Integrated Supply Chain and Inventory Optimization Training Course

30 Nov - 04 Dec 2026

Cairo

3700 € (Per Person)

Ref: #IM5714_288152

Course Introduction / Overview:

This course provides a comprehensive exploration of modern supply chain management, focusing on the critical interplay between integrated network design and multi-echelon inventory optimization. In today's volatile global market, a siloed approach to inventory is no longer viable. This program moves beyond traditional single-location models to address the complexities of managing stock across multiple stages of a supply network, from raw material suppliers to end customers. We will delve into foundational concepts, including the bullwhip effect, a term popularized by academic Hau L. Lee, to understand how demand distortions amplify upstream. Participants will learn to diagnose and mitigate these inefficiencies through strategic inventory placement, risk pooling, and advanced forecasting techniques. BIG BEN Training Center has designed this curriculum to bridge the gap between academic theory, as discussed in texts like "Supply Chain Logistics Management," and practical application. The course equips professionals with the analytical tools and strategic framework needed to design resilient, agile, and cost-effective supply chains that create a sustainable competitive advantage.

Target Audience / This training course is suitable for:

- Supply Chain Managers.
- Inventory Planners and Analysts.
- Logistics and Distribution Managers.
- Operations Managers.
- Procurement and Sourcing Professionals.
- Demand Planners.
- Warehouse Managers.
- Supply Chain Consultants.
- Business Analysts with a focus on operations.

Target Sectors and Industries:

- Manufacturing and Industrial Production.
- Retail and Consumer Goods.
- Pharmaceuticals and Healthcare.
- Automotive and Aerospace.
- Third-Party Logistics (3PL) and Freight Forwarding.
- E-commerce and Direct-to-Consumer Businesses.
- Governmental agencies and public sector logistics divisions.
- Food and Beverage Distribution.
- Technology and Electronics.

Target Organizations Departments:

- Supply Chain Management.
- Logistics and Distribution.
- Inventory Control and Management.
- Operations.
- Procurement and Purchasing.
- Strategic Planning.
- Finance and Cost Control.
- Warehousing.
- Production Planning.

Course Offerings:

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

- Analyze the structure and dynamics of multi-echelon supply chains.
- Implement advanced inventory optimization models to minimize holding costs.
- Develop robust demand forecasting techniques to improve accuracy.
- Design and evaluate supply chain network configurations for optimal flow.
- Mitigate the bullwhip effect through information sharing and collaboration.
- Apply risk pooling strategies to reduce overall safety stock levels.
- Utilize key performance indicators (KPIs) to measure and improve supply chain performance.
- Integrate technology and analytics into supply chain decision-making processes.
- Formulate a holistic strategy for building a resilient and agile supply chain.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, interactive, and directly applicable to real-world challenges. We believe that adult learning is most effective when it combines conceptual knowledge with practical application. Therefore, this course moves beyond traditional lectures to incorporate a blend of dynamic learning techniques. Participants will engage in detailed case study analyses of leading global companies, dissecting their supply chain successes and failures to draw actionable insights. Interactive group workshops and simulation exercises will allow teams to collaborate on solving complex inventory placement and network design problems, fostering teamwork and critical thinking. Facilitated discussions and brainstorming sessions will encourage the sharing of diverse experiences and perspectives. The instructor will provide continuous feedback and guide participants in developing a strategic optimization plan tailored to their own organizational context. This hands-on, participant-centered approach ensures that attendees leave not just with new knowledge, but with the confidence and skills to implement transformative changes in their operations.

Course Agenda (Course Units):

Unit One: Foundations of Integrated Supply Chain Management

- Introduction to supply chain integration and its strategic importance.
- Understanding the concept of a multi-echelon network.
- The bullwhip effect and its causes.
- Mapping material and information flows across the supply chain.
- Key trade-offs in logistics and inventory management.
- Introduction to the SCOR (Supply Chain Operations Reference) model.
- Aligning supply chain strategy with overall business objectives.

Unit Two: Multi-Echelon Inventory Control Models

- Limitations of classic single-location inventory models (EOQ).
- Fundamentals of safety stock and service levels.
- The concept of risk pooling and its impact on inventory levels.
- Deterministic vs. stochastic inventory models.
- Inventory placement strategies within the network.
- Managing inventory for products with different demand profiles (e.g., A-B-C analysis).
- Introduction to echelon stock and its calculation.

Unit Three: Demand Forecasting and Collaborative Planning

- Review of statistical forecasting methods (moving averages, exponential smoothing).
- Measuring forecast accuracy and bias.
- Managing demand variability and uncertainty.
- Collaborative Planning, Forecasting, and Replenishment (CPFR).
- The role of point-of-sale (POS) data in demand planning.
- Strategies for managing seasonality and promotional demand.
- Linking demand planning directly to inventory policy.

Unit Four: Supply Chain Network Design and Technology

- Strategic importance of facility location and capacity planning.
- Network optimization principles and objectives.
- Transportation modes and their impact on inventory and cost.
- The role of technology in enabling supply chain visibility.
- Warehouse Management Systems (WMS) and Transportation Management Systems (TMS).
- Introduction to AI and machine learning in inventory optimization.
- Evaluating the total cost of ownership in network decisions.

Unit Five: Strategic Optimization and Performance Management

- Developing a framework for continuous supply chain improvement.
- Key performance indicators (KPIs) for an integrated supply chain.
- Inventory turnover, cash-to-cash cycle, and fill rates.
- Supply chain risk management and resilience strategies.
- Building sustainability into supply chain operations.
- Change management for implementing new supply chain strategies.
- Final project and presentation of a holistic optimization plan.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How might the principles of multi-echelon inventory optimization be adapted for service-based supply chains, where the 'inventory' is intangible, such as skilled labor or digital assets?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a truly integrated perspective that bridges the strategic domain of network design with the tactical execution of inventory control. While many programs focus on these areas in isolation, our curriculum is built on the premise that they are deeply interdependent. We move beyond simplistic, single-location models to tackle the complex realities of modern, multi-echelon global networks. The emphasis is not just on understanding theoretical models but on applying them to solve practical business problems, such as where to strategically position inventory to balance cost and service levels in the face of demand uncertainty. Furthermore, the course content is forward-looking, incorporating critical contemporary themes like supply chain resilience, sustainability, and the transformative impact of digital technologies like AI and machine learning. Participants will gain a holistic and dynamic skill set, enabling them to architect and manage supply chains that are not only efficient and cost-effective but also agile and robust enough to thrive in a volatile marketplace.