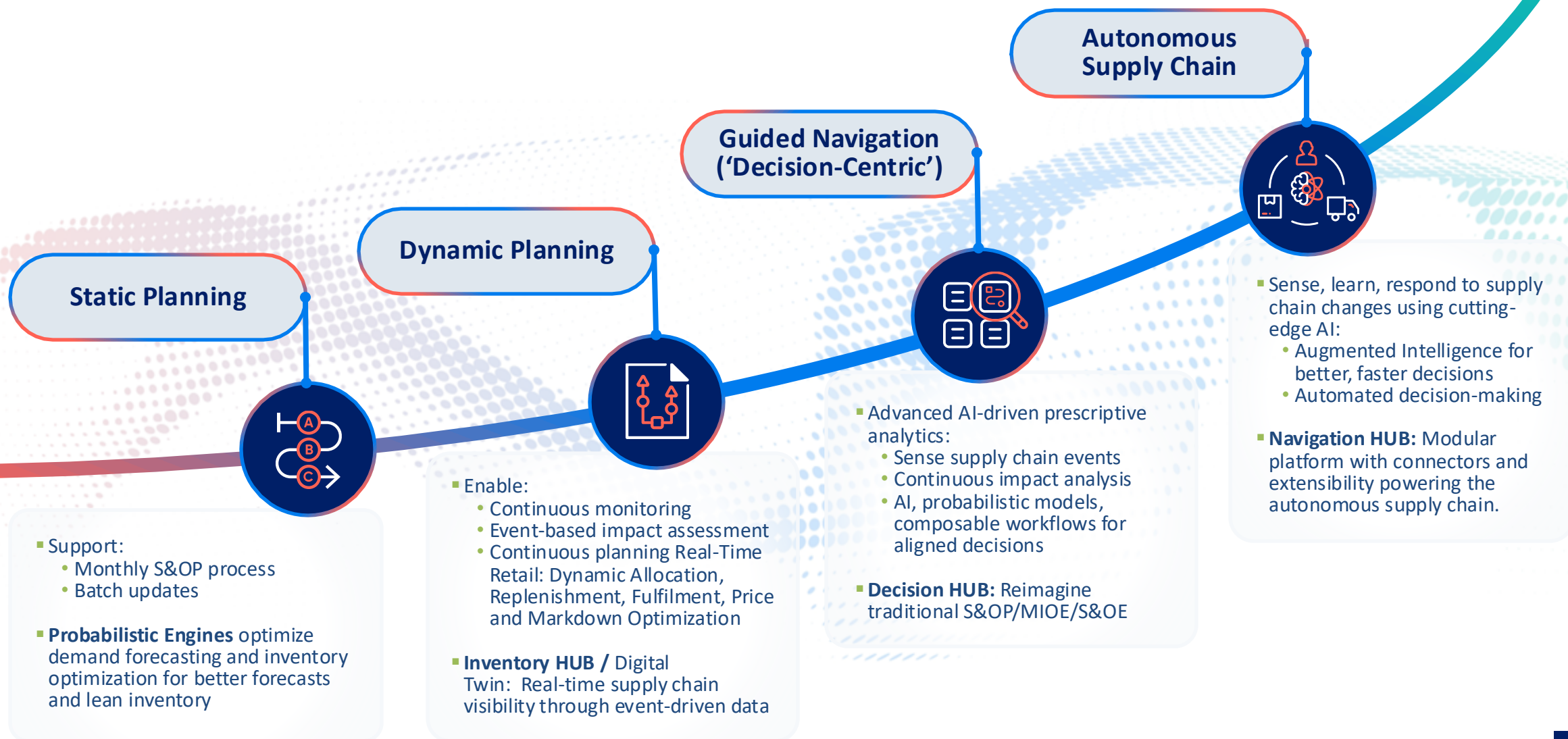
Buyers now expect to acquire best in class capabilities that can be composed into a technology platform which provides differentiated business advantage.



SaaS and Cloud Native technologies have become the norm as are the need for lower total cost of ownership and business critical availability.



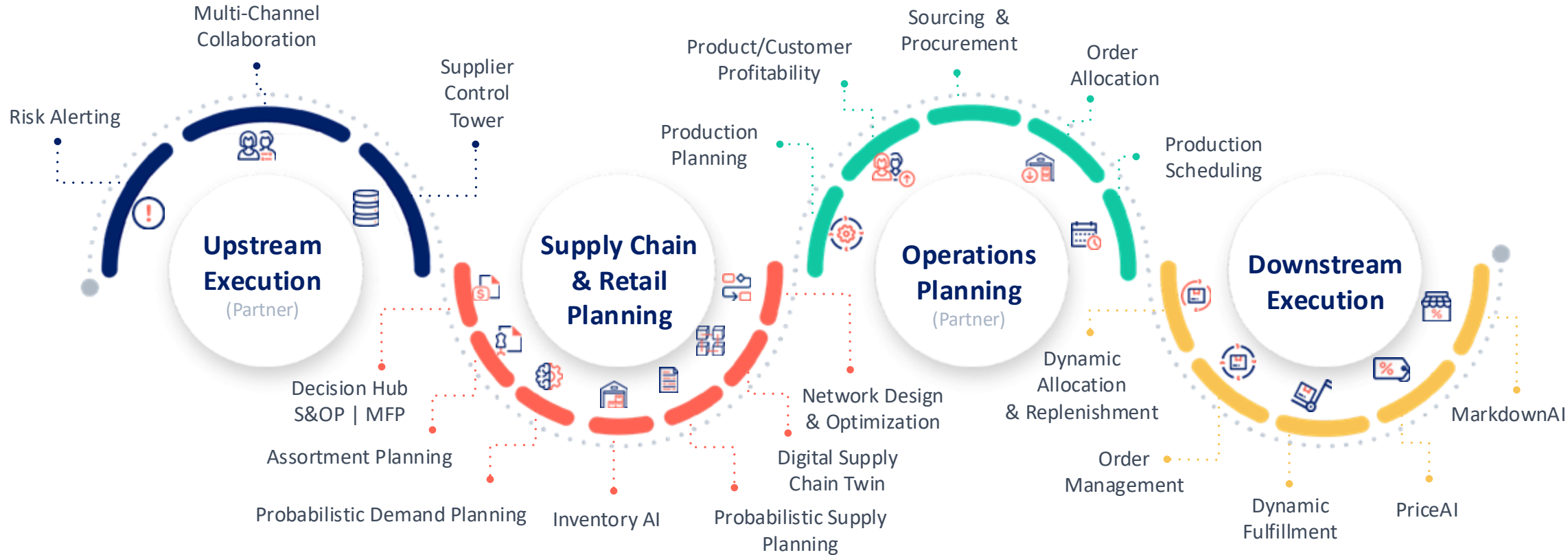
AI-Powered Solutions to Navigate Supply Chain Uncertainty





