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# CONTROL TOWER TECHNOLOGY VALUE MATRIX 2021

**ANALYST**

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## THE BOTTOM LINE

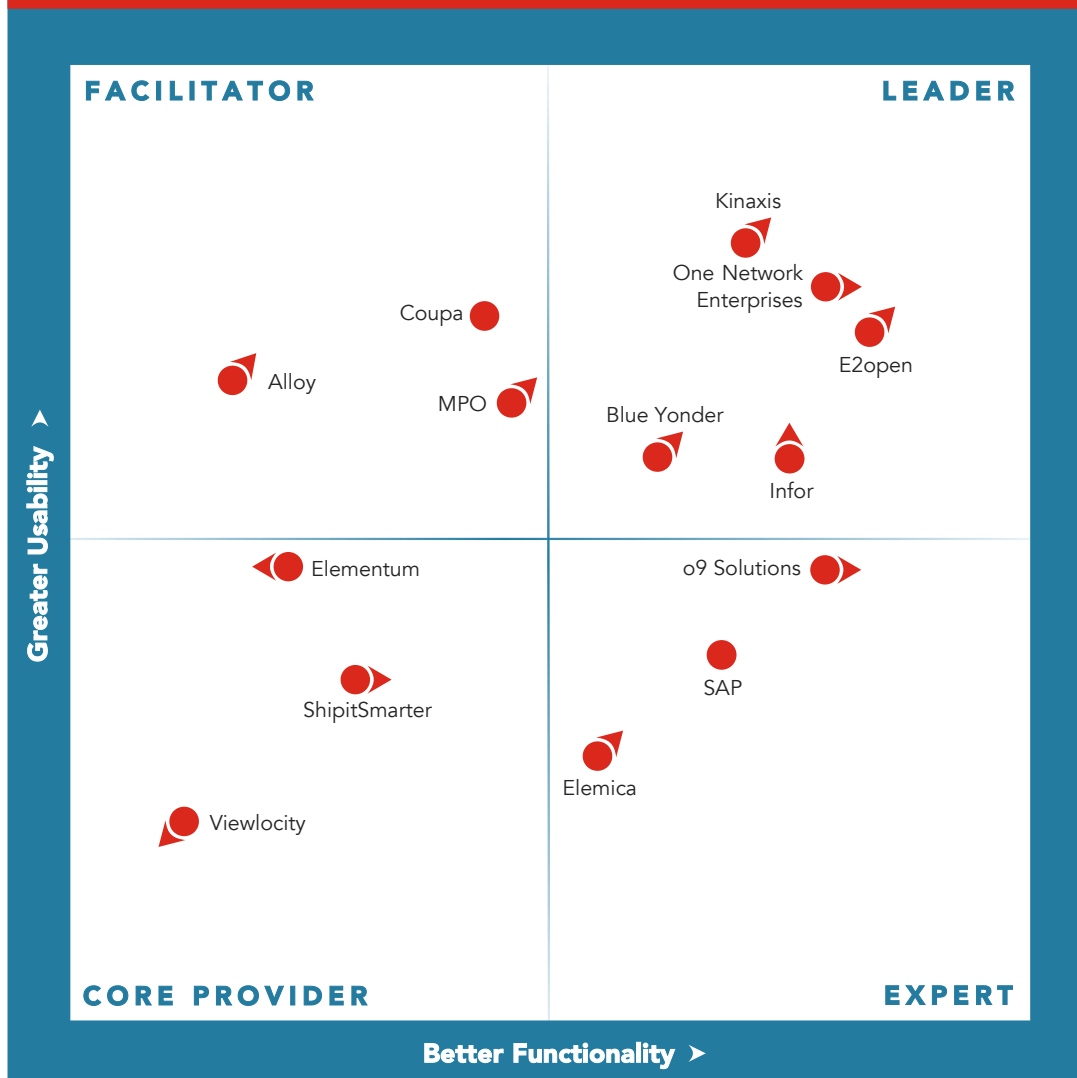
As we jumped out of the proverbial frying pan that was 2020, businesses continue to feel the heat of mounting supply chain issues this year. Lingering COVID-19 restrictions, material shortages across virtually all industries, extreme weather, and unforeseen geopolitical events place increased pressure on suppliers, manufacturers, and distributors, alike. Traditionally, large enterprises leverage Control Tower solutions; however, Nucleus found increased demand among medium-sized organizations as they require greater visibility and agility across production and transportation to remain competitive. With the SaaS market trending towards a platform approach, there has been increased consolidation within the supply chain solutions space. Vendors are acquiring complementary solutions to develop holistic platforms that manage customers' entire supply chains, from planning to last-mile delivery.

