

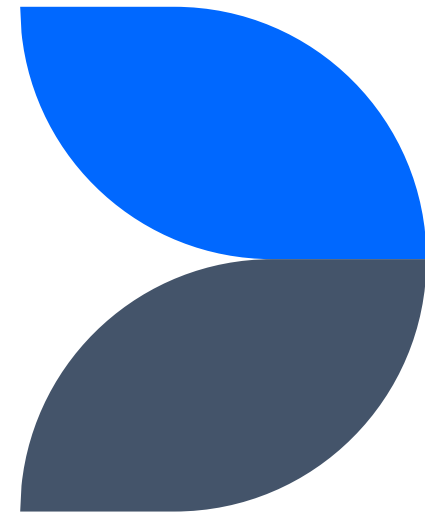
Operational Excellence in Supply Chain & Applications of AI

Global Supply Chain Excellence Summit

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Outline

- The Essence of Operational Excellence
- Key Pillars
- Key Focus Areas for Best Practices
- Achieving Operational Excellence in Supply Chain Operations
- Practical Applications of AI to Improve Supply Chain Operations



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Operational excellence in supply chain operations is **consistently delivering goods and services cost-effectively**, with a focus on **reducing non-value-adding activities** and **eliminating unnecessary operations** as well as **maximising the quality and customer satisfaction**.

It's a strategic mindset that aligns operations with broader business goals.

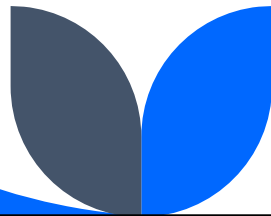
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Key Pillars *(1 out of 2)*

Supply chain excellence starts with a clear understanding of best operational practices. It's about more than just theory; it's about implementing these practices effectively.

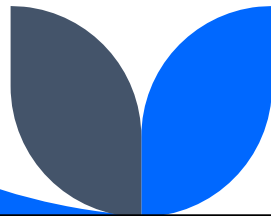
It focuses on maximising output while minimising input. Achieving operational excellence requires a combination of strategic planning and effective execution:

- **Process Optimisation:** Streamlining supply chain processes and eliminating non-value-added activities to reduce waste and increase productivity.
- **Cost Reduction:** Minimising operational costs of all supply chain operations and processes.
- **Customer-Centric Approach:** Align supply chain strategies with customers' needs.



Key Pillars *(2 out of 2)*

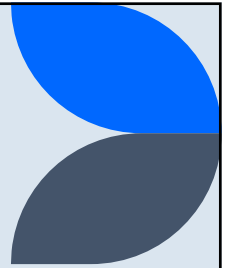
- **Time Management:** Enhancing speed and punctuality in operations.
- **Quality Assurance:** Maintaining high standards of quality throughout the supply chain to ensure customer satisfaction and minimise returns or complaints.
- **Continuous Process Improvement:** Establish a culture of ongoing process evaluation and refinement.
- **Tech Integration:** Embrace technologies like AI, IoT, and blockchain for data-driven decision-making.
- **Real-Time Data Access:** Ensure end-to-end supply chain visibility and access to real-time data across the supply chain for informed decision-making.
- **Risk Assessment and Mitigation:** Regularly assess risks and develop mitigation strategies. Enhance the supply chain's ability to withstand and recover from disruptions.



Key Focus Areas for Best Practices

- **Optimising Procurement of Raw Materials:** Efficient procurement of raw materials is key for ensuring a smooth and cost-effective supply chain.
- **Supplier Diversification:** Establish relationships with multiple suppliers for critical raw materials to reduce the risk of supply disruptions.
- **Inventory Management:** Implement automated inventory tracking that provide real-time visibility. Set reorder points based on demand forecasting data.
- **Demand Forecasting:** Invest in demand forecasting software that uses historical data and predictive analytics to predict demand accurately.
- **Transportation Efficiency:** Optimise routes, delivery schedules, and load factors to to ensure faster, reliable and cost-effective delivery operations.