ToolsGroup Complete End-to-End Solution Suite

Powering End-to-End Visibility, Decision-Centric Planning, and Dynamic Execution



Inventory HUB Event-Based Dynamic Data Unification Platform

ERP | SMS | WMS | TMS



Supplier

ERP | WMS | MES



Manufacture

WMS | TMS



Distributor

ERP | POS



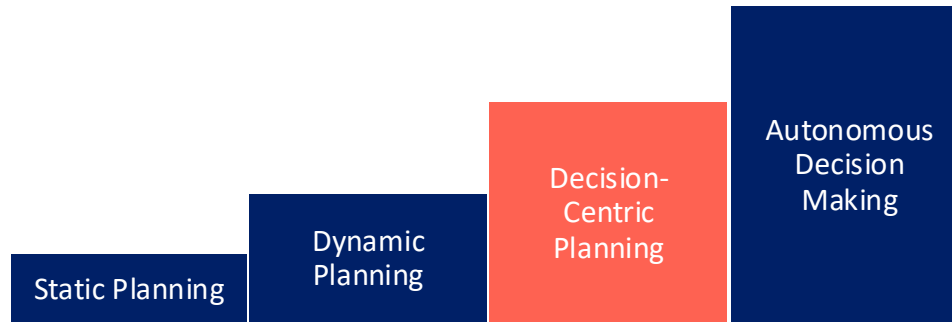
Retailer



Customer

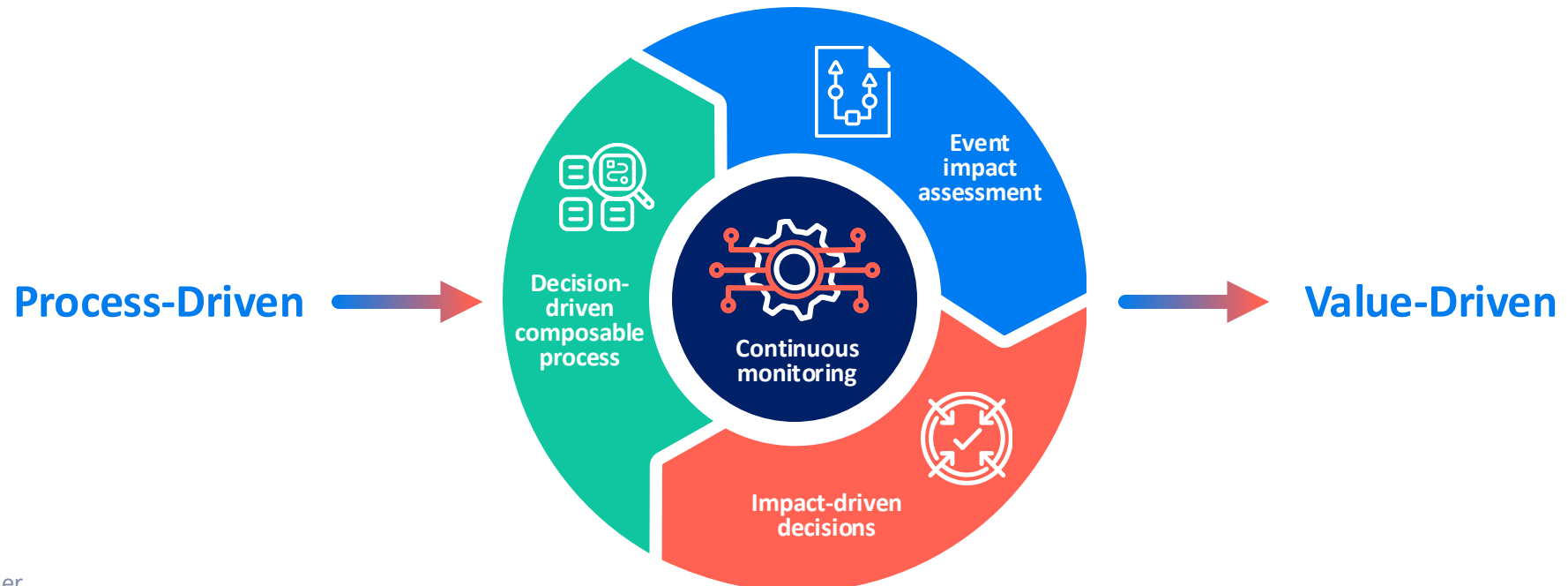


Product Vision, Industrial: Decision-Centric Planning Will Enable Our Vision



Decision-centric planning (a term coined by Gartner) is an approach to strategic and operational planning that prioritizes the quality and timeliness of decision-making. It places decision points at the core of the planning process, emphasizing the identification, evaluation, and selection of optimal courses of action.

Capabilities of Decision-Centric Planning





Product Vision, Retail.

Focusing on important macro-trends as we modernize our applications

Consumer preferences are constantly changing due to societal, technological, and lifestyle shifts. This leads to a **continuous introduction of new products and variations**.

[McKinsey: Understanding the ever-evolving, always-surprising consumer](#)

The rise of **online shopping** has significantly impacted **brand loyalty**.

About 75% of consumers have tried new shopping behaviors, with 36% trying new brands and 25% adopting new private labels.

[McKinsey: The great consumer shift: Ten charts that show how US shopping behavior is changing](#)

The retail sector is experiencing **workforce shortages**, which also affect backoffice roles. This can lead to increased workloads for existing employees and **difficulties in maintaining efficient operations**.

[McKinsey : How retailers can attract and retain frontline talent amid the Great Attrition](#)

Retail supply chains contribute to 25% of global greenhouse gas emissions, highlighting the need for **sustainable practices**.

Retailers are increasingly embedding sustainability into their operations to **meet consumer demands** and regulatory requirements.

[Deloitte: Global Powers of Retailing 2023](#)



Clear market differentiation enabled by our acquisitions and our technology investments

ToolsGroup's Next Generation AI Platform



Composability

Providing modular and composable solutions that can be integrated in many aspects of the End-to-End Retail Product Lifecycle.



Prescriptive AI

Using AI and Machine Learning to reach desired outcomes rather than try and anticipate what's next.



