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PROCUREMENT AND SUPPLY CHAIN MANAGEMENT | PSCM-027

AI-Powered Procurement & Logistics: Optimizing Supply Chain Operations

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Course content

Why Attend

Procurement and logistics functions must balance cost efficiency, supplier reliability, inventory availability, transportation performance, and customer service in increasingly complex supply networks. Traditional planning methods often struggle to respond quickly to fluctuating demand, supplier disruptions, transportation delays, and large volumes of operational data.

Artificial intelligence provides opportunities to improve these decisions through predictive analytics, machine learning, intelligent automation, and advanced optimisation techniques. AI-enabled procurement and logistics solutions can help organisations forecast demand, evaluate suppliers, identify purchasing risks, optimise inventory levels, improve transportation planning, and detect operational exceptions before they develop into significant disruptions.

The AI-Powered Procurement & Logistics: Optimizing Supply Chain Operations course provides a practical understanding of applying artificial intelligence across procurement, sourcing, warehousing, transportation, and supply chain management. Participants explore AI-supported demand forecasting, supplier analytics, procurement automation, inventory optimisation, intelligent logistics planning, supply chain visibility, and performance measurement.

The programme emphasises selecting appropriate AI applications, preparing reliable operational data, evaluating implementation requirements, and combining technology-driven insights with professional judgment to achieve measurable supply chain improvements.

Professional Problems This Course Is Designed to Solve

• Inaccurate demand forecasts and inventory imbalances: Applying predictive analytics to improve demand planning, inventory replenishment, and stock availability.

• Limited supplier performance visibility: Using AI-supported analytics to identify supplier risks, delivery problems, pricing anomalies, and performance deterioration.

• Time-consuming procurement processes: Automating repetitive activities such as supplier information analysis, purchase order processing, quotation comparison, and procurement reporting.

• High transportation and distribution costs: Evaluating AI-enabled routing, load planning, shipment consolidation, and delivery optimisation opportunities.

• Poor supply chain disruption management: Using predictive indicators and scenario analysis to identify potential delays, supplier shortages, and logistics bottlenecks.

Course content

Why Attend

• Fragmented procurement and logistics data: Integrating information from ERP, procurement, warehouse, transportation, and supplier systems to support coordinated decisions.

• Uncertain return on AI investments: Establishing practical use-case priorities, governance controls, implementation roadmaps, and performance indicators for AI adoption.

Course Methodology

The programme combines instructor-led discussions, AI application demonstrations, procurement and logistics case studies, data analysis exercises, process mapping, scenario simulations, and practical improvement workshops.

Participants examine realistic supply chain datasets and business scenarios involving purchasing expenditure, supplier performance, inventory movements, warehouse operations, and transportation activities. Exercises demonstrate how AI-supported analysis can improve decision-making while addressing data quality, model reliability, cybersecurity, and operational integration requirements.

Course Objectives

By the end of this course, participants will be able to:

• Understand the applications and limitations of artificial intelligence in procurement and logistics

• Identify high-value AI use cases across sourcing, purchasing, warehousing, and transportation

• Apply predictive analytics concepts to demand forecasting and inventory planning

• Evaluate AI-supported supplier selection, performance monitoring, and risk assessment

• Identify opportunities for intelligent procurement automation

• Understand AI applications in warehouse operations and inventory optimisation

• Evaluate route optimisation, transportation planning, and last-mile delivery analytics

• Apply predictive indicators to supply chain disruption and resilience planning

• Assess the data, technology, and integration requirements of AI solutions

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Course Objectives

- Establish appropriate controls for AI-generated recommendations and automated decisions
- Develop performance indicators to measure AI-enabled operational improvements
- Prepare an actionable AI implementation roadmap for procurement and logistics

Target Audience

This course is suitable for:

- Procurement and purchasing managers
- Supply chain managers and directors
- Logistics and transportation managers
- Strategic sourcing and supplier management professionals
- Inventory planning and demand forecasting specialists
- Warehouse and distribution managers
- Procurement transformation and operational excellence professionals
- Supply chain analytics and business intelligence specialists
- Digital transformation and automation managers
- Operations managers responsible for procurement and logistics performance

Target Competencies

Participants will develop competencies in:

- AI applications in procurement and logistics
- Predictive supply chain analytics
- AI-supported supplier management
- Intelligent procurement automation

