Quadrant Knowledge Solutions

Supply Chain Management, Procurement and Retail

SPARK Matrix™: Global Supply Chain Inventory Optimization (IO)

Market Insights, Competitive Evaluation, and Vendor Rankings

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Executive Overview

Quadrant Knowledge Solutions' SPARK Matrix: Global Supply Chain Inventory Optimization, 2023 research includes a detailed analysis of the global market regarding short-term and long-term growth opportunities, emerging technology trends, market trends, and future market outlook. This research provides strategic information for technology vendors to better understand the market supporting their growth strategies and for users to evaluate different vendors' capabilities, competitive differentiation, and market position. The research includes detailed competition analysis and vendor evaluation with the proprietary SPARK Matrix analysis. SPARK Matrix™ includes ranking and positioning of leading global supply chain inventory optimization vendors with a global impact.

Market Dynamics and Overview

Quadrant Knowledge Solutions defines a Global Supply Chain Inventory Optimization as “The practice of maintaining the most ideal level of inventory, keeping the right trade-off between capital investment and service-level goals, across multiple Stock Keeping Units (SKUs). Stock level optimization also takes into consideration the volatility, risks, and probable disruptions in the supply chain and reduces unnecessary costs, stockouts, and overstocking”.

In response to technological development, the adoption of cloud is booming in the field of Global supply chain Inventory optimization. Adoption of the cloud enables businesses to access real-time inventory data to make decisions based on demand and supply conditions. Global supply chain Inventory optimization platforms can help organizations free up working capital during times of expansion and cut expenses and ensure liquidity during times of economic crisis. Fulfilling the customer’s orders without delay leads to increased customer satisfaction which can be done by maintaining optimal stock levels. Also, it provides a methodical and statistical approach to efficiently managing supply chain risks. It enables educated trade-offs between service aims and inventory levels to maximize productivity and profitability. It eventually leads to increased inventory turns, lower inventory holding costs, and higher levels of customer satisfaction.

Traditionally, organizations have struggled with inventory optimization because supply chain sites frequently hold excess inventory to avoid stock outs. These buffers exist to compensate for variations in supply and demand as well as inaccurate information about inbound supply and outbound demand plans, forecasts, information lead times, and actuals. In the absence of an integrated, real-time view of customer demand and supply changes, the “bullwhip effect” can occur, in which uncertainty at each tier of supply leads to inflated stock levels for each successive upstream tier. To make matters even more complicated, many organizations rely on enterprise-centric systems that can only plan and manage inventory within the silo of a single ERP instance and are incapable of optimizing across multiple ERP instances within the enterprise or across the extended enterprise.

Following are the key capabilities of Global Supply Chain Inventory Optimizations:

- **Inventory forecasting –** The platform provides inventory forecasting with high accuracy to anticipate demand patterns using historical data and trends in the market. This enables businesses to make decisions suitable to fulfill the market demand as well as to maintain optimal inventory to reduce incurring costs.

- **Unified Data management –** The platform acknowledges personal data within systems and assists in data storage and sharing mapping (data mapping). Furthermore, the platform collects data from various product distribution sources in order to eliminate inconsistencies and redundancy and generate accurate forecasts.

- **Scenario modeling and Stimulation –** The platform provides scenario modeling to make decisions by analyzing different what-if scenarios. Advanced modeling techniques enables businesses to find the impacts of different scenarios and change the business strategy accordingly.

- **Sequencing and sorting of promotional orders -** To enable promotional events, the platform provides order processing, sort order by promotion ID, date, name, vendor, product, and location, and align ordering with optimal upstream and downstream product flows. The platform also provides a logical phased process for moving from the initial order through order promotion and subsequently order execution.

- **Effective inventory performance –** To measure inventory management performance, the platform provides inventory turnover ratio, demand forecasting accuracy, and perfect order performance. Inventory performance measures are provided by the platform to compare actual on-hand capital to predicted cost of goods sold.

- **Inventory monitoring, reporting, and analytics –** The platform provides reporting of key insights based on monitoring of several factors like stock levels, key performance indicators. It is then analyzed for possible improvements to reduce costs involved by giving suggestions for quantity of stocks to hold at different time periods.

- **Advanced product and location segmentation –** The platform provides advanced segmentation through inventory apportionment into segments, which aids in maximizing customer service and company profitability by implementing different inventory strategies for serving different customers associated with different channels and different products, based on their value to the organization.