Achieving Operational Excellence in Supply Chains *(1 out of 6)*



Leadership Support

Streamlining Processes

Resource Allocation

Collaboration & Partnerships

Automation

Fleet Management

Optimal Warehouse Design

Inventory Optimisation

Route Optimisation

Workforce Training

Energy Efficiency

Ensure Compliance

Tackling Challenges Head-On

Performance Measurement

Continuous Improvement

Achieving Operational Excellence *(2 out of 6)*

- **Leadership Support:** Operational excellence isn't just about tech and processes. A supportive organisational culture, strong leadership, and employee engagement are vital. Leaders need to set the tone for excellence, and employees must be empowered to contribute.
- **Streamlining Processes:** Begin by value stream mapping and documenting your current processes, identifying bottlenecks and areas of inefficiency, underlining areas for improvements. Simplify workflows, eliminate redundant steps, and optimize resource allocation.
- **Resource Allocation:** Efficiently allocate resources to achieve excellence without overspending.

Achieving Operational Excellence *(3 out of 6)*

- **Collaboration and Partnerships:** Collaborative relationships with key partners can lead to significant cost savings. By sharing info and aligning goals, companies can reduce costs associated with transportation and inventory management.
- **Automation Technology:** Invest in automation solutions to handle routine and repeated tasks and free up human resources for more strategic activities.
- **Fleet Management:** Efficiently managing your fleet can yield substantial cost savings. Implement vehicle tracking systems to monitor vehicle performance, driver behaviour, and maintenance needs. Regularly maintain vehicles to prevent breakdowns and ensure fuel efficiency.

Achieving Operational Excellence *(4 out of 6)*

- **Optimal Warehouse Design:** Redesign your warehouses for maximum efficiency considering the layout, racking systems, and material equipment to reduce labor costs, reduce distances, and maximise storage capacity.
- **Inventory Optimisation:** Strike the right balance between carrying costs and product availability. Apply effective demand forecasting to avoid excess inventory that ties up capital or stockouts that result in missed sales.
- **Route Optimisation:** Embrace dynamic routing software that adapt to real-time conditions and make quick decisions to avoid traffic congestion, weather delays and optimise delivery routes. The optimised delivery routes contribute to enhanced productivity while saving costs.

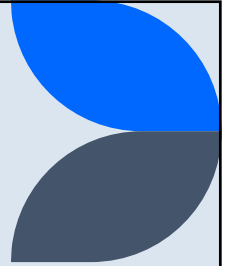
Achieving Operational Excellence *(5 out of 6)*

- **Workforce Training:** Provide training and upskilling to your team to prepare them with the latest practices and tools. Training programs should focus on enhancing productivity, reducing costs and problem-solving skills.
- **Energy Efficiency:** Improving energy efficiency in your supply chain can translate into cost savings. Invest in energy-efficient equipment, optimising delivery routes to reduce fuel consumption.
- **Ensure Compliance:** Ensuring compliance through accurate and complete documentation with regulatory requirements can avoid costly fines and delays in the supply chain. Stay updated on any changes or new requirements.

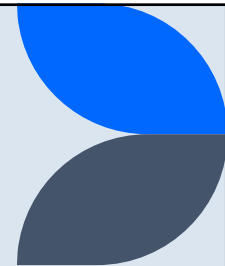
Achieving Operational Excellence *(6 out of 6)*

- **Tackling Challenges Head-On:** Challenges are opportunities for improvement. Be ready with proactive solutions for supply disruptions, regulatory changes, or market shifts.
- **Performance Measurement:** Establish KPIs to track and measure the efficiency of various supply chain processes. Monitor these KPIs regularly and make data-driven decisions.
- **Continuous Improvement:** Form cross-functional teams dedicated to process improvement. Encourage a culture of continuous improvement within your company by recognising and rewarding high-performing employees.