Real-time Demand Sensing

Offering real-time demand sensing, constantly updating forecasts to optimize inventory productivity and provide useful insights.



AI driven optimization

Optimizing across multiple vectors and constraints such as labor costs, logistics, financial margin and environmental impacts.



Collaborative UX

Empowering workers with a superior User Experience which fosters real-time collaboration and knowledge sharing while providing AI powered assistance and insights, enabling them to rapidly make the right decisions.



Technical Architecture Vision



Introducing the Evolved ToolsGroup Technology Platform

Key Design Considerations



Composable Modular Service Oriented Architecture

Reusing key capabilities across applications and allowing customers to compose into their own tech stack



Use of cloud-bound technologies

To achieve hyperscale real-time insights and high availability



Real-time data ingestion, industry connectors and modern APIs

Minimizing onboarding complexity and costs and optimizing time to value and customers ROI



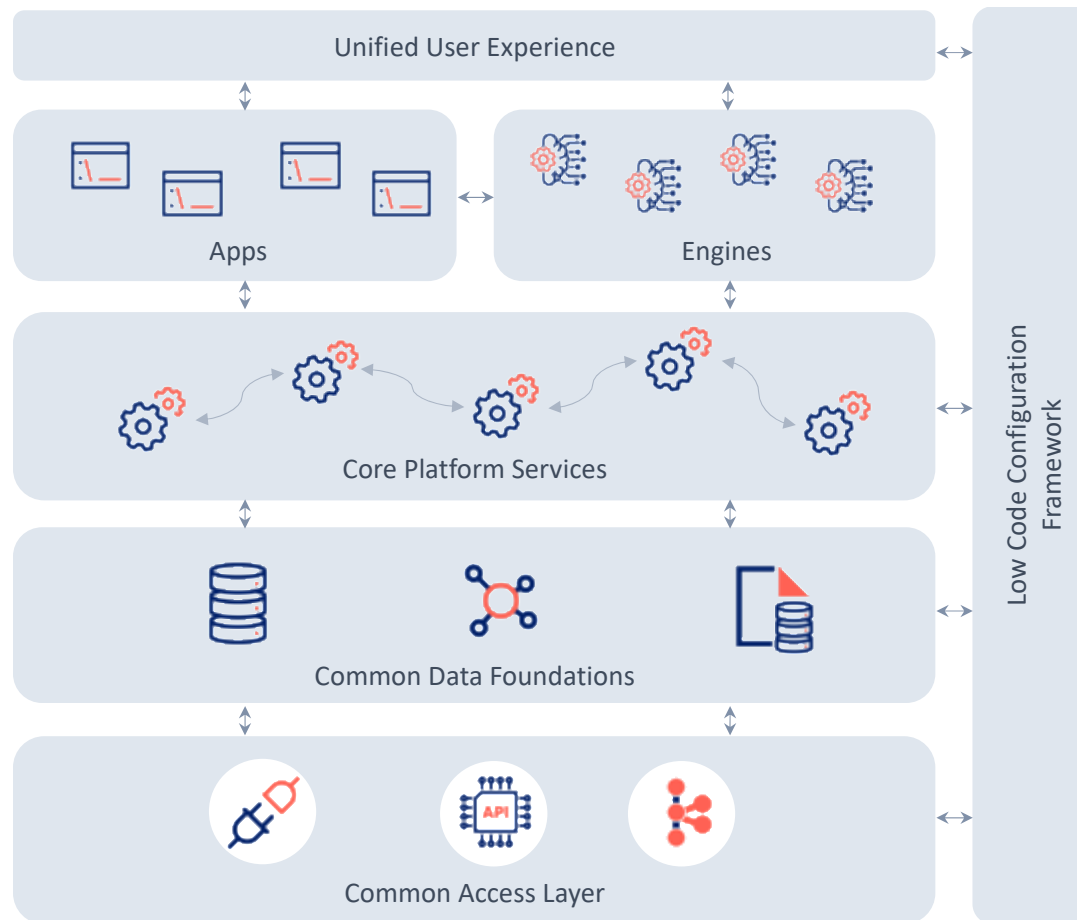
Low-Code / No-Code Configurability and Industry Standard Extensibility

Reducing Implementation cost and complexity while catering to specific needs of customers.



Built on a modern cloud-based architecture

New platform as a strategic differentiator and innovation accelerator



- Providing a **unified User Experience** across a broad set of applications and capabilities.
- **Modularity** helps compose solutions tailored to unique customer needs, can be easily combined with existing tech investment
- **Unified layers** reduce complexity and allow for easier introduction of new features into the suite.
- **Common configuration framework** and APIs reduces implementation complexity and costs
- **Cloud Bound Technologies** for greater availability, resilience and seamless upgrades



Taking a Modular Approach Allows for Plug-and-Play

Using building blocks to rapidly innovate and seamlessly connect with other applications

4 Products already on new architecture:

- Inventory Hub
- Dynamic Fulfillment
- Decision Hub
- Allocation & Replenishment (Q3 launch)

Unified User Experience



React Micro-Front-End UI with embedded 3rd party self-service Dashboard and Analytics (Sigma)

Engines



Existing engines that were decoupled and rendered multi-tenant and “Cloud Native”.

Colors denotes provenance:

SO99+ JustEnough Onera EVO

Core services



Federated GraphQL services which are foundational to all applications.

Common Data Layer



New set of domain specific services built iteratively on multiple highly scalable data technologies