- **Multi-Echelon Optimization –** The platform provides a scalable solution that can identify and maintain desired service levels with optimal inventory levels and investments based on constantly fluctuating demand. MEIO also helps in solving the problem across the entire supply chain by creating a probability- based model of demand and inventory.

Competitive Landscape and Analysis

Quadrant Knowledge Solutions conducted an in-depth analysis of the Global Supply Chain Inventory Optimization solutions vendors by evaluating their products, market presence, and value proposition. The evaluation is based on primary research with expert interviews, analysis of use cases, and Quadrant's internal analysis of the overall Global Supply Chain Inventory Optimization. This study includes an analysis of key vendors, including Anaplan, BlueYonder, E2open, GAINS, Impact Analytics, Infor, Kinaxis, Logility, Oracle, QAD DynaSys, SAP, SAS, and ToolsGroup.

Anaplan, GAINS, Impact Analytics, Logility, Kinaxis, QAD DynaSys, and ToolsGroup are the top performers and 2023 technology leaders in the global IO solution market. These companies provide a comprehensive technology portfolio with the breadth and depth of solutions to support a variety of industry-specific and customized user-specific use cases. Many of these players are also frontrunners in providing modern & open architecture, comprehensive out-of- the-box capabilities such as easy-to-use configurable user interface and dashboard, centralized repository, advanced analytics, and integration & interoperability.

Anaplan inventory management and optimization ensures better service levels by allowing organizations to choose the optimal service level for each finished good within a user-defined product set at a customer-facing site to achieve a specific goal. This set of objectives and constraints includes objectives. constraints. reduce costs.

GAINS inventory optimization solution utilizes advanced analytical capabilities, such as machine learning and statistical modeling, to use available data for the optimization of inventory. It assists organizations in ensuring the right amount of inventory is available at the right time, resulting in balanced or maintained inventory levels across the supply chain.

Impact Analytics Inventory Optimization solution ensures targeted service levels are achieved. It does so with the help of AI-enabled inventory planning software that uses historical data, demand patterns, and lead time, enabling businesses to make data-driven decisions, enhance supply chain efficiency, and drive overall operational performance.

Logility's inventory planning and optimization solution changes the inventory from a source of extra expense to a source of competitive advantage by creating,

assessing, and optimizing inventory strategies and tactics such as calculating reorder point, and demand forecasting across all supply chain networks. Some of the key technological differentiators includes prescriptive analysis of inventory stocks and what-if analysis.

Kinaxis's inventory planning & optimization solution assists organizations in ensuring the right amount of inventory at the right time resulting in reduced or maintained inventory levels across the supply chain while monitoring other metrics such as revenue-at-risk and on-time delivery.

QAD DynaSys inventory optimization platform assists organizations in deciding the right level and combination of inventory types across multiple nodes in the supply chain network. QAD's ERP software provides capabilities such as demand forecasting, inventory optimization, and replenishment planning, to help businesses achieve their inventory goals.

Toolsgroup's proprietary analytical correlations between inventory and customer service levels have observed to be particularly predictable, even for items with slow moving and cyclical demand. This enables the system to optimize even very vast assortments, including products in the "long tail," by balancing stocks across multiple locations and bill of materials levels (BOM).

BlueYonder, E2open, Infor ,Oracle, SAP, and SAS have been positioned as the strong contenders in the 2023 SPARK Matrix™ of the Global Supply Chain Inventory Optimization market. These companies provide comprehensive technology capabilities and are rapidly gaining market traction across industry and geographical regions.

Blue Yonder offers Luminate Platform that integrates technologies, such as microservices, analytics & insights, warehouse data cubes, data management, user experience, workflow & orchestration, control tower, IoT, and cross-platform integration with AI and machine learning technologies to provide connected supply chain solutions. The advanced, seamlessly integrated TMS, Labor, and Warehouse Management solution helps organizations streamline and optimize their end-to-end supply chain into intelligent manufacturing, dynamic transport, digital and automated warehousing, and smart retail.

E2open offers integration with demand-driven planning and optimization suite that enables easier collaboration between team members because data moves

seamlessly among a tightly integrated technology suite. It also helps in automating consensus planning that improves forecast accuracy and reduces inventory through communication and collaboration with a structured forecasting workflow.