Practical Applications of AI in Supply Chain *(1 out of 10)*



- ❑ Leveraging AI in supply chain operations is critical for achieving supply chain excellence.
- ❑ AI transforms data into actionable insights, enhancing precision in demand forecasting, optimising inventory levels, and streamlining logistics operations, all crucial for a resilient and efficient supply chain.
- ❑ AI can lead to operational efficiency, driving smarter decision-making and predictive insights.
- ❑ Ultimately leading to enhanced performance and competitive advantage in the fast-paced global market.

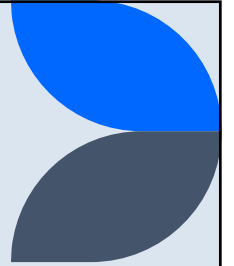


Practical Applications of AI in Supply Chain *(2 out of 10)*

1) Supply Chain Planning and Forecasting:

- **Demand Forecasting:** Analyse market trends, historical sales data, economic indicators, consumer behaviours and social media sentiment, seasonality analysis and external factors to effectively predict product demand. This approach allows for more accurate production and distribution planning.
- **Supplier Evaluation:** Evaluate supplier performance based on parameters such as delivery times, product quality and environmental impact, to create supplier scorecards and rankings. These insights help companies manage their global supply network more effectively and ensuring optimal supplier selection.
- **Risk Management:** Identify potential supply chain risks and predict disruptions by analysing supplier reliability, global news, weather reports, natural disasters or political developments that could impact its supply chain. This enables proactive adjustments to mitigate risks and ensuring supply continuity.

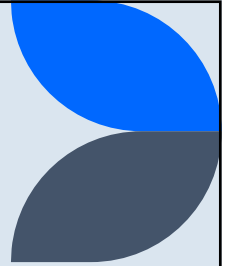
Practical Applications of AI in Supply Chain *(3 out of 10)*



2) Inventory Management

- **Stock Level Optimisation:** Determine optimal stock levels based on comprehensive and real-time data including customer requirements, past purchasing trends, weather forecasts, local events,. This allows for highly accurate stock level optimisation, reducing instances of overstocking and understocking.
- **Smart Inventory Allocation:** Use AI-driven tools for strategic inventory allocation between different logistics facilities and locations based on demand patterns, customers' requirements and logistics considerations, especially in omnichannel fulfilment.
- **Automated Reordering:** Activate automatic inventory reordering based on the analysis of inventory data, real-time stock levels and forecasted demand, taking into account factors like lead time, historical sales data, and seasonal variations.

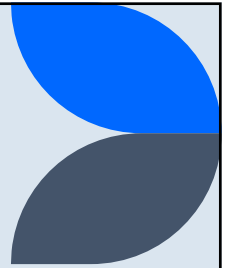
Practical Applications of AI in Supply Chain *(4 out of 10)*



3) Distribution

- **Route and Delivery Optimisation:** Optimise delivery routes, considering factors like traffic, weather, customers' requirements and delivery windows, to reduce transit times and delivery costs.
- **Load Optimisation:** Enhance the cargo loading of trucks and containers by analysing shipments. The system analyses the size, weight, and type of packages to effectively plan the loading to maximise space utilisation and minimise transportation costs.
- **Freight Matching:** Match cargo with available capacity in delivery fleet to optimise truck loads and routes, reducing empty miles and maximising efficiency.

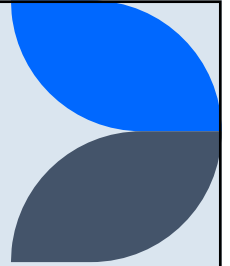
Practical Applications of AI in Supply Chain *(5 out of 10)*



4) Warehouse Automation

- **Warehouse Layout Optimisation:** Use AI simulations to design optimal warehouse layouts for faster and more efficient inventory handling. The system analyses picking paths and inventory movement to create layouts that minimise travel time and maximise efficiency.
- **Automated Picking and Packing:** Use AI-driven robots for efficient picking and packing processes. The system constantly learns and improves, optimising picking routes and reducing order processing times, increasing accuracy and reducing labor costs.
- **Workforce Optimisation:** Enhance labour productivity by forecasting workforce needs based on factors like shipment volumes and operational complexity.