# Control Tower

Value Matrix | September 2021




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## MARKET OVERVIEW

Supply chain issues have been central to operational challenges of 2021 as extreme weather, continued COVID-19 restrictions, and geopolitical events present unpredictable transportation delays, supply shortages, and inventory surpluses. As a result, organizations require solutions that support supply chain planning (SCP) and also provide dynamic supply chain execution (SCE) functionality. Control Tower solutions meet these needs by providing



an end-to-end view of an organization's supply chain with intelligent response recommendations to optimize supply and demand matching as disruptions occur.

Nucleus defines a Control Tower solution as software that connects customer and partner operations to provide extended visibility of a user's supply chain with informed situation planning and adaptive execution capabilities. The Control Tower market includes solutions of various scopes and specialties for use cases across select industries and sourcing needs. Nucleus has witnessed organizations of all sizes increasingly adopt Control Tower solutions: SMBs favor niche providers catered to their specific industry or sourcing needs; Large enterprises prioritize comprehensive platforms with global reach to support dynamic multi-echelon distribution.

Over the past year, customers have increasingly valued end-to-end supply chain management (SCM) solutions leveraging an abundance of real-time data sources in favor of traditional historical information. Nucleus has identified four primary ways in which Control Tower vendors differentiate their solutions to drive speed and accuracy in predicting and responding to disruptions: network scale, tailored geographic and industry focus, IoT-enabled granular sensing and digital twins, and automated optimization of supply and demand matching with Machine Learning (ML) algorithms.

Control Tower vendors work alongside customers to connect with supplier and distributor partner operations via one-to-one or network connectors to create a holistic view of the supply chain across multiple tiers. Some vendors allow customers to connect with other organizations within their global networks without developing additional partnerships or connections, reducing bottlenecks to collaboration. Applying this partner integration, Control Tower customers can access high-value features, including inventory and demand simulation, estimated time of arrivals, prescriptive recommendations, and collaborative scenario planning. Select Control Tower vendors offer real-time analytics and visualizations over amassed internal, partner, and third-party data, enabling users to assess supply chain status and health. Automation is another key focus area as vendors develop capabilities centered on intelligent response generation and execution, risk estimation, and disruption sensing.

In this Value Matrix, Nucleus evaluated vendors based on their ability to deliver value to customers through the functionality and usability of its Control Tower solution providing a snapshot of the Control Tower market (Nucleus Research V67 – Understanding the Value Matrix, April 2021). The Value Matrix also shows the direction vendors are heading relative to the general market based on expectations regarding developing new or improved features. These insights help current and potential customers understand a vendor's market offering and future expectations based on present investments.

# LEADERS

## BLUE YONDER

Blue Yonder is a Leader in the 2021 Control Tower Technology Value Matrix, recognized for its digital supply chain and omnichannel commerce fulfillment capabilities. Blue Yonder's Platform, Luminate Control Tower, enables retailers, manufacturers, and logistics providers to predict, pivot, and fulfill customer demand. One of the core value propositions of Luminate Control Tower is its integration with both its customers' and their partners' software ecosystems to streamline workflows at any stage of the supply chain.

- Blue Yonder's continued improvements in its artificial intelligence (AI) and machine learning (ML) algorithms enable customers to predict supply chain disruptions and create forecasts more accurately. Luminate Control Tower gives users insights to discover, interpret, and act on real-time information from the entire digital ecosystem, including third-party data sources, and bridges the gap between planning and execution.
- Blue Yonder's Control Tower utilizes proactive and customizable alerts that activate new supply chain plans when certain events occur. These alerts trigger new decisions with updated logistic routes and delivery times and provide insights to understand the effects of these new decisions. New data inputs from other supply chain partners inform the downstream situation and predict ETAs, potential shortages, and inventory numbers.
- Luminate Control Tower equips users with a real-time scenario analysis tool, called "Situation Rooms", which relevant parties can run to generate optimized planning solutions. Blue Yonder continued expansion of its partner network enables collaboration and drives innovation. Parties within the network are introduced to more viewing options and classifications of exception types. Planners can zoom in on exception events based on selected variables, such as ETAs and revenue flows, to make more effective decisions.