Infor IBP can also leverage Infor Ming.le that enables and their supply chains collaboration and communication in the organizations. Additionally, Infor cloud technologies enhances the availability of the solution for the end-users across various locations and devices. MEIO offered by Infor IBP Inventory Optimization solution based on demand variations across all nodes, analyses the whole supply chain and finds the best inventory Furthermore, MEIO allows end-users to simultaneously monitor the arriving and departing flow of material, resulting in lower inventory costs while maintaining service levels.

Oracle Inventory Optimization is a robust cloud-based inventory planning solution to decide the optimal combination of inventory by considering various factors such as demand variability and supply lead time variability. The solution provides various key capabilities including SKU rationalization, greater visibility across supply chain and stochastic optimization technology.

SAP Inventory Planning and Optimization solution assists organizations to follow a set of best practices to maintain an optimal mix of inventory the inventory with minimal carrying cost. Additionally, SAP IBP offers organization with a wide range of capabilities that help organizations in managing the supply chain risk by reducing unessential investment in buffer stock. The key differentiators of Inventory Optimization solution offered by SAP are multi-stage optimization and Embedded Analytics.

SAS offers integration with demand-driven planning and optimization suite that enables easier collaboration between team members because data moves seamlessly among a tightly integrated technology suite. It also helps in automating consensus planning that improves forecast accuracy and reduces inventory through communication and collaboration with a structured forecasting workflow. The primary drivers for global supply chain inventory optimization market growth continue to be growing business and operational complexities due to e-commerce and omnichannel fulfillment requirements. Additionally, Organizations must handle distributed data and inventories, negotiate a complex network of locations and bills of materials (BOMs), and configure hundreds of components. Furthermore, if businesses continue to rely on obsolete systems that do not allow robust and adaptive collaboration, they may be compelled to make key decisions without knowing how they will affect corporate-wide KPIs and objectives.

Key Competitive Factors and Technology Differentiators

Followings are the key competitive factors and differentiators for the evaluation of Global Supply Chain Inventory Optimizations and vendors. While a majority of the inventory optimization vendors may provide all the core functionalities, the breadth and depth of functionalities may differ by different vendors' offerings. Driven by increasing competition, vendors are increasingly looking at improving their technology capabilities and overall value proposition to remain competitive. Some of the key differentiators include:

- **Multi-Echelon Inventory Optimization-** Vendors are focusing on MEIO solutions to efficiently set inventory levels to accommodate forecasted demand. This enables organization to keep inventory levels low, move inventory as quickly as possible, and ensure high service levels for customers. MEIO provides a scalable solution that can identify and maintain desired service levels with optimal inventory levels and investments based on constantly fluctuating demand. Optimization requires continuous balancing of supply and demand across the entire supply chain network.

- **Advanced automated data collection -** Real-time visibility is an essential live information that allows organizations to track the path of goods and their precise location at any given time. RFIDs are being used instead of barcodes in today's organizations to automate data collection and reduce human effort and error. Vendors are focusing on getting end-to-end visibility to help streamline the supply chain by quickly detecting, reporting, and resolving operational anomalies. Shippers can also track assets and shipment status in real time, with maximum traceability. RFID improves the visibility of equipment, inventory, and business processes.

- **Scenario-based optimization-** Users should look for vendors who provide Scenario-based optimization capability, which allows for simple "what-if" analyses and simulates multiple service strategies and operating levels such as day-to-day implementation processes, decision-making, and planning that occur to keep the supply chain operational. Vendors should focus on innovating their platform to help them meet forecasted demand by maintaining low inventories at all levels, including warehouse, distributor, and retailer.

- **Adoption of Product level Classification-** With the growing demand for an efficient and cost-effective supply chain, the organization has made significant efforts to improve inventory systems and overall inventory management. Vendors should concentrate on systematically validating and verifying inventory disruption in the future by identifying problem areas with the highest payoff and prioritizing problems. Pareto or ABC analysis assists organizations in organizing their workloads and determining where to best utilize resources to optimize results. It helps organization to identify the most valuable products that match their customers' demand, control, and allocate resources efficiently, reduce obsolete inventory, and increase sales.

- **Integration and Interoperability-** Seamless integration and interoperability with the organization's existing technologies are amongst the most crucial factor impacting technology deployment & ownership experience. Inventory optimization management has become an indispensable part for many successful business owners who recognize the importance of accurate inventory management. The rise of connected devices and smart systems isn't just about collecting data; it's also about being able to use that data to improve operations. Monitoring devices on production line machines, for example, that track vital maintenance statistics must link with maintenance management systems so personnel may recognize warning indications and schedule work to avoid a disruption.