Course content

Target Competencies

• Demand forecasting and inventory optimisation

• Warehouse and distribution analytics

• Transportation and route optimisation

• Supply chain risk prediction

• AI governance and implementation

• Supply chain performance measurement

Course outline

Day 1: Artificial Intelligence Foundations for Procurement and Supply Chain Operations

• Understanding artificial intelligence, machine learning, predictive analytics, generative AI, and intelligent automation in procurement and logistics environments

• Mapping AI opportunities across strategic sourcing, supplier management, purchasing, inventory planning, warehousing, transportation, and distribution

• Identifying operational data sources from ERP, procurement platforms, warehouse management systems, transportation systems, and supplier records

• Evaluating data quality, information integration, process maturity, and organisational readiness for AI adoption

• Prioritising AI use cases according to business value, implementation complexity, operational risk, and available data

• Practical workshop: Developing an AI opportunity map for a procurement and logistics operation with defined improvement objectives and priority use cases

Day 2: AI-Powered Procurement, Supplier Analytics and Purchasing Automation

• Applying AI-supported spend analysis to identify purchasing patterns, expenditure concentration, price anomalies, and sourcing opportunities

Course content

Course outline

• Using predictive analytics to evaluate supplier reliability, delivery performance, financial exposure, and potential supply disruption indicators

• Exploring AI-assisted supplier discovery, qualification, bid evaluation, and commercial comparison processes

• Applying generative AI to procurement documentation, requests for proposal, supplier communication, and contract information analysis

• Identifying automation opportunities in purchase requisitions, purchase order processing, invoice verification, and procurement exception management

• Practical exercise: Analysing supplier and procurement data to develop an AI-supported sourcing and supplier performance improvement plan

Day 3: Predictive Demand Planning, Inventory Optimisation and Intelligent Warehousing

• Applying machine learning concepts to demand forecasting using historical sales, seasonality, promotional activity, and external demand indicators

• Evaluating inventory optimisation techniques for safety stock, reorder points, replenishment planning, and service-level management

• Using predictive analytics to identify stockout risks, slow-moving inventory, excess stock, and changing inventory requirements

• Exploring AI applications in warehouse slotting, order picking, labour planning, capacity management, and operational productivity

• Understanding intelligent warehouse technologies including computer vision, autonomous mobile robots, sensors, and warehouse analytics

• Practical workshop: Developing an AI-supported inventory and warehouse improvement scenario to balance stock availability, operating cost, and service performance

Day 4: Intelligent Transportation, Logistics Optimisation and Supply Chain Resilience

• Understanding AI applications in transportation planning, vehicle routing, load optimisation, shipment consolidation, and carrier selection

Course content

Course outline

• Applying predictive estimated time of arrival analysis and shipment visibility data to identify delivery risks and operational exceptions

• Evaluating AI-enabled last-mile delivery planning, distribution scheduling, and transportation cost optimisation

• Using supply chain analytics to identify supplier disruptions, port congestion, transportation delays, and capacity constraints

• Developing scenario-based responses to logistics disruptions through alternative sourcing, rerouting, inventory repositioning, and contingency planning

• Case study: Evaluating transportation and distribution data to improve delivery reliability, reduce logistics costs, and strengthen supply chain resilience

Day 5: AI Implementation, Governance and Supply Chain Performance Improvement

• Developing an AI implementation strategy covering business requirements, use-case selection, data preparation, technology evaluation, and operational integration

• Assessing AI solution providers and integration requirements involving ERP, procurement systems, WMS, TMS, and supply chain analytics platforms

• Establishing governance controls for data privacy, cybersecurity, model accuracy, explainability, supplier information, and human oversight

• Defining performance indicators covering procurement savings, supplier reliability, forecast accuracy, inventory turnover, transportation cost, and on-time delivery

• Managing organisational change, workforce capabilities, pilot implementation, stakeholder engagement, and continuous model monitoring

• Capstone exercise: Developing and presenting an AI-Powered Procurement and Logistics Transformation Roadmap covering priority applications, data requirements, expected benefits, implementation risks, governance controls, and measurable performance outcomes

Seminar dates

Available seminar dates

Live dates and pricing for AI-Powered Procurement & Logistics: Optimizing Supply Chain Operations generated from the course details page.

Date	Location	Format	Fee
Dates on request	Venue on request	Classroom	**Contact us**

Live online option	Online delivery is available at €1,850.-.