With Blue Yonder's acquisition by Panasonic this year, customers will benefit from the combined power of Internet-of-Things (IoT), Edge Computing, and AI/ML. With Panasonic's IoT and Edge technology, Luminate Control Tower will be able to integrate and process numerous data points relevant to the supply chain, such as temperature fluctuations, location updates, and logistics speeds. With the combination of Luminate's and Panasonic's technology, Nucleus believes that Blue Yonder will continue to be a leader in the market and further improve its range of functionality.

## E2OPEN

E2open is a leader in the 2021 edition of the Control Tower Value Matrix. The vendor provides a comprehensive suite of intelligent applications orchestrating planning, execution, and optimization processes under a unified Harmony user experience. This centralization of supply chain planning and management enables companies to respond to disruptions by leveraging rapid data-driven decision-making capabilities across suppliers, global trade and logistics, and channel partners. E2open's partner network, E2net, is the world's largest collaborative network of supply chain partners with over 600,000 users across more than 180 countries. E2net integrates data flows from user's entire operational ecosystem, including immediate neighbors and their associated partner's networks. This unified array of external data streams allows E2open to provide rapid disruption sensing and improved delay and shortage warning capabilities.

Since the 2020 edition of the Control Tower Value Matrix, E2open has continued to add new functionalities and extend its operational ecosystem. On June 8th, 2021, E2open released its 2nd quarter product update, deepening process automation and artificial intelligence capabilities to streamline channel partner's data incorporation, helping customers make more rapid and effective decisions. Recent updates provided holistic improvements to E2open's intelligent applications:

- Channel shaping with extended visibility and site-wide search capabilities.
- Demand sensing and business planning by bringing AI-enhanced automation to forecasting techniques with adjustments for seasonal demand.
- Global trade management with built-out compliance coverage.
- Transaction and logistics by enhancing ocean booking with extended insurance offerings and shipping guarantees mitigating ocean shipping difficulties. E2open's transportation management system (TMS) also streamlines international shipping by providing improved parcel shipment trade compliance data.
- Collaborative manufacturing and supply management with automation of common manufacturing KPIs and QR code label creation.
- E2net with new compatibility with SAP on-premises and S/4HANA systems.

E2open's acquisition of BluJay Solutions, a supply chain management solutions provider for shippers and logistic services, expands its network ecosystem with BluJay's suppliers, carriers, and network partners, improving supply chain reliability and visibility. E2open also added strategic partnerships with COSCO, a multinational transportation conglomerate operating 423 container ships across 105 countries, and Shippeo, a European real-time transportation visibility provider with tracking of over ten million shipments across 70 countries.

E2open's holistic approach to supply chain management has created an end-to-end solution with a wide breadth of use cases, including optimizing shipping processes for improved profitability and promoting real-time supply chain visibility across internal and partner data sources. E2open's emphasis on automated supply chain planning and distribution allows companies with complex supply chains to work around disruptions with high levels of agility. Nucleus expects E2open to maintain its position as a leader in future editions of the Control Tower Value Matrix as it continues to expand its integrated partner ecosystem and invest in new solution integrations and functionalities.

## INFOR

Infor is a Leader in the 2021 edition of the Control Tower Technology Value Matrix following continued improvement to its Infor Nexus Control Center solution. Control Center is Infor's end-to-end control tower solution, containing both sense and respond functionality to enable continuous supply chain management. Running on Nexus, Infor's global supply chain management platform, Control Center hosts over 74,000 businesses across various industries, including automotive, aerospace and defense, fashion, high technology, industrial manufacturing and machinery, retail, transportation, and wholesale. Because a large portion of supply chain data originates from external organizations, Infor provides customers with a network of partner ecosystems to incorporate both physical and financial elements from across the entire supply chain in real-time. Infor differentiates itself by connecting its Infor CloudSuite ERP with the Infor Nexus network integrating merchandising, marketing, demand, and execution data to improved operations, production, sales planning, and order fulfillment. Infor Nexus enables customers to leverage predictive analytics informed by machine learning to help both identify and flexibly plan around supply chain bottlenecks. Using Infor's Control Center solution, customers gain enhanced visualizations of order flow and state, supply, demand, and capital across the network. Infor's continuous network monitoring services further facilitate supply and demand alignment by comparing forecasts, in-transit data, demand signals, stock-outs, and inventory levels.