- **Sophistication of technology –** Users should consider an inventory optimization solution that provides comprehensive capabilities such as multi-echelon inventory optimization to understand organization reorder levels and supply planning, savings tracking to set goals and track progress, and advanced analytics to gain actionable insights. Inventory optimization suppliers are preparing to offer full capabilities at various levels of growing technology.

- **Managing service inventory to improve performance-** Leading organizations are focusing on service inventory management planning, controlling, and monitoring the level of stock or inventory to ensure organizational service goals. By managing service inventory effectively, organizations can improve their performance in terms of quality, cost, and delivery. The success of any organization depends on its ability to provide products or services that meet customer needs and expectations.

- **SKU rationalization –** The organization is primarily focused on SKU rationalization, which leads to smarter business decisions and improves several aspects of a company's operations, including inventory carrying costs reduction and streamlined inventory management workflows. To remain competitive, leading vendors are focusing on increasing fill rates and reducing inventory levels through cost-cutting measures.

- **Supply Planning -** The leading organization is focusing on the supply planning which includes distribution, manufacturing, and procurement operations that aids in streamlining operations, enhance efficiency, avoid delays, and bring down operating costs. Vendors are focusing on determining how to best fulfil the requirements created from the demand plan and fast-paced the flow of inventory across the supply chains.

- **Cloud- based Solutions:** Cloud-based inventory optimization solutions are on the rise and becoming increasingly popular as they offer businesses numerous advantages like on-premises solutions, such as scalability, flexibility. Furthermore, it provides visibility between various parties involved in the supply chain like suppliers ,distributors about the real time data.

- **Adoption of Data Science Models –** The organization is focusing on advanced artificial intelligence (AI) and machine learning (ML) techniques, such as neural networks and deep learning, to assist businesses in avoiding stockouts and overstocking, as well as minimizing inventory holding and shortage costs. Furthermore, the vendor is concentrating on analytics-based inventory planning and the calculation of optimal safety stock across storage and selling locations, as well as inventory replenishment time for each inventory item.

- **Prescriptive analysis on inventory replenishment –** Leading vendors are focusing on calculating the optimal purchasing time for each inventory item as well as the optimal time of inventory reallocation between various manufacturing facilities, warehouses, distribution centre, trading partner locations, points of sale, and so on. It aids in providing real-time visibility across the supply chain as well as analyzing historical stockout data.

SPARK Matrix™: Strategic Performance Assessment and Ranking

Quadrant Knowledge Solutions' SPARK Matrix provides a snapshot of the market positioning of the key market participants. SPARK Matrix provides a visual representation of market participants and provides strategic insights on how each supplier ranks related to their competitors, concerning various performance parameters based on the category of technology excellence and customer impact. Quadrant's Competitive Landscape Analysis is a useful planning guide for strategic decision makings, such as finding M&A prospects, partnerships, geographical expansion, portfolio expansion, and similar others.

Each market participant is analyzed against several parameters of Technology Excellence and Customer Impact. In each of the parameters (see charts), an index is assigned to each supplier from 1 (lowest) to 10 (highest). These ratings are designated to each market participant based on the research findings. Based on the individual participant ratings, X and Y coordinate values are calculated. These coordinates are finally used to make the SPARK Matrix™.

Technology Excellence	Weightage	Customer Impact	Weightage
Sophistication of Inventory Management	15%	Product Strategy & Performance	20%
Effectiveness of Inventory Segmentation	15%	Market Presence	20%
Scenario Modelling and Simulation	20%	Proven Record	15%
Inventory Forecasting Accuracy	15%	Ease of Deployment & Use	15%
Inventory Monitoring, Reporting and Analytics	10%	Customer Service Excellence	15%
Scalability	5%	Unique Value Proposition	15%
Integration & Interoperability	10%		
Vision & Roadmap	10%		