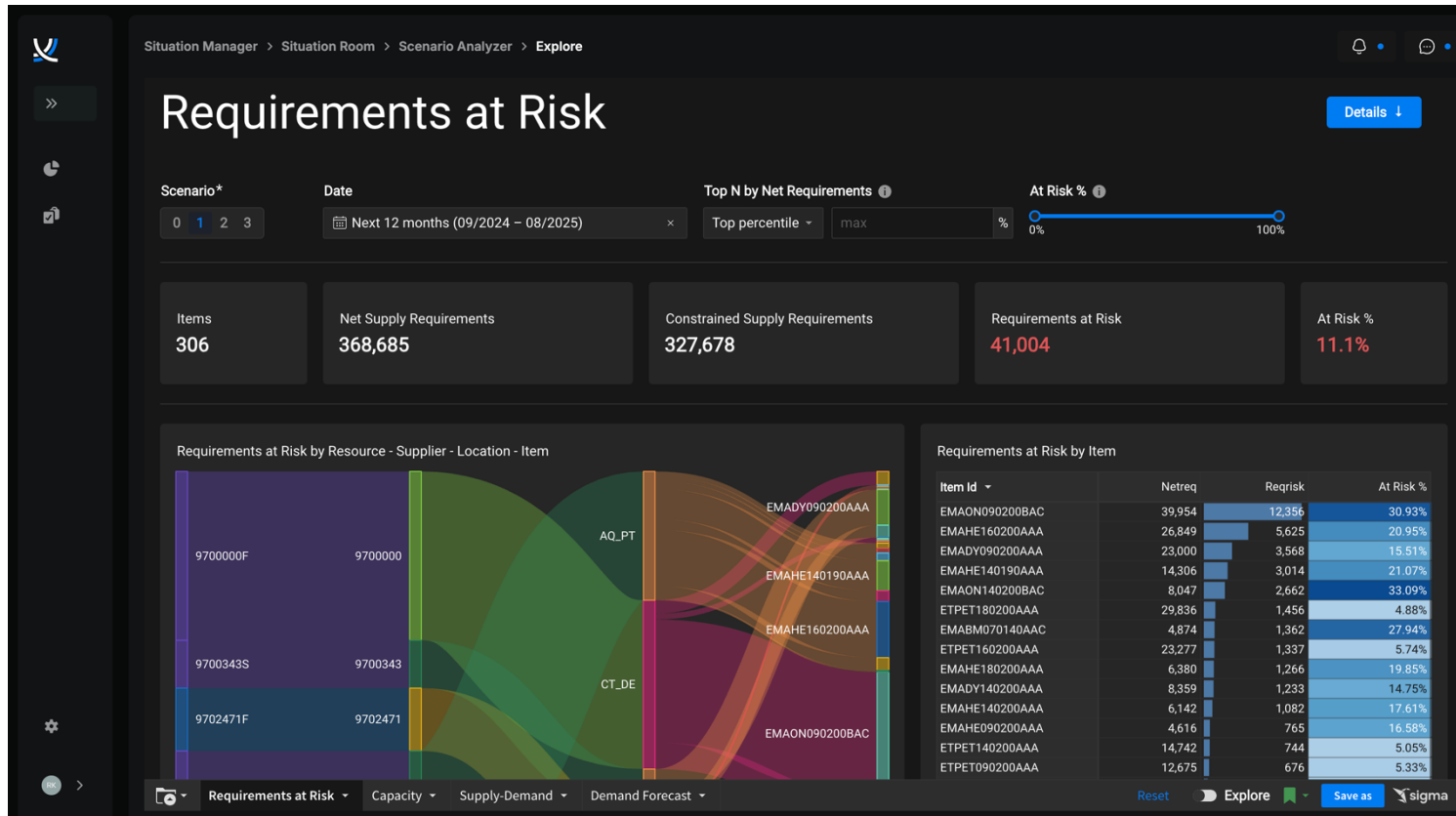
Common Access Layer



Built on Inventory Hub / Event Hub (Onera acquisition)



Embedded Business Intelligence to Unify User Experience and Enhance Reporting and Analytics Across All Products



- Modern, cloud-native technology ensures a scalable and easy-to-use solution for flexible data exploration
- Fully embedded within Enhance and Evolve products to deliver a seamless user experience
- Standard dashboards and reports
- Self-service analytics will enable users to create and share their own rich dashboards and reports
- Opportunity to integrate data and reporting across apps incl. 3rd party

First embedded dashboards already available in Decision Hub



SO99+ Copilot

Azure OpenAI Services



ServiceOptimizer99+ SO99+ Copilot Francesco S...

Which are the 10 best seller items (any aggregation level) for 2022 (any time slot)? show results in a tabular view.

The information about the best seller items can be found in the table **ITEMHIST** which is intended as Monthly Demand by Sales Area. The field **ITEM** is intended as Item Code and the field **QUANTITY** is intended as Quantity. The field **YEAR** is intended as Year. To find the top 10 best seller items for 2022, we would need to aggregate the **QUANTITY** field for each **ITEM** for the year 2022 and then sort in descending order to get the top 10.

Now let's execute the query 😊

The top 10 best seller items for 2022 are:

ITEM	TOTAL_QUANTITY
ITEM_1	5000
ITEM_2	4500

Ask me anything!

- The new SO99+ copilot is also able to help the user to explore the data stored into a SO99+ data base.
- The user can write a questions asking information about some data stored
- The system will first perform a translation of the questions into information that will be useful for the system to build the query: tables and fields names and descriptions, calculations rules, and so on. Also, this preprocessor has been designed on a generative AI system.
- The generated information are then combined with the original questions to create a final input for the system who will build the query on the DB.
- The query is automatically performed, and the results can be shown in a prosaic way or in a table is specified in the question.

SO99+ Foundational - Replenishment

The SO99+ Foundational - Replenishment Certification is awarded to the candidate who has achieved a foundational knowledge of the Replenishment Module.

SO99+ Foundational - Reports, Alerts and Basic Admin

The SO99+ Foundational - Reports, Alerts and Basic Admin Certification is awarded to the candidate who has achieved a foundational knowledge of the Reports, Alerts and Basic Admin Module.

SO99+ Foundational - Fulfilment

The SO99+ Foundational - Fulfilment Certification is awarded to the candidate who has achieved a foundational knowledge of the Fulfilment Module.

SO99+ Foundational - Demand

The SO99+ Foundational - Demand Certification is awarded to the candidate who has achieved a foundational knowledge of the Demand Module.

The present certification is valid for 2 years from the date of issue.

Awarded on 04/17/2024

Earned by SO99+ Copilot

Offered by toolsgroup Academy

Grounding Data

- User guides and materials sourced from ToolsGroup Academy.
- Comprehensive coverage spanning from fundamental functionalities to advanced features.

Key Features

- Proficient support system offering insightful responses and solutions to supply chain challenges.
- Ability to provide accurate responses to questions extracted directly from SO99+ certification tests.

Results

- Precise guidance on inventory management, demand forecasting, and replenishment processes.
- Enhances efficiency and accuracy in supply chain operations.
- Accessible support for professionals navigating SO99+ complexities.