Since the 2020 edition of the Control Tower Value Matrix, Infor improved its Infor Nexus Control Center with a focus on its user experience, early detection, and proactive decision support capabilities. Improvements include:

- Infor's next-generation UX allowing users to dive deep into orders, shipments, and products with granular transaction details at individual locations, lanes, or points in the supply chain. This UX also enables users to understand severe weather impacts on orders, shipments, and inventory using an integrated weather layer.
- Further situation planning and simulation across Infor Nexus customers and related third-party data streams facilitating broader sense and response capabilities.

- Lot traceability of individual items, lots, or batches using IoT data. This extends Infor Nexus' end-to-end visibility while providing high levels of granular detail.
- Integration with Infor Birst providing organizations with supply chain analytics and performance management. Infor Nexus customers now have access to seller fulfillment, transit performance, and financial compliance dashboards.

Infor also Improved real-time supply chain visibility with its strategic partnership with Hexagon. This partnership provided customers with greater visibility into industrial manufacturing processes and in-service assets while extending Infor's integrated partner network.

Infor Nexus Control Center maintains its position as a leader in part by leveraging Infor's breadth of industry-specific tools and seamless integration with Infor's comprehensive suite of enterprise solutions (ERP, CRM, SCM). Control Center's native compatibility with Infor ERP provides adjacency benefits as customers can see the current and projected financial and operational impacts of supply chain disruptions in real-time. Infor's continued investment into industry-specific builds of Infor CloudSuite further extends these adjacency benefits.

## KINAXIS

Kinaxis is a Leader in the 2021 Control Tower Value Matrix. Kinaxis delivers supply and demand planning, control tower, S&OP/IBP, inventory management, and Command & Control solutions for its customers in the automotive, aerospace and defense, consumer products, high-tech and electronics, industrial, life sciences, and retail sectors.

- The vendor's new investment in its RapidStart deployment strategy enables companies of all sizes to go live within 12 weeks. The new method involves deploying tailorable, pre-configured templates built based on best practices, with multiple smaller data drops of demand and supply information, which streamlines the implementation process of Kinaxis' RapidResponse platform.
- One of the core value propositions of the RapidResponse platform is its comprehensive scenario analysis tool. Kinaxis's continued improvements in its artificial intelligence (AI) and machine learning (ML) algorithms allows customers to create multiple simultaneous and interrelated scenarios and automate their execution, which accelerates the decision-making process.
- Kinaxis' solution follows a concurrent planning methodology, which updates changes in real-time across the entire supply chain. This creates a complete end-to-end visibility model of the whole network and bridges the gap between planning and execution. The instant data synchronization across the supply network empowers planners to tie local decisions to global KPIs.

- RapidResponse provides users with customizable decision triggers that activate and adjust supply chain decisions when certain disruptions occur. Supply chain and financial plans automatically adjust based on external and internal signals. The updated plans include new lead times and generate impact assessments to help supply chain managers balance costs and service levels.
- The updated AI/ML algorithms proactively address risk and enhance long-term planning by providing scenario analysis tools that offer accurate predictions and probabilities of likely disruptions. Kinaxis' developer studio enables users to create customizable best-of-breed applications and integrate them into the existing RapidResponse platform. Customers can also streamline their custom integration by taking advantage of Kinaxis' no-code application templates and certification to ensure it meets security standards.