Evaluation Criteria: Technology Excellence

- **Sophistication of Inventory Management:** Evaluated based on breadth of inventory assessment. (eg- DRP, MEIO and many more)
- **Effectiveness of Inventory Segmentation:** Evaluated based on depth of inventory assessment (e.g.- SKU level, location, product attributes.)
- **Scenario Modelling and Simulation:** Evaluation of the ability to identify, access various events, formulate the most successful roadmap while considering various inventory management performance indicators.
- **Inventory Forecasting Accuracy:** Evaluate based on historical data, seasonality, trends, and market changes capturing.
- **Inventory Monitoring, Reporting and Analytics:** Evaluates based on real-time visibility into inventory levels, stockouts, and order status, and send alerts and notifications to users when critical inventory events occur.
- **Scalability:** Capacity to scale up or down based on change in volume of data, and number of users.
- **Integration & Interoperability:** The ability to offer a product and technology platform that supports integration with multiple best-of-breed technologies, provides prebuilt out-of-the-box integrations, and open API support and services.
- **Vision & Roadmap:** Evaluation of the vendor's product strategy and roadmap with the analysis of key planned enhancements to offer superior products/technology and improve the customer ownership experience.

Evaluation Criteria: Customer Impact

- **Product Strategy & Performance:** Evaluation of multiple aspects of product strategy and performance in terms of product availability, price to performance ratio, excellence in GTM strategy, and other product-specific parameters.

- **Market Presence:** The ability to demonstrate revenue, client base, and market growth along with a presence in various geographical regions and industry verticals.

- **Proven Record:** Evaluation of the existing client base from SMB, mid-market and large enterprise segments, growth rate, and analysis of the customer case studies.

- **Ease of Deployment & Use:** The ability to provide superior deployment experience to clients supporting flexible deployment or demonstrate superior purchase, implementation, and usage experience. Additionally, vendors' products are analyzed to offer a user-friendly UI and ownership experience.

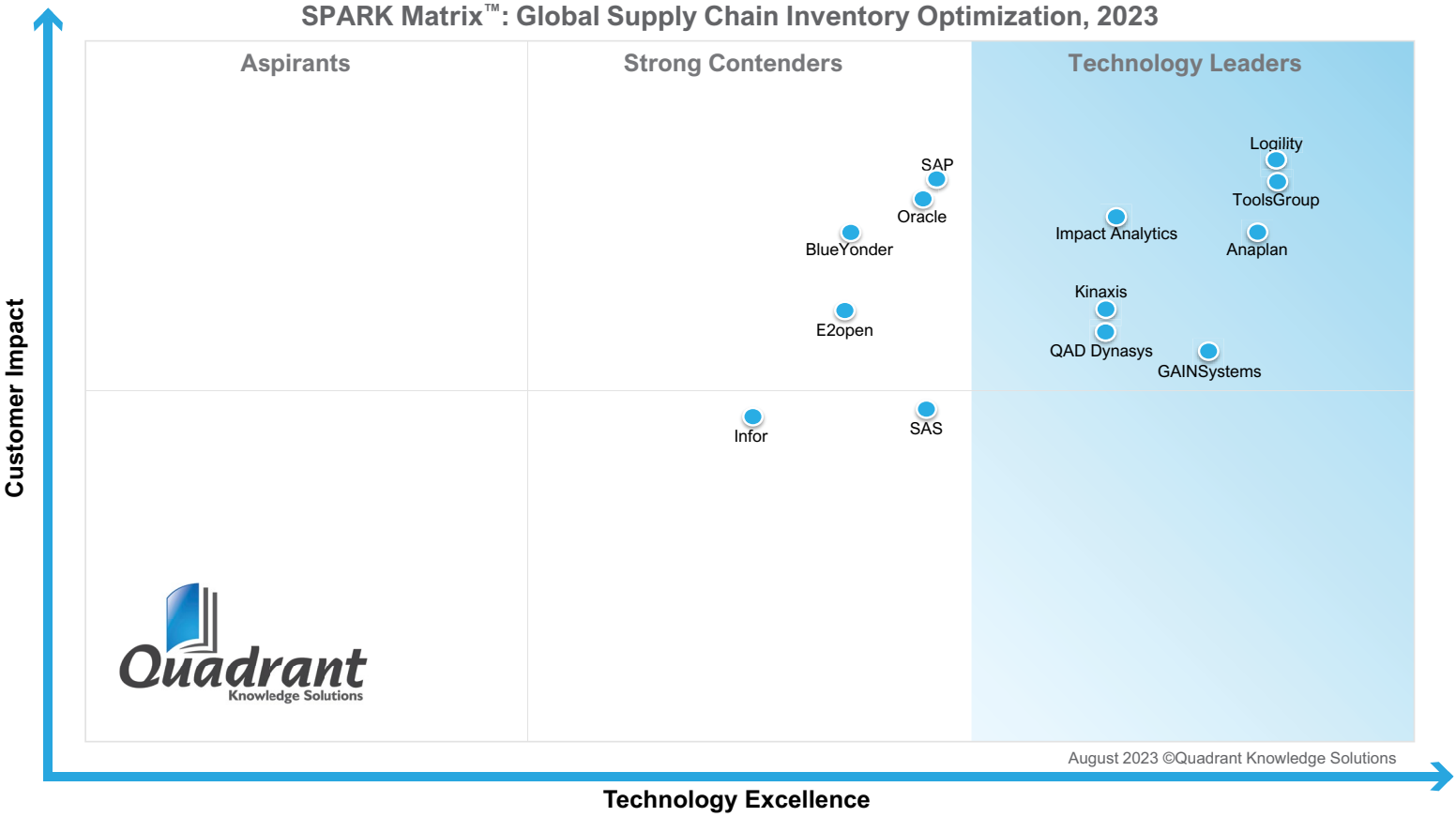
- **Customer Service Excellence:** The ability to demonstrate vendors' capability to provide a range of professional services from consulting, training, and support. Additionally, the company's service partner strategy or system integration capability across geographical regions is also considered.