Products Built on the New Platform



Inventory Hub

TRACK: SOURCE SYSTEMS

Inventory Hub listens to events from transactional systems to create a zero-latency view of the supply chain

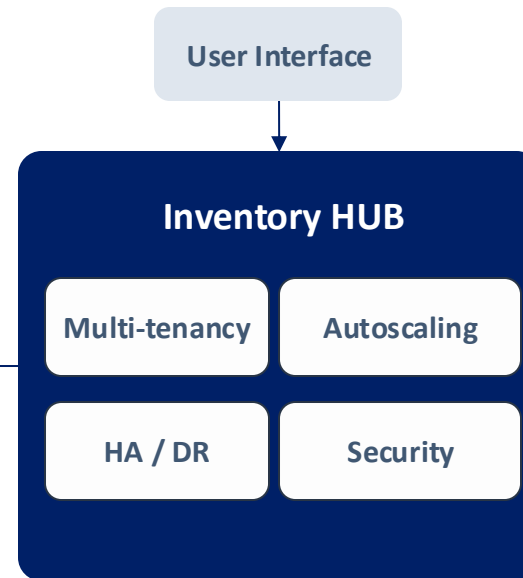


EVENT &
DIRECT
Updates



ANALYZE, VIEW AND CONFIGURE

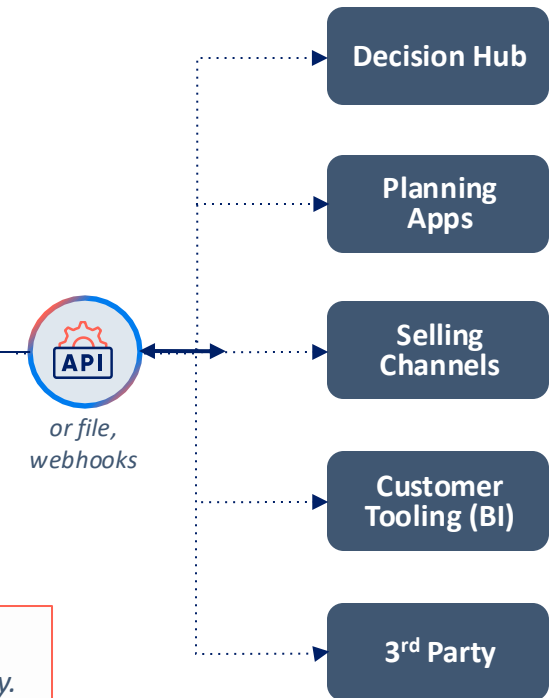
Map supply chain to then analyse/predict future behaviour, visualize activity and configure network, ATP and policies and constraints



*This is the technical “special sauce” — in summary, the platform is highly scalable and has extremely low latency. We can handle **a lot of data** and process it very **quickly**.*

SERVE: DESTINATION SYSTEMS

Serves views of inventory, demand and operations (historical, future) to downstream systems (in-house, customer or 3rd party)





Dynamic Fulfillment

Real-Time Data

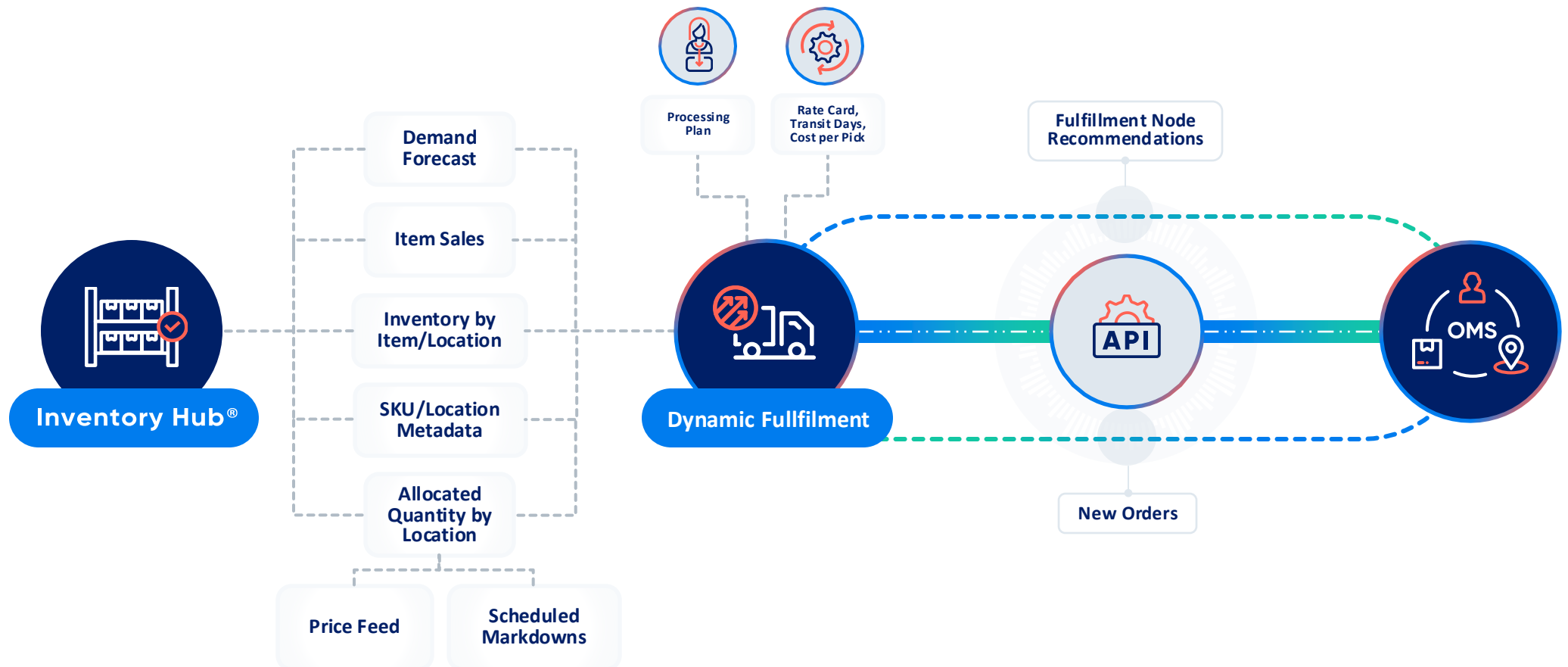
Inventory Hub captures critical information from execution systems and serves it to the Dynamic Fulfillment app

Optimized Decision-Making

Dynamic Fulfillment identifies the optimal choices for what to ship and from where

Integrated Feedback Loop

Your OMS executes on DF recommendations and continues to send new orders into DF for evaluation and assignment



