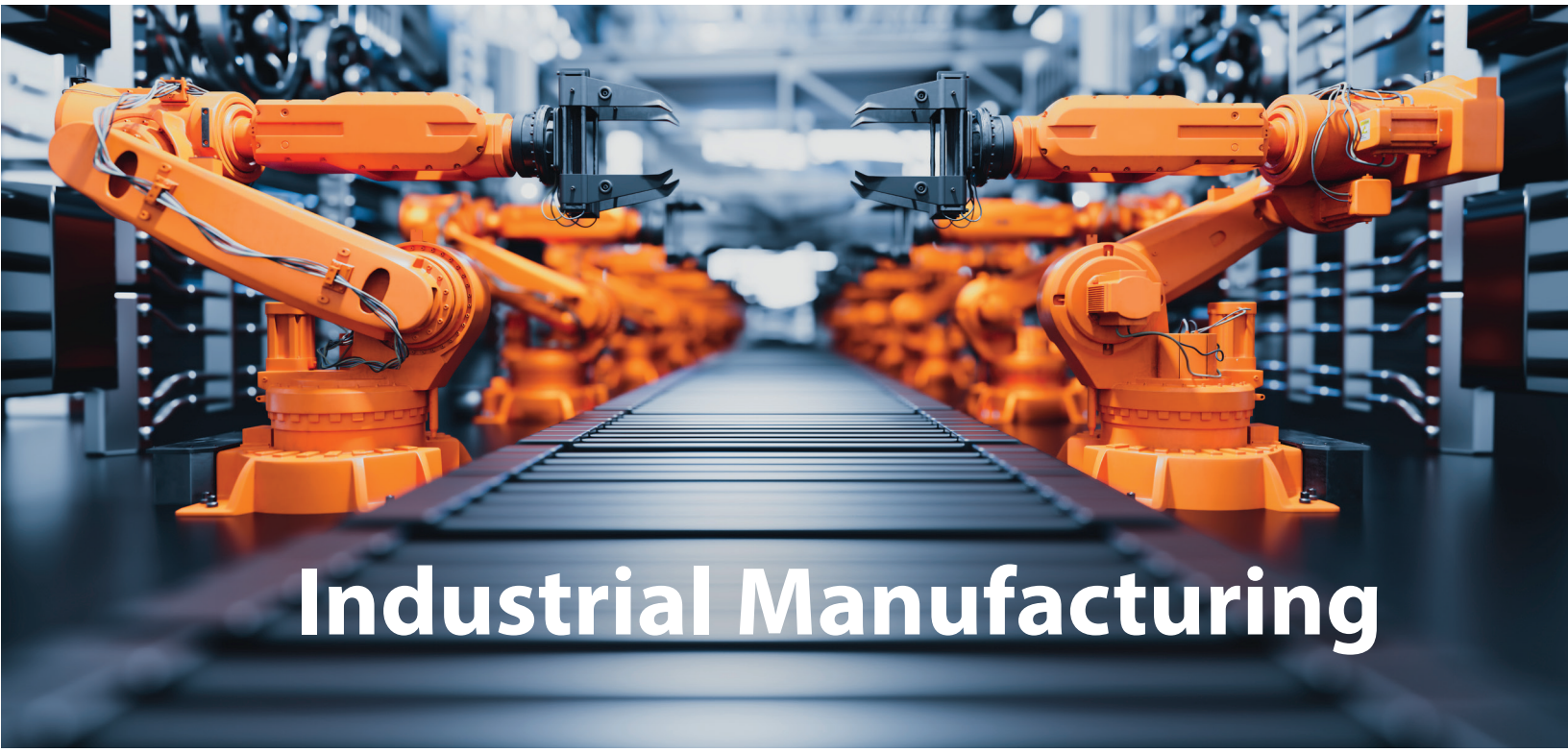

Industrial Manufacturing

Kinaxis and Genpact

How prepared are you for growth, resilience, and risk in industrial manufacturing?

The Industrial Manufacturing sector is poised for sustained growth in the foreseeable future, despite challenges stemming from economic fluctuations and geopolitical uncertainties. This sector is characterized by a diverse range of industrial and service-oriented products, including machinery for agriculture, construction, mining, as well as machinery used in food and beverage processing, textile production, and other industries.

Discover how Genpact and Kinaxis utilize their supply chain management expertise, coupled with advanced planning solutions (APS), to foster growth and fortify supply chain resilience.

Industry challenges

Scale and complexity

Industrial manufacturing encompasses extensive operations, involving the fabrication of heavy machinery, substantial equipment, infrastructure elements, and other sizable products.

Demand patterns

Demand patterns creates challenges due to market volatility, complex product portfolios, high-mix, low volume production, long product lifecycles, and limited historical data.

Spare parts and service planning

Predicting part failures involves real-time data, advanced analytics, and AI, and managing inventory is a delicate balance between costs and avoiding downtime. The need to minimize production halts, along with evolving technology and global supply chains, can result in "cannibalism" where parts are moved between machines.

Longer product lifecycles

Industrial products have long product lifecycles compared to consumer products. The design, development, and production processes may span several years due to the complexity and cost associated with the products..