- **Unique Value Proposition:** The ability to demonstrate unique differentiators driven by ongoing industry trends, industry convergence, technology innovation, and others.

SPARK Matrix™: Global Supply Chain Inventory Optimization

Strategic Performance Assessment and Ranking

Figure: 2023 SPARK Matrix™
(Strategic Performance Assessment and Ranking)
Global Supply Chain Inventory Optimization



Vendor Profiles

The following vendor profiles have been written based on the information provided by the vendor's executives as part of the research process. The Quadrant research team has also referred to the respective company's website, whitepapers, blogs, and other sources for writing the profile. A detailed vendor profile and analysis of all the vendors, along with various competitive scenarios, are available as a custom research deliverable to our clients. Users are advised to directly speak to respective vendors for a more comprehensive understanding of their technology capabilities. Users are advised to consult Quadrant Knowledge Solutions before making any purchase decisions regarding global supply chain inventory optimization and vendor selection based on research findings included in this research service.

ToolsGroup

URL: https://www.toolsgroup.com/

Founded in 1993 and headquartered in Boston, Massachusetts, USA, ToolsGroup is a provider of supply chain planning and demand analytics software that helps companies to optimize their global inventory. ToolsGroup helps manufacturers, distributors, and retailers worldwide to overcome the gap between demand and supply. ToolsGroup offers a wide range of solutions, such as demand forecasting & planning, inventory optimization, demand sensing & allocation, merchandise financial planning, replenishment, assortment planning, production & capacity planning, pricing, sales & operations planning, and promotion management. ToolsGroup's inventory optimization capabilities include inventory modeling, service-driven optimization, multi-echelon inventory optimization, probabilistic forecasting, dashboarding, and visual analytics.

Analyst Perspective

Following is the analysis of ToolsGroup's capabilities in the global inventory optimization systems market:

- ToolsGroup's inventory optimization platform utilizes advanced algorithms and machine learning to analyze historical data, demand patterns, and lead time, enabling businesses to make data-driven decisions, enhance supply chain efficiency and drive overall operational performance.

- ToolsGroup's inventory optimization platform offers powerful inventory modeling solutions that enable businesses to gain insights for inventory management. The solution utilizes advanced mathematical models to simulate and optimize inventory strategies by considering various factors such as demand variability, lead times, and service level targets. It helps businesses to perform scenario analysis to evaluate the impact of different inventory policies and identify opportunities to reduce stockouts, excess inventory, and holding costs.

- ToolsGroup's Inventory Optimization platform offers a service-driven optimization solution, enabling businesses to align inventory strategies with

service-level targets. Every SKU-Location is enhanced by service-driven optimization with regard to a target service level for the specified service classes. Furthermore, it offers multi-echelon inventory optimization that optimizes inventory levels and replenishment strategies across multiple echelons, such as distribution centers and retail stores. By considering interdependencies and constraints, ToolsGroup enables businesses to achieve optimal inventory deployment and reduction of stockouts & excess inventory while improving service levels and overall supply chain performance.