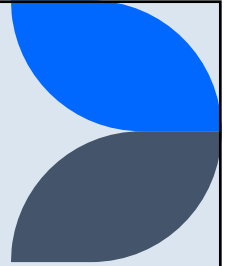
Practical Applications of AI in Supply Chain *(6 out 10)*



5) Real-time Tracking and Monitoring

- **Supply Chain Visibility:** Enhance visibility and transparency across the supply chain through IoT and AI, offering insights into shipment conditions like temperature, light exposure, and humidity, ensuring product quality and compliance with regulations.
- **Real-Time Cargo Tracking:** Provides customers and operation managers with real-time shipment tracking using data from various sources including satellite and weather data, offering data on shipping routes, transit times, and environmental impact, helping clients make smarter and data-driven decisions.

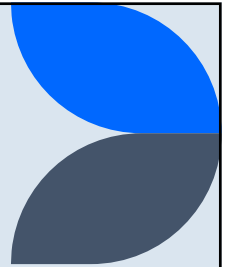
Practical Applications of AI in Supply Chain *(7 out of 10)*



6) Customer Service and Experience

- **Personalised Customer Interactions:** Analysing customer data and feedback to understand their preferences and needs, enable offering personalised services, improving overall customer satisfaction.
- **Chatbots and Automated Support:** AI-driven chatbots to provide 24/7 support and effectively handle customer service inquiries, provide shipment tracking, and offer packing advice for efficient handling of customer queries. The system can be offered on several platforms and technologies including websites and mobile applications.

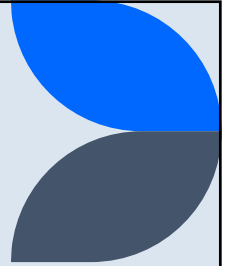
Practical Applications of AI in Supply Chain *(8 out of 10)*



7) Maintenance and Operations

- **Predictive Maintenance:** Predict vehicle and equipment maintenance needs based on analysis of data from vehicle sensors and maintenance logs. This results in reducing unplanned downtime and maintenance costs and extending the lifespan of vehicles.
- **Energy Consumption Optimisation:** Monitor energy consumption patterns in real-time and optimise energy usage in warehouses and transportation. It suggests optimisations for machinery and equipment usage, leading to energy efficiency, cost savings and sustainability.

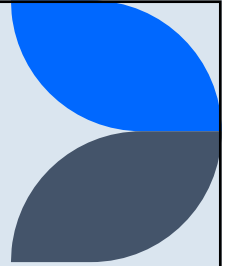
Practical Applications of AI in Supply Chain *(9 out of 10)*



8) Quality Control

- **Automated Inspection Systems:** Enable quality control and identify defects or issues in products more accurately and quickly using image recognition and visual defect detection technologies. The system uses high-resolution cameras and AI to detect even the smallest imperfections, ensuring high product quality.
- **Regulatory Compliance Monitoring:** Monitor the operations and ensure compliance with industry regulations and standards. The system ensures that all operations and processes comply with required standards and regulations, streamlining the quality assurance process.

Practical Applications of AI in Supply Chain *(10 out of 10)*



9) Data Analysis and Reporting

- **Advanced Analytics for Decision Making:** Process complex supply chain data and perform in-depth analysis real-time data including logistics, market demand, and supplier performance. The insights generated aid in making informed strategic decisions and identifying opportunities for efficiency improvements.
- **Real-Time Reporting and Dashboards:** Enable real-time reporting and interactive dashboards. This allows for enhanced visibility into supply chain performance metrics, customer preferences, operational practices and sales trends, enhancing visibility into operations and performance metrics.



Embracing practical strategies,
leveraging technology and fostering a
culture of improvement, can significantly
lead to operational excellence in supply
chains



**AI integration is a game-changer for
supply chain companies seeking to thrive
in the modern business landscape.**