Kinaxis's growing partner network drives customer success by improving its ecosystem and the combination of resources, product capabilities, and in-depth domain knowledge of its partners. Kinaxis works with a network of System Integrators ranging from large, international firms to regionally-focused consultancies to help customers mature and digitally transform their supply chains. The expertise of Kinaxis's partner network enables the vendor to serve global organizations, and better support customers' distributed teams at a local level. RapidResponse offers a personalized interface based on a user's role and responsibilities and allows for collaboration across teams. The vendor is planning on improving its user experience by enhancing its Command & Control Center with a new intuitive dashboard design and customizable capabilities. Nucleus believes that with Kinaxis' continued focus on its user interface (UI) and visualization improvements, it will continue to lead the market in usability.

## ONE NETWORK ENTERPRISES

One Network Enterprises (ONE) is a leader in the 2021 Control Tower Technology Value Matrix. The control tower vendor provides connectivity and visibility into its customer's supply chains, and its vendor's partner networks. One Network supports suppliers, manufacturers, and distributors in a wide range of industries, such as retail, high tech, healthcare, restaurant, food services, pharmaceuticals, aerospace, defense, automotive, and transportation. ONE's unique value proposition is its global partner network, which consists of over 90,000 businesses and reinforces its unified planning and execution capabilities.

- ONE's control tower platform, NEO, utilizes a real-time grid-based architecture and a dual platform approach, which enables interoperation with all legacy and third-party applications, including blockchain technologies. This provides a holistic real-time view for the user and invites collaboration among partners. NEO's real time SVOT platform creates true end-to-end visibility and contract management across all



trading partners while also incorporating legacy, third party, and other network-based applications as part of the network ecosystem.

- NEO enables on-boarded organizations to instantly connect to other parties and share their supply chain information with their designated permissibility framework. Users can only see data they are allowed to see by other users.
- One Network has enhanced its NEO platform and AI predictive capabilities with the implementation of new supply chain planning (SCP) and execution functions called “NEO Intelligent Agents.” The new features improved the automation and prescriptive features of the fulfillment (global supply-demand matching), transportation, and last-mile delivery sections. NEO Intelligent Agents enable users to automatically develop alternative schedule and allocations options based on events and price fluctuations, further improving an organization’s supply chain resilience.

ONE’s ongoing improvements to global inbound and last-mile support allow products and materials to be tracked with automated serial numbers to establish accountability at every stage. In addition, with the integration of IoT devices, NEO notifies relevant parties of temperature variations and physical impact events for sensitive or fragile assets. Nucleus expects One Network will continue leading in functionality because of its investments in its network of networks approach and machine learning capabilities.

## EXPERTS

### ELEMICA

Elemica is an Expert in the 2021 Control Tower Technology Value Matrix. The vendor delivers supply chain planning (SCP) solutions to customers in the chemicals, oil and gas, automotive, and pharmaceuticals industries. The control tower platform is a combination of five different solutions, such as Buy, Move, Sell, Assure, and See, and their connectivity modules.

- The Buy solution enables users to connect directly to a supplier’s ecosystem and share data in real-time. This optimizes the procurement process and balances inventory levels.
- The Move suite helps reduce logistics costs and risks through improved communications among partners.

- Elemica Sell connects user's sell order information directly to an ERP system and automates the order-to-cash process. This reduces order errors and consequently improves financial manageability.
- The control towers Assure component connects and automates essential quality control functions by ensuring material compliance, tracking shipments, and validating product specifications.
- Elemica See equips users with a supply chain visibility and monitoring tool, which provides actionable insights into orders, shipments, deliveries, purchases, inventory, forecasts, and projects.

The vendor aims to support network participants' replenishment, orders, scheduling, transportation, and risk and quality activities all managed through the Digital Supply Network. Elemica's integration features can on-board any partners along the supply value chain onto the control tower platform. Once a vendor is on-boarded, it becomes an integrated part of the network and can share information in real-time. This increases productivity and reduces operational delays. At the core of Elemica's network capabilities exists its Universal Translator technology, which translates and transfers millions of transaction data points in real-time. Trading partners can leverage a centralized system to gain end-to-end visibility and monitor and act on changes to avoid delays and unnecessary costs. The platform's AI capabilities can proactively warn users of disruptions and reveal relevant insights to support decision-making.