- ToolsGroup's Inventory Optimization platform offers probabilistic forecasting solutions by leveraging historical data & statistical techniques to generate probabilistic demand forecasts that account for uncertainty and variability. It enables companies to reduce the complexity of demand variability and helps to achieve effective inventory management. ToolsGroup's inventory optimization platform provides a dashboard with robust visual analytics capabilities. The dashboard presents real-time inventory performance metrics, such as stock levels, fill rates, and order variability, in a user-friendly interface. It allows businesses to monitor inventory performance, identify trends, and obtain detailed insights. The visual analytics capability of ToolsGroup's inventory optimization platform enables interactive data exploration, helping users visualize inventory patterns, identify optimization opportunities, and make data-driven decisions to improve overall supply chain efficiency and customer service.

- The company's key differentiators include the usage of ML-driven AI automation for decision-making in inventory optimization. Furthermore, it leverages dynamic inventory optimization to optimize an inventory that adapts to changing market conditions, such as demand trends, seasonality, promotions, and competitor actions. Its SO99+ supply chain planning tool helps companies to streamline their supply chain and ensures product availability.

- Some of the top use cases of ToolsGroup's Inventory Optimization platform consist of reducing inventory levels without impacting service performance, improving forecasting accuracy for both fast and slow-moving SKUs, quickly adapting to changing economic conditions, creating right-size inventory,increasing forecast accuracy, collaborating with suppliers to improve delivery performance, digitalizing the planning process while streamlining day-to-day operations, and improving decision making.

- From a geographical perspective, ToolsGroup has a strong presence in

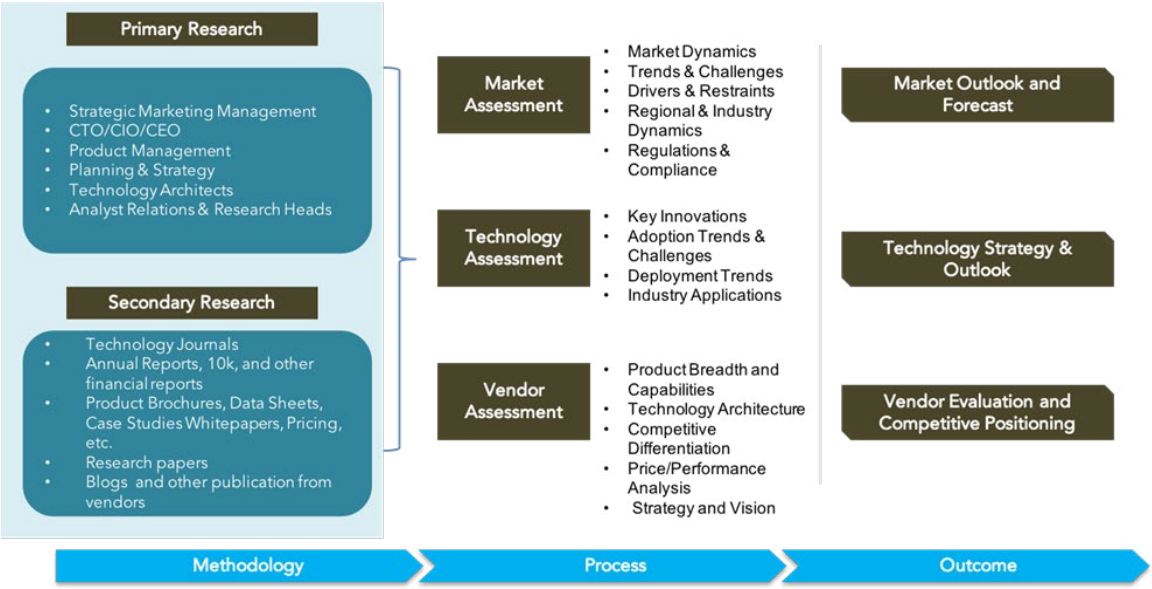
North America and Europe. The company has a fair presence in the Middle East and APAC regions. From an industry perspective, the company has a presence across various industry verticals, such as retail and eCommerce, logistics, transportation, third-party logistics, manufacturing, food & beverage, household & CPG, electric & electronics, automotive, life sciences, and aftermarket parts.

- The primary challenge faced by ToolsGroup is increased competition from emerging and well-established players. Additionally, the ToolsGroup platform's performance depends on data availability and quality to maximize the result of optimization. Implementing inventory optimization software often requires changes to the existing workflow.