Innovation

Rapid innovation and accelerated time-to-market expectations strain manufacturers and often require constant production adaptations. Globalization increases compliance challenges and intensifies global competition, demanding both agility and consistent quality from manufacturers.

Rigorous quality standards

Items produced must follow strict quality and safety norms. Shortcomings in an industrial environment can lead to various issues, from production interruptions to hazards for the workforce.

Regulatory environment

There are strict regulations due to the potential environmental and safety impact. Added pressures on energy efficiency and pollution-reduction targets present challenges in adopting sustainable manufacturing processes.

What market leaders are saying

> We selected Genpact as our strategic partner to disrupt our traditional thinking and reshape our supply chain paradigm. It excels in driving transformative supply chain strategies and enabling robust target operating models. Genpact guided us in creating a road map that seamlessly transitioned our team from Excel spreadsheets to Kinaxis, unlocking the potential for an organization-wide Sales and Operations Planning (S&OP) process.

VP OF SUPPLY CHAIN
INDUSTRIAL MANUFACTURING COMPANY

> We selected Kinaxis to give us a peripheral view of our entire supply chain. By connecting all critical areas within our organization. Kinaxis RapidResponse has allowed us to become more agile in our processes, which has also helped us navigate through global supply chain disruptions, that would have otherwise come at a significant cost to our business.

CHIEF SUPPLY CHAIN OFFICER
INDUSTRIAL MANUFACTURING COMPANY

Priority shifts

Supply resilience

A robust ecosystem is needed for sustainable growth, and limited visibility and integration across the value chain leave industrial manufacturers susceptible to supply disruptions, leading to avoidable costs in labor and overhead, inventory, and freight.

Advanced automation and robotics

Advanced automation and robotic solutions can improve efficiency, precision, and can reduce labor-intensive processes, especially in repetitive tasks. The advancements in AI, machine learning, sensors, and other technologies have made automation and robotics more accessible and versatile.

Digital twins and simulation

The use of digital twins allows manufacturers to simulate and test machinery in a digital space. By simulating production processes and supply chain scenarios, companies can expect challenges and perfect supply planning to ensure prompt delivery and minimal disruptions.

Predictive maintenance

Leveraging the internet of things (IoT) and AI, manufacturers can predict when parts of machinery will fail or require maintenance. This significantly reduces downtime and operational costs.

Modular and scalable designs

Customers are using machinery that can be easily expanded, upgraded, or customized according to their changing needs. Demand can fluctuate based on the need for different machine configurations. Modular designs mean supply chains must be agile enough to provide varied components as required.

Energy efficiency and ESG initiatives

As energy prices fluctuate, the demand for energy-efficient machinery might increase. This affects the types of products in demand and the costs of production. Energy consumption is a significant operating cost for many industries, and more energy--efficient machinery is becoming a priority.

Deep dive into industrial manufacturing specific solutions for common planning problems

Demand and supply balancing

with high-mix and low volume, regulatory, and constrained products

CHALLENGE

Aerospace manufacturing: Several prominent companies in industrial manufacturing produce complex aircraft, which involves precise engineering, advanced materials, and safety regulations. However, challenges arise from the need for highly customized aircraft designs and managing variant configurations, making demand planning and lead time management complex in this industry. Balancing supply and demand, while handling resource capacity constraints, is particularly challenging due to the wide range of products and limited quantities produced.

APPROACH

- Demand forecasting using historical data, market trends, and customer orders
- Segment and categorize parts based on characteristics, such as seasonality, volatility, and lead times
- Model constraints and configure capacity planning to include machine capacities, labor availability, material availability, lead times, and more
- Leverage constraint-based optimization to allocate resources across different parts to ensure capacities are not over committed and bottlenecks are minimized
- Enable dynamic decision-making to monitor changes in real time with demand, supply, and constraints. When an unexpected change occurs, such as a machine breakdown, leverage the APS system to run scenarios which will analyze the time and cost impact of such delays

Rapid innovation: New product introduction (NPI) and end of life (EOL) products

with multi-echelon inventory optimization (MEIO)

CHALLENGE

Medical device manufacturing: Companies that manufacture medical devices, MRI machines or radiation therapy equipment operate in the industrial manufacturing space. These products require precision, reliability, and adherence to medical regulations. Given the high capital investments and long lead times inherent to the industry, precise planning ensures optimal resource utilization and consistent product availability.

Furthermore, the industry's rapid pace of innovation mandates a flexible supply chain, allowing for the smooth phasing out of outdated products (EOL) and timely introduction of new product (NPI) advancements. Efficient inventory management, derived from accurate planning, will need to strike a balance between excessive stock, which can be costly, and stock-outs, which can compromise patient care.