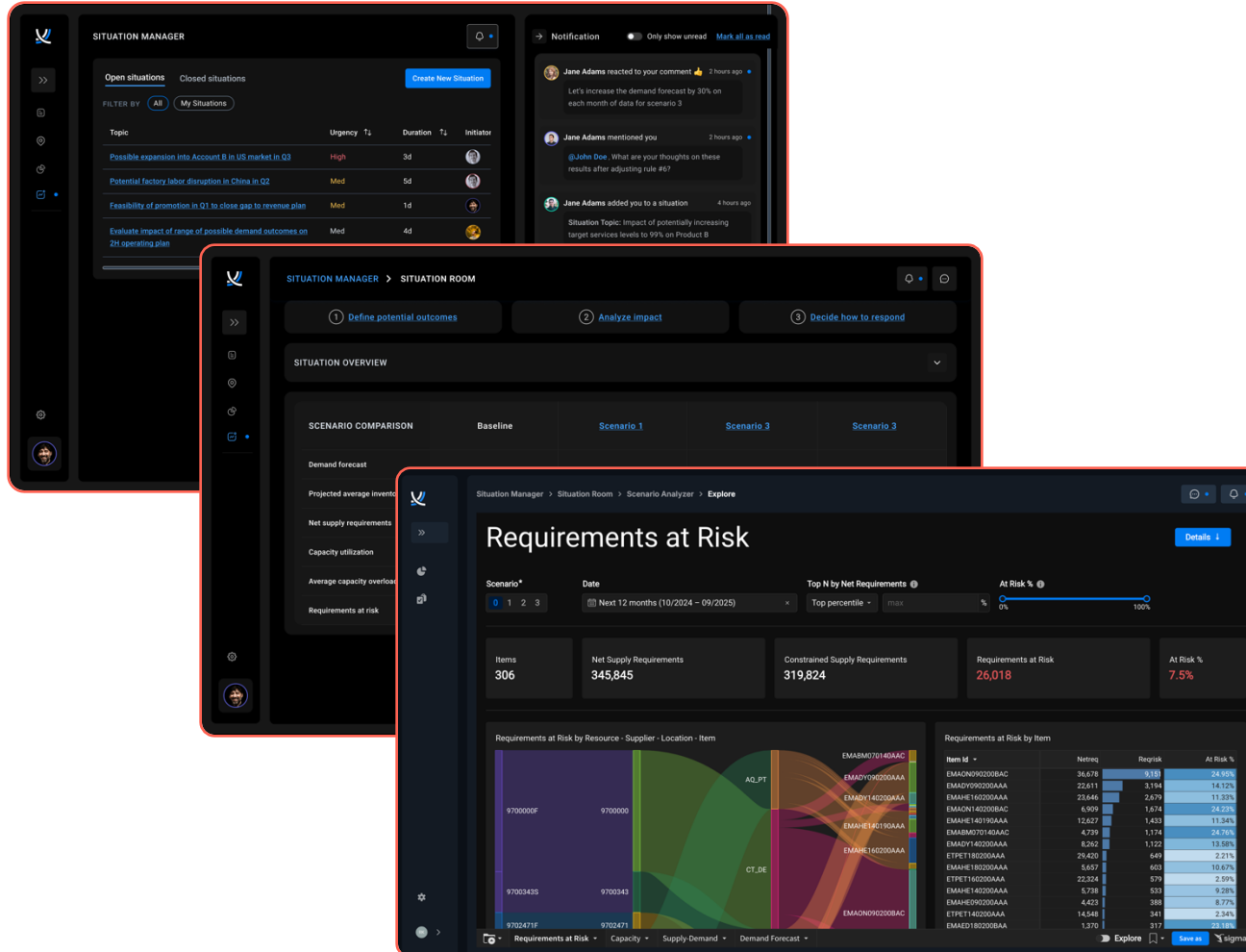


No More S&OP Meetings

As a supply chain executive, I want to enable a **continuous, collaborative** decision-making process that involves the right stakeholders at the right time, with the right information, to **make better decisions, faster**. I want to move to a guided, **asynchronous** workflow that empowers cross-functional teams to **react earlier** to changes and trends affecting the balancing of supply and demand, quickly **evaluate options** to **mitigate risks** and **exploit opportunities**, and align most profitable actions to take. All this should be possible on an ongoing **day-to-day basis**, taking decisions as early as possible, rather than waiting for a fixed cadence of monthly meetings.



Decision Hub has Been Developed in ToolsGroup's New Unified Experience Layer



- Single sign on access to all ToolsGroup's future cloud-native applications for a modern, unified, and seamless user experience
- <https://apps.toolsgroup.ai>



Decision Hub

The platform for decision centric planning

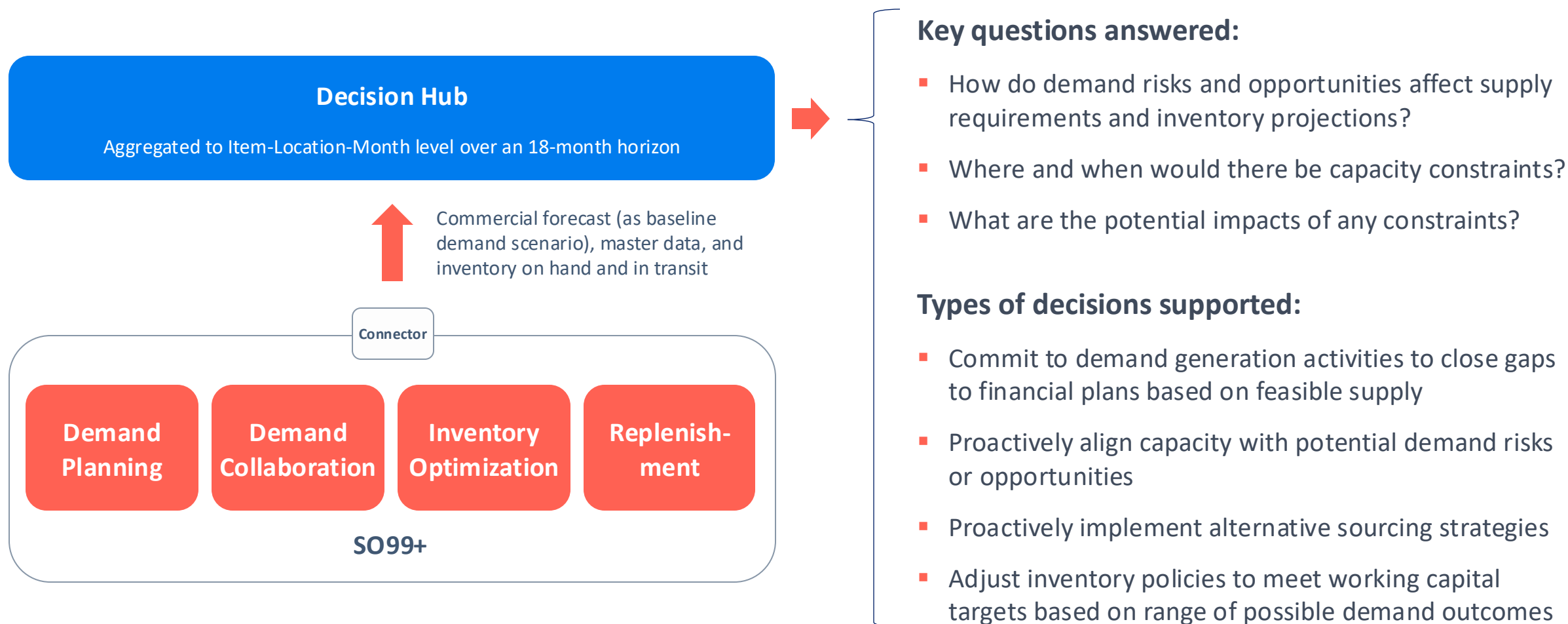
For supply chain executives facing increasing supply chain uncertainty, overly rigid and piecemeal decision-making processes informed by latent and misaligned data mean that understanding impacts and reacting to changes takes too long. Decision Hub enables continuous, collaborative decision-making guided by asynchronous workflows to quickly evaluate options and align on the best possible actions to take.