- In terms of the future roadmap, ToolsGroup prioritizes providing a composable modular service-oriented architecture, reusing key capabilities across applications, and allowing customers to compose their own tech stack. Additionally, ToolsGroup is focusing on real-time data ingestion, industry connectors, and modern APIs, which would minimize onboarding complexity & costs and optimize time to value & customer ROI. It also aims to optimize the inventory optimization platform using cloud-bound technologies and configurability for extending the market and industry verticals presence.

Research Methodologies

Quadrant Knowledge Solutions uses a comprehensive approach to conduct global market outlook research for various technologies. Quadrant's research approach provides our analysts with the most effective framework to identify market and technology trends and helps in formulating meaningful growth strategies for our clients. All the sections of our research report are prepared with a considerable amount of time and thought process before moving on to the next step. Following is the brief description of the major sections of our research methodologies.



Secondary Research

Following are the major sources of information for conducting secondary research:

Quadrant's Internal Database

Quadrant Knowledge Solutions maintains a proprietary database in several technology marketplaces. This database provides our analyst with an adequate foundation to kick-start the research project. This database includes information from the following sources:

- Annual reports and other financial reports
- Industry participant lists
- Published secondary data on companies and their products

- Database of market sizes and forecast data for different market segments
- Major market and technology trends

Literature Research

Quadrant Knowledge Solutions leverages on several magazine subscriptions and other publications that cover a wide range of subjects related to technology research. We also use the extensive library of directories and Journals on various technology domains. Our analysts use blog posts, whitepapers, case studies, and other literature published by major technology vendors, online experts, and industry news publications.

Inputs from Industry Participants

Quadrant analysts collect relevant documents such as whitepaper, brochures, case studies, price lists, datasheet, and other reports from all major industry participants.

Primary Research

Quadrant analysts use a two-step process for conducting primary research that helps us in capturing meaningful and most accurate market information. Below is the two-step process of our primary research:

Market Estimation: Based on the top-down and bottom-up approach, our analyst analyses all industry participants to estimate their business in the technology market for various market segments. We also seek information and verification of client business performance as part of our primary research interviews or through a detailed market questionnaire. The Quadrant research team conducts a detailed analysis of the comments and inputs provided by the industry participants.

Client Interview: Quadrant analyst team conducts a detailed telephonic interview of all major industry participants to get their perspectives of the current and future market dynamics. Our analyst also gets their first-hand experience with the vendor's product demo to understand their technology capabilities, user experience, product features, and other aspects. Based on the requirements, Quadrant analysts interview with more than one person from each of the market participants to verify the accuracy of the information provided. We typically engage with client personnel in one of the following functions:

- Strategic Marketing Management
- Product Management
- Product Planning
- Planning & Strategy

Feedback from Channel Partners and End Users

Quadrant research team researches with various sales channel partners, including distributors, system integrators, and consultants to understand the detailed perspective of the market. Our analysts also get feedback from end-users from multiple industries and geographical regions to understand key issues, technology trends, and supplier capabilities in the technology market.

Data Analysis:
Market Forecast & Competition Analysis

Quadrant's analysts' team gathers all the necessary information from secondary research and primary research into a computer database. These databases are then analyzed, verified, and cross-tabulated in numerous ways to get the right picture of the overall market and its segments. After analyzing all the market data, industry trends, market trends, technology trends, and key issues, we prepare preliminary market forecasts. This preliminary market forecast is tested against several market scenarios and economically most accurate forecast scenario for the overall market and its segments.

In addition to market forecasts, our team conducts a detailed review of industry participants to prepare a competitive landscape and market positioning analysis for the overall market as well as for various market segments.

SPARK Matrix:
Strategic Performance Assessment and Ranking

Quadrant Knowledge Solutions' SPARK Matrix provides a snapshot of the market positioning of the key market participants. SPARK Matrix representation provides a visual representation of market participants and provides strategic insights on how each supplier ranks in comparison to their competitors, concerning various performance parameters based on the category of technology excellence and customer impact.

Final Report Preparation

After finalization of market analysis and forecasts, our analyst prepares necessary graphs, charts, and table to get further insights and preparation of the final research report. Our final research report includes information including market forecast; competitive analysis; major market & technology trends; market drivers; vendor profiles, and such others.

Client Support

For information on hard-copy or electronic reprints, please contact Client Support at

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