With this year's acquisition of OmPrompt, a supply chain automation solutions vendor, Elemica enhances its control tower's predictive and automation capabilities. This move also expands Elemica's customer base in the consumer goods, healthcare, and food and beverages sectors. Elemica's new application program interface (API) will help European carriers to improve their shipment visibility and communications, as it is developed specifically to meet the European Chemical Transport Association (ECTA) guidelines of chemical good logistics.

Nucleus believes that Elemica is well established as an expert and further increases its range of functionality through recent partnerships and acquisitions. Custom API expansions that specifically aim to meet government regulations provide Elemica with a competitive edge. The new technological capabilities acquired will provide added value to its customers.

## O9 SOLUTIONS

o9 Solutions is an Expert in the 2021 Control Tower Value Matrix. The vendor provides comprehensive decision management solutions with functionalities including integrated business planning, financial and operational management, and supply chain management (SCM). The cloud-native o9 digital brain platform unifies internal and external data sources

with planning and decision-making processes to develop adaptive strategies to optimize demand. Running within the o9 digital brain platform, the o9 control tower offers end-to-end supply chain management allowing planners to plan around disruptions as they occur. Using o9's Enterprise Knowledge Graph technology, companies can make a digital twin of their supply chain, including planning and predictive maintenance processes. This Enterprise Knowledge graph also provides AI-empowered modeling of a customer's supply chain with high granularity along innumerable hierarchies. o9 Solutions is tailored for the needs of large enterprises and serves numerous industries, including consumer products and goods, high tech, industrial manufacturing, medical devices, oil and gas, pharmaceuticals, and semiconductors.

Since the 2020 edition of the Control Tower Value Matrix, o9 Solutions has expanded its digital brain platform's functionalities and strengthened its partner network. Companies integrated into o9's partner ecosystem include:

- Spinnaker SCA, a supply chain strategy, planning, and operational consulting provider, extending o9's supply chain expertise and consulting capabilities.
- Chainalytics, a supply chain analytics and consulting provider, furthers o9's position in European markets by leveraging expertise overlaps.
- Gurobi Optimization, a provider of rapid mathematical optimization using its flagship product, the Gurobi optimizer. As part of o9's AI-powered digital brain platform, this improves o9's resource utilization and expands the o9 control tower's data-driven response capabilities.
- Project 44, a supply chain visibility and global transportation network provider supplying o9 with a data signal capable of improving o9's supply chain resilience with real-time tracking and delivery estimation.

By widening its partner ecosystem and geographic scope, o9 Solutions strengthens its digital brain platform's analytics, agile planning, and execution capabilities. This also improves the o9 control center's sensor data streams and AI-empowered response functionalities. With compatibility across all three major public clouds, Amazon Web Services, Microsoft Azure, and the Google Cloud, o9 Solutions provides customers the flexibility to use the cloud architecture suited for their growth strategy. Due to its breadth of integrated planning solutions, o9 Solutions draws customers looking to restructure their data streams to enable dynamic and integrated planning, including business, revenue, and supply chain management. Along with its out-of-the-box functionality, o9 Solutions has the adaptability to enable companies to write customized functions. With o9 Solutions's continued investments in its platform's performance, geographic scale, and partner network expansion, Nucleus expects future editions of the Value Matrix to likely reflect this improved value proposition.

## SAP

SAP is an Expert in the 2021 Control Tower Value Matrix. The vendor provides customers in the energy and natural resources, financial services, consumer, discrete, service, and public services industries with real-time visibility into their supply chain operations. SAP's control tower solution consists of multiple modules and uses deep analytical functionalities to help keep track of exceptions and external disturbances. The control tower solution runs on SAP's S/4 HANA cloud platform and includes SAP's Integrated Business Planning (IBP), Ariba, and Business Technology Platform solutions.

- SAP IBP combines sales and operations planning (S&OP), forecasting, demand and supply, and inventory planning. With the IBP platform, users can run simulations of demand and supply fluctuations and compare scenarios for effective decision-making. AI and machine learning (ML) algorithms enable planners to accurately predict demand and automate any changes necessary to optimize supply chain management.
- SAP's Ariba is the network aspect of the control tower solution, which enables customers to collaborate with other partners within the supply chain. Manufacturers and suppliers can share their production forecasts, orders, quality, and inventory information across the entire network instantaneously. This provides the customer with a holistic view of the supply chain and the opportunity to act on any disruptions.
- SAP's digital transformation system, Leonardo, implements new technologies, such as Internet-of-Things (IoT), ML, AI, big data, and blockchain, to the control tower platform. For example, with IoT, SAP can integrate and process numerous data points relevant to the supply chain, such as temperature fluctuations, locations updates, and inventory quality.