Key Capabilities:

- ✓ Virtual situation room where all critical stakeholders can **asynchronously collaborate** on emerging supply chain threats and opportunities
- ✓ **In-app real-time scenario planning** to generate demand forecast scenarios and compute corresponding supply impact using the latest data and forecasts
- ✓ Scenario Analyzer tool to **compare and analyze results to quickly understand the impact** of potential outcomes
- ✓ Guided workflows that help users take actions to **move through the decision-making process more efficiently**
- ✓ Notifications and alerts to actions taken in your open situations so **no time is wasted** in responding
- ✓ Faster tactical decisions and more comprehensive strategic plans that **mitigate threats and exploit opportunities to increase profitability**



Decision Hub Complements SO99+ to Support More Tactical and Strategic Decision-Making





Inventory.io - Next Generation Forecasting, Allocation and Replenishment

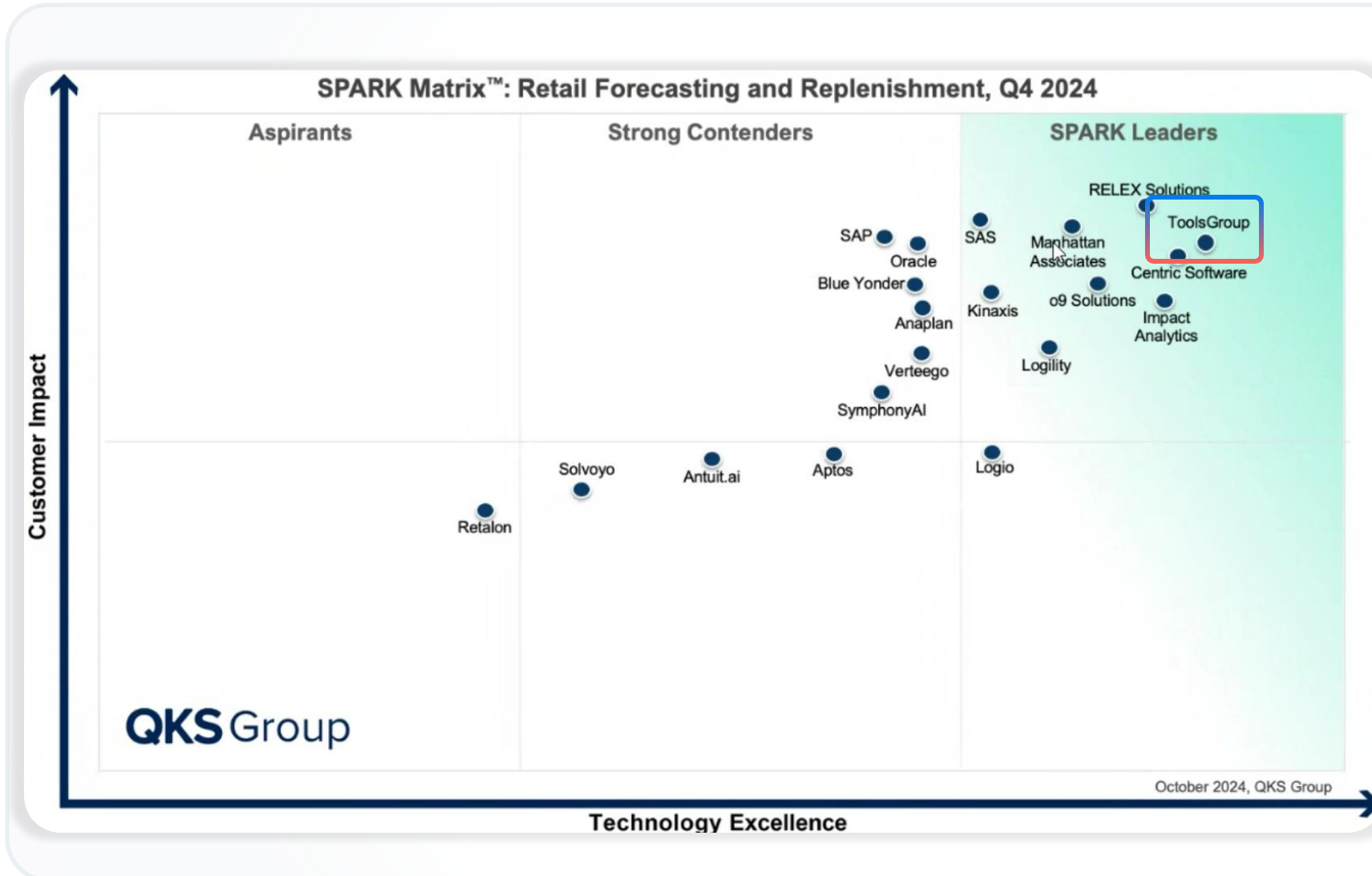
Proven engines and workflows from existing tools composed in a revolutionary new application

- Proven engines for probabilistic forecasting, stock to service curve calculations, and wholesale replenishment from SO99+
- Proven AI engines for allocation, replenishment, and rebalancing from Evo
- Best practice workflows and advanced forecasting from JustEnough
- Unified user experience and common data layer

