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Allocation+ with Palantir Foundry



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Challenge

Global supply chain volatility has created enormous challenges for manufacturing organizations. Supply-side raw material constraints burden material managers and supply chain experts alike with complex questions, such as:

→ How do I allocate limited raw materials to production orders?

→ How do my allocation decisions impact revenue?

→ What do I need to do in order to de-bottleneck a given SKU? How can my allocation decisions de-bottleneck my network?

In a global manufacturing organization, these questions are difficult to answer, as they require visibility across a spider-web of interconnected Bills of Materials (BOMs), potentially hundreds of thousands to millions of raw materials, and finished SKUs, and a rapidly shifting supply and demand picture. Answering these questions in real time is critical, but to stay ahead of the curve, organizations should try to run complex what-if scenarios and simulations to proactively mitigate future disruptions.



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Modules



Module 1 →
Supply Chain Digital Twin

An organization's critical supply chain data is often scattered across multiple systems — multiple ERPs, TMS, internal data lakes, spreadsheets, and more. Foundry has over 200 built-in connectors that enable rapid ingestion and integration of source data, regardless of whether it's stored in a unified datalake or disparate ERPs and spreadsheets across the organization. The Digital Twin is then constructed on top of this data, creating core concepts of Entities & Events, Models, and Actions.

ENTITIES & EVENTS
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We model the following entities and events in the Digital Twin to represent both real historical and future supply chain operations. The list is not exhaustive and can be expanded or reduced based on industry and organizational need.

Entities	→ Material / Plant / Inventory / Customer / Vendor / BOM (Header and Item) / Batch (If necessary)
Events	→ Purchase Order / Sales Order / Production/ Process Order / Stock Transfer Order

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MODELS

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Models layer onto entities and events to represent interactions between components and the impacts of those interactions. The set of models deployed or configured varies from customer to customer, depending on industry and objectives. Some example models include: Sales Order Allocation based on FIFO or based on Max. Revenue, On-Time-In-Full, Out of Stock Risk, and much more. These models are critical to subsequent simulations and what-if scenarios. The models also enable operators to ask the Digital Twin representative questions and understand impact.

ACTIONS

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Finally, the Digital Twin incorporates the concept of Actions, which enable users to write-back to source systems as they execute supply chain operations from within the Foundry Platform. This ensures that Analytics and Operations exist in a closed-loop, driving maximum value for the business by ensuring that decisions identified in the Digital Twin are implemented on the ground.



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Module 2 →
Allocation+

In many cases, supply or production capacity is simply insufficient to meet all outstanding demand. Making the right decision on what to produce or what sales order to fulfill is a complex, cross-functional and cross-value-chain endeavor. This Module enables operators to make those hard decisions with ease - enabling business experts to focus on the business strategy, and not the data analysis.



ALLOCATION STRATEGIES
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Deciding how to allocate limited raw materials or production capacity is often both a quantitative and qualitative exercise. Aspects such as revenue or profit generation can be quantified to create a concrete objective, but customer satisfaction, market share, and more often remain core business objectives and need to be considered when allocating.

By default, the following allocation strategies come pre-configured to get the allocation process moving quickly:

→ Maximize revenue
→ First-in first-out by order date
→ First-in first-out by planned delivery date

The Allocation+ Module transforms multiple BOMs into a global material dependency graph describing how material flows from raw to WIP to finished goods. Leveraging this model, the toolkit can use inventory and sales projections to determine the clear to build status for each finished good. Layered on top, operators can define their preferred prioritization strategy for when multiple finished goods compete for the same raw material.

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ALLOCATION EXECUTION
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Execution of an allocation decision is often very tedious in source systems, requiring cancellation or delay of potentially hundreds of production runs, sales orders, etc. In parallel, these changes need to be communicated to a wide swath of stakeholders, from key account managers to material managers and production planners.

This module supports both aspects by providing:

→ Direct write-back to source systems (Further detailed in Module 3).
→ Easy-to-use alerting and UI solutions for end operators to understand the latest state of the allocation process as it relates to their daily work.



Module 3 → Write-back

Palantir Foundry is an operational platform designed to not only to make your supply chain smarter, but also more effective. The same 200+ connectors that enable easy connection to source systems also enable easy write-back to those systems. This ensures that analyses, simulations, and decisions identified within Foundry are executed in daily business.

INSTALLATION AND INTEROPERABILITY
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Many organizations have made significant steps in recent years developing and executing on a digital and data strategy. Palantir Foundry and the Allocation module are designed to operate in complex IT environments. Foundry works equally well interacting with existing data lakes and data warehouses or source ERP and other operational system. Foundry is further designed to work alongside existing supply chain point solutions to ensure that existing investments are an accelerant to value creation.

As a SaaS, Foundry can be installed in a matter of days and the Allocation+ solution deployed in a matter of weeks.

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Conclusion

Recent conditions have demonstrated global volatility has and likely will persist through the indefinite future. The complexity of our supply chains that enables the functioning of your business at scale, also makes them highly vulnerable to major disruptions. The Allocation+ solution in Foundry can enable organizations of all shapes and sizes to navigate this highly complex supply chain environment. Safeguard your business against disruptions and equip it for agility into the future.

To request more information or a demo, reach out to your existing Palantir sales representative, or send an email to business@palantir.com.



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