APPROACH

- Perform data analysis and product segmentation by collecting historical demand data, lead times, and other relevant information for all products across different sites
- Group products based on characteristics like demand variability, lead times, and cost, while also defining the desired service level for each product category
- Utilize forecast models to predict future demand for each product and analyze the variability in both demand and supply to understand potential fluctuations
- Incorporate product life cycles (NPI and EOL) to set specific inventory policies and target service levels
- Allocate and adjust safety stock by considering factors such as product criticality, demand variability, and desired service levels through each product life cycle
- Design a multi-echelon inventory network, factoring in interactions and dependencies between different sites or locations

Spare parts and service planning

CHALLENGE

Industrial machinery manufacturing: Manufacturers in the heavy machinery sector specialize in producing industrial equipment such as bulldozers and excavators that are tailored to distinct industrial applications requiring advanced engineering. This can present logistical planning challenges in transporting such equipment, requiring coordination from both engineering and production teams.

Extended product lifecycles require a strong aftermarket planning system for predicting and stocking spare parts, but this can inadvertently lead to cannibalism, further worsening parts shortages. Striking the right balance for operational efficiency amid these challenges, involves aspects of time, application, and supply chain management.

APPROACH

- Enable predictive analytics and historical data to predict future demand more accurately for spare parts
- Analyze usage patterns, maintenance schedules, and failure rates, to anticipate when specific parts are likely to be needed
- IoT sensors and predictive maintenance technologies enable monitoring of equipment health in near real-time. Accurate predictions of maintenance requirements help schedule part replacements during planned downtime, reducing unexpected failures and associated costs
- Manage a robust product life cycle management system or policy to help track each spare part's progression from introduction to obsolescence
- Create alerts for parts that are in their end-of-life stage to ensure proactive planning for replacements or alternatives is possible, minimizing the risk of sudden unavailability — and cannibalism
- Leverage a multi-echelon inventory strategy to encompass various stocking locations within the supply chain to mitigate stockouts and reduce excess inventory

Business with a heavy project-based nature

Modular and scalable designs

CHALLENGE

Injection equipment and molding manufacturing: Industrial manufacturing in the field of injection molding equipment and product present several challenges that demand precise attention and strategic solutions. Challenges include extended lead times, intricate project management with diverse teams, scheduling complexities, and the need for precise installation. Manufacturers must focus on modular and scalable designs to accommodate shifting demands and cost pressures, all while ensuring a speedy time-to-market, inclusive of streamlined maintenance plans. Overcoming these challenges requires the integration of advanced technologies, detailed planning, and a commitment to operational efficiency. Achieving visibility across projects is crucial for optimizing supply and demand, but this remains challenging due to the dynamic nature of this sector.

APPROACH

- Utilize accurate demand forecast to anticipate project requirements
- Develop detailed planning bill of materials to capture project-specific components and dependencies and their relationships within the project, enabling precise material planning and order management
- Use advanced planning tools to simulate different scenarios, such as variations in project scope, resource availability, or supplier performance, allowing you to evaluate the potential impacts on project timelines and costs
- Identify critical paths and bottlenecks in the project timeline to allocate resources effectively
- Foster collaboration tools that share scenarios between project teams, suppliers, and stakeholders for real-time information sharing
- Optimize installation dates by considering resource availability, lead times, and customer commitments to better align with project schedules and customer expectations

Genpact + Kinaxis

The sum is bigger than its parts

Trusted by innovative brands and recognized as a leader by analysts like Gartner, IDC, Nucleus Research, Ventana Research and more, Kinaxis delivers companies the resilience and agility to make fast, confident decisions across their integrated business planning and end-to-end digital supply chains – from planning through execution. We combine human intelligence with AI and our unique concurrent planning to help companies plan for any future, monitor risks and opportunities, and respond at the pace of change.

For industrial manufacturers, Genpact improves aftermarket service operations and customer-supplier relations through connected asset as-a-service, spare parts planning solutions, and field management services on a bedrock of Data-Tech-AI.

Genpact's Industrial Manufacturing industry practitioners

- 70+ consultants with industry practitioner experience
- Average >15 years combined industry and consulting experience
- 120+ industrial manufacturing SCM current and former clients
- 40+ Kinaxis industrial manufacturing implementations

End-to-end supply chain expertise

- Data design and governance
- Supplier expansion and risk planning
- Integrated business planning
- Execution concurrency
- Scheduling, logistics, and delivery

Genpact's RapidResponse® expertise

- 65% client base crossover with Kinaxis
- Kinaxis' only full-service Value Assurance Services Provider
- Access to Kinaxis application R&D and application support

KINAXIS®

Kinaxis delivers unparalleled supply chain agility and resiliency to supply chains across the globe. We're revolutionizing planning across integrated business planning and the digital supply chain with fast, confident decision-making. We combine human intelligence with AI and concurrent planning to help companies plan for any future, monitor risks and opportunities, and respond at the pace of change.

www.kinaxis.com

genpact

Genpact (NYSE: G) is a global professional services and solutions firm delivering outcomes that shape the future. Our 125,000+ people across 30+ countries are driven by our innate curiosity, entrepreneurial agility, and desire to create lasting value for clients. Powered by our purpose – the relentless pursuit of a world that works better for people – we serve and transform leading enterprises, including the Fortune Global 500, with our deep business and industry knowledge, digital operations services, and expertise in data, technology, and AI.

Get to know us at genpact.com and on LinkedIn, X, YouTube, and Facebook.