The screenshot displays the Inventory.io application interface, which is a dark-themed dashboard. The left sidebar contains navigation links for 'Locations', 'Inventory', 'Fulfillment', 'Allocations', 'Constraints', and 'Decision Hub'. The main content area is divided into several panels. The top panel shows 'Allocations > New Strategy' with tabs for 'Strategy Description', 'Product Selection', 'Locations', 'Constraints', and 'Order Summary'. Below this is a table with columns for 'Product ID', 'Item ID', 'Color', 'Size', 'Allocate by date', 'Arrive by date', 'Demand forecast units', and 'Allocated units'. The table lists four items for 'POLO1515' in blue, with sizes S, M, L, and XL, all allocated by March 14, 2024, and arriving by March 30, 2024. The bottom panel shows 'Locations' with a table of location details including 'Location ID', 'Type', 'Zip', 'Climate', 'Grade', and 'Footage'. It lists locations in Dhaka, North Dakota, Maine, New Mexico, Turkey, Washington, and Montana. A right-hand panel shows 'Attributes' for a selected location, including 'Zip', 'Climate', 'Grade', 'Footage', 'Closure', and 'Group'. Another panel shows 'Service Level' with a line graph. The bottom right panel shows 'Allocations' with a table of allocation details including 'Name', 'Mode', 'Cover days', 'Next run', and 'Created by'. It lists various items like 'Winter Collection 24', 'Jeans', 'Babies and Kids', 'Men's Basics', 'Sports Winter', 'Barbie Collection', 'Women's Underwear', 'Women's Basics', 'Men's Underwear', 'Barbie Collection', and 'Sports Summer'. The interface is user-friendly and provides a comprehensive view of inventory management and forecasting.



Inventory.io resonating with analysts



ToolsGroup Highlights

Unified & Integrated Solutions

Scenario Planning and Risk Mitigation with Probabilistic science

AI-Powered Predictive analytics

Scalability and Integration

Focus on Customer Service and Support



Smart Price Optimization with Evo and SO99+

Distributors face endless uncertainty: shrinking margins, growing e-comm competition, supplier unreliability, long tail, and intermittent demand. **ToolsGroup AI solutions** account for uncertainty with **real-time price adjustments** to each SKU on each price list in response to the smallest demand signals to maximize profit





Generating Critical Extra Data for More Accurate Forecasts

Because PriceAI is designed around explainable AI, the price elasticities and attributes are not just used in the optimization. They are output that you can visualize in the Elasticity app—or export directly into SO99+.





PriceAI Works with SO99+ to Optimize Overall Impact

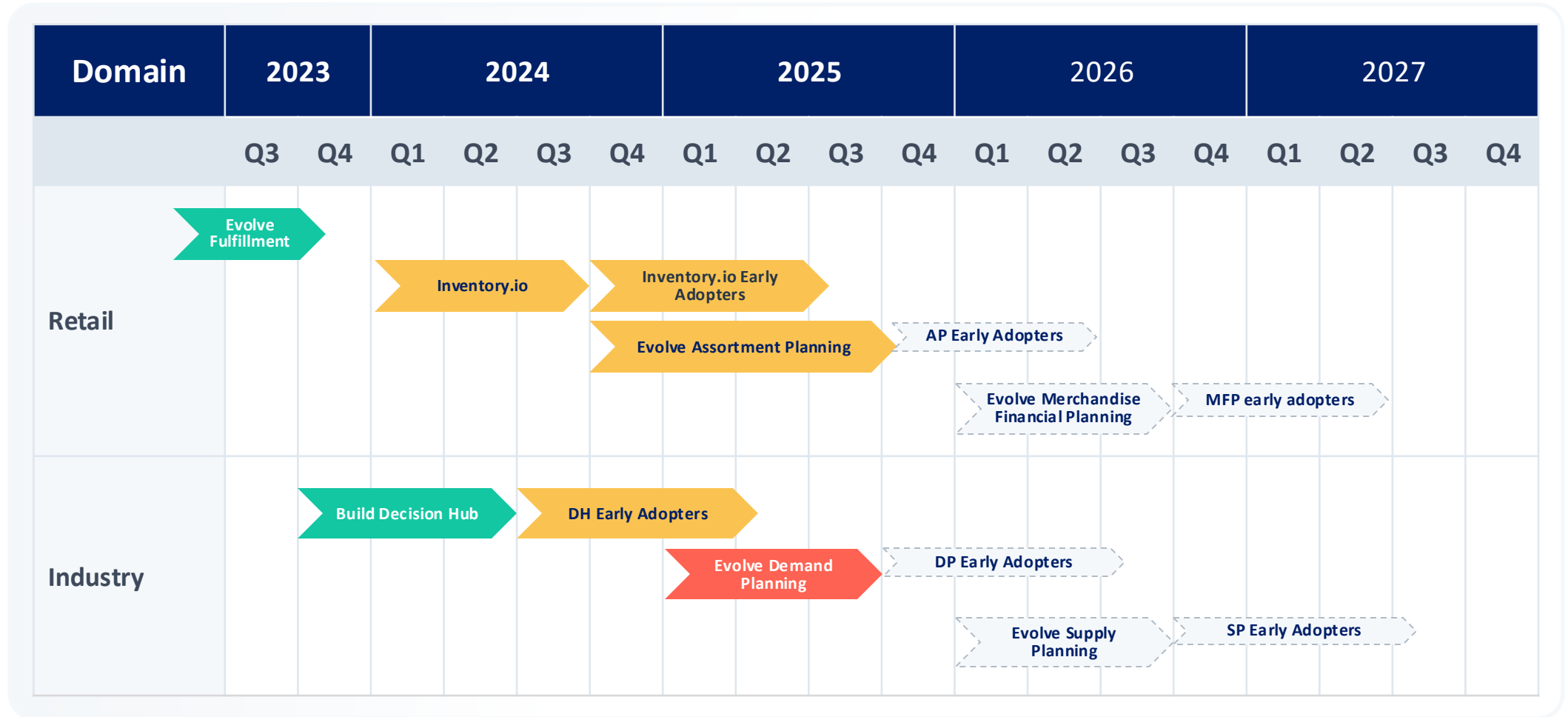
SO99+ takes these elasticities and layers them into the forecast to align the demand to the new price lists for every SKU/location for the relevant time period and then automatically readjusts its multiechelon inventory optimization to deliver service level, revenue and margin goals within the constraints



The Journey: Product Roadmap



Evolve Roadmap



Complete

In Progress

Not Started

Tentative