The vendor's control tower platform can integrate data from external ERP solutions and create intuitive dashboard visualizations on its Fiori user interface (UI). Nucleus expects SAP's continued improvements to the individual modules of its control tower solution will drive additional value for its customers and further increase its range of functionalities.

## FACILITATORS

### ALLOY

Alloy is a facilitator in the 2021 edition of the Control Tower Value Matrix. The vendor offers integration of point-of-sale demand data to inform organizations' supply chain planning, sales, and marketing decisions. Alloy serves the consumer goods industry, including

consumer electronics, toys, and food and beverage, providing a variety of planning and analytics tools related to consumer demand and retail supply chains, including its predictive control tower, Inventory Intelligence. The Inventory Intelligence product enables companies to plan around shifting consumer demand and identify inventory risks in their retail supply chain and e-commerce network. This allows companies to improve profitability by making data-driven decisions to identify execution issues and future sales opportunities. Alloy's Inventory Intelligence product helps organizations optimize their supply for each location within their network minimizing risks of potential disruptions and working with internal and external partners to resolve exception events.

Over the past year, Alloy has expanded the capabilities of its predictive control tower, improving its value proposition for businesses in the consumer goods industry with improvements including:

- Unit of measure conversion streamlining inventory assessment across all levels of the supply chain.
- Explicit and implicit shipping lane management providing an end-to-end graph of a company's supply chain by dynamically mapping customers to suppliers.
- Simulations allowing companies to identify future shortages or build-ups and implement scenario planning.
- Order and line-item level matching to provide updates to customers and suppliers regarding the metadata of their associated orders.
- Order and line-item visibility which gives granular insights into supply chain bottlenecks and inventory build-ups.

As Alloy continues to invest in expanding its partner ecosystem and improving its Inventory Intelligence product's industry capabilities, Nucleus expects customer's value propositions to rise and be potentially reflected in future editions of the Control Tower Value Matrix.

## COUPA

Coupa is a facilitator in the 2021 edition of the Control Tower Value Matrix following its acquisition of supply chain design and planning provider LLamasoft. Coupa has integrated its vast transactional spend data while continuing investment into the control towers AI-enhanced decision-making capabilities to create a comprehensive Business Spend Management platform. The Coupa control tower provides organizations with a digital twin of its supply chain leveraging data integration to enable visualization, modeling, and application building. Serving industries including automotive, healthcare, financial and business services, food and beverage, industrial and process manufacturing, oil and gas,

retail, and technology, the platform centralizes operational data and evaluates key decisions to optimize the organization's production and distribution strategy.

With the acquisition by Coupa, the control tower solution will benefit from consolidation with the vendor's other business spend management applications, including strategic sourcing, contract management, contingent workforce, treasury management, and spend analysis. The control tower will also gain access to Coupa's partner ecosystem, providing more holistic data and improving sense and response reliability. Coupa's continued investment in expanding the control tower's market scope and AI and machine learning capabilities will likely improve the value proposition and positioning in future editions of the Control Tower Value Matrix.

## MPO

MPO is a facilitator in the 2021 Control Tower Technology Value Matrix. The vendor offers a full suite of multi-party orchestration solutions to B2B, B2C, and D2C customers in the high-tech, industrial manufacturing, healthcare, pharmaceutical, wholesale distribution, logistics services, and retail industries. MPO's control tower solution integrates ERP systems, warehouse management systems, carrier systems, trading partners, and third-party applications to provide users with complete end-to-end visibility and control and bridge the gap between planning and execution.

- One of the unique value propositions lies in MPO's unified platform. Most control tower solutions offer various modules with different user interfaces and data metrics. MPO's control tower is built from the bottom up to be a cohesive solution, with one user interface and standardized procedures. Customers are equipped with tools to monitor and manage orders in transit, from sourcing to last-mile delivery to invoicing.
- The control tower platform enables users to set custom milestones and alerts to stay up-to-date on upstream, downstream, and return order flows. MPO supports all order types, distribution channels, and logistic modes, such as order management, e-commerce fulfillment, reverse logistics, spare parts management, network inventory management, supply management, and transport management for road, rail, air, and sea.
- The centralized cloud database is the backbone of the control tower platform and is responsible for real-time visibility as it synchronizes data from third-party applications across the entire supply chain network. This enables inventory control, order visibility, and transport optimization across all business partners and modes of shipments.

- MPO's control tower solution automates order management and supply chain activities, such as sourcing, routing, labeling, and invoicing for managers, planners, and operators to focus on value-add tasks.

New strategic supply chain partnerships further expand MPO's platform by enabling collaboration and dividing the inventory management process among them. Nucleus believes MPO's continued enhancements in its range of capabilities, such as AI/ML prediction and scenario analysis, will improve its positioning in functionality.

## CORE PROVIDERS

### ELEMENTUM

Elementum is a Core Provider in the 2021 edition of the Control Tower Value Matrix. The vendor offers its Elementum Orchestration platform to combine a company's internal and partner data streams enabling real-time supply chain visibility. Users can leverage this platform by coordinating planning processes with suppliers, logistics providers, and manufacturers across the food and beverage, healthcare, manufacturing, and retail industries. Elementum matches data across each instance in the network providing users with a single version of the truth. This unified operational ecosystem also helps users predict potential supply chain exceptions with access to numerous external data streams, including geopolitical events, oil prices, order status, product availability, and weather. Elementum also boasts collaborative planning capabilities through its Virtual War Rooms, allowing users to make collaborative forecasts and simulations to resolve disruptions.

### SHIPITSMARTER

ShipitSmarter is a Core Provider in the 2021 Control Tower Technology Value Matrix. The vendor provides supply chain management (SCM) solutions to customers across a variety of high-value industries, such as MedTech and Pharmaceuticals. ShipitSmarter's control tower solution specializes in shipment lifecycle management and offers a variety of functionalities and modules. Users are equipped with financial, transportation, carrier, and freight management tools.

- The platform's core value lies in the reduction in complexity of a client's logistics process. The control tower acts as a black box that tracks all key data points associated with the shipping process. With an end-to-end view between shipment carriers and the client, the platform provides comprehensive analytics for accurate predictions in ETA's, costs, and service levels.

- ShipitSmarter has partnerships with all major shipping carriers in Europe and maintains a constant flow of information exchange to keep track of supply transportation changes. All relevant shipping details are synchronized in real-time to the control tower platform via an application programming interface (API), electronic data interchange (EDI), and email integrations. The platform automatically sends out alerts to a user and notifies them if there are any deviations in shipping costs, service levels, weight size, and delivery times.
- Users can leverage an intuitive dashboard to visualize the entire shipping supply chain and make effective short- and long-term planning decisions.
- Other notable features of the control tower solution include label printing, rate calculations, proof of delivery notifications, quote management, freight auditing, and performance management.

ShipitSmarter is planning to enhance its existing platform to include IoT and AI/ML capabilities that will enable organizations to perform detailed scenario analyses and improve forecasting. This potentially positions ShipitSmarter to compete with larger control towers vendors in functionality and expand its customer base globally. Nucleus believes organizations with niche requirements in transportation management can continue to benefit from their ShipitSmarter deployments and eliminate any inefficiencies in the logistics process.

## VIEWLOCITY

Viewlocity is a Core Provider in the 2021 version of the Control Tower Value Matrix. The vendor offers a control tower solution capable of monitoring an organization's supply chain in real-time, providing analysis with data-informed KPIs, and offering prospective solutions to optimize for supply chain disruptions. Viewlocity offers a variety of management solutions, including ones related to inventory and assets, supply chain, order lifecycle, and suppliers. The vendor couples this with various performance optimization solutions, including Supply Chain Design, Logistics & Transportation, and Planning & Production. Viewlocity's control tower solution helps streamline customers' distribution and transportation processes across a wide range of industries, including aerospace and defense, automotive and industrial, consumer goods, high tech and electronics, manufacturing, retail, and third-party logistics.