



Certified in Planning and Inventory Management

Inventory Tracking
Technology and Distribution
Performance



CPIM On-Demand Training for Self-Study Professionals

Are you preparing for the CPIM certification through self-study? As an experienced supply chain professional, you already have strong practical knowledge—but some topics may still need expert clarification. Fhysics Business Consultants bridges that gap with on-demand, topic-oriented CPIM training sessions designed specifically for self-learners.

Whether you need guidance on a single concept or an entire module, our focused training helps you master complex areas quickly and confidently. Get personalized support, strengthen your exam readiness, and elevate your supply chain expertise—on your schedule.

Mobile: +91-900-304-9000 (WhatsApp)

Email: Certifications@Fhysics.net



Inventory Tracking Technology and Distribution Performance

1. Barcoding Systems and Symbology

Barcodes are foundational tracking tools that encode product information for rapid scanning and identification. Understanding barcode symbology (1D, 2D, QR codes), printing standards, and scanner compatibility is crucial for reliable inventory operations. Barcoding improves picking accuracy, reduces data entry errors, accelerates receiving, and enhances traceability across the distribution network. For CPIM, mastery includes knowing how barcodes support cycle counting, reduce mislabeling, and integrate with WMS and ERP systems. Proper system setup—label placement, scan validation rules, and standard operating procedures—directly improves warehouse productivity and distribution accuracy.

2. RFID Technology and Applications

Radio Frequency Identification (RFID) enables automated, non-line-of-sight tracking of inventory through radio waves. RFID tags store unique product-level data, while readers capture item movements through doors, conveyor lines, or storage areas. It significantly enhances visibility, reduces manual scanning, and supports high-speed operations like cross-docking. CPIM learners must understand passive vs. active RFID, read ranges, cost considerations, and environments where signal interference affects accuracy. RFID supports real-time inventory records, improves shrinkage control, enhances traceability, and strengthens compliance in regulated industries such as pharmaceuticals and food distribution.

3. Warehouse Management Systems (WMS)

A WMS is the core system driving warehouse execution activities including receiving, put-away, picking, packing, shipping, replenishment, and cycle counting. Modern WMS integrates with ERP and DRP systems to ensure synchronized planning and execution. Key functionalities include location management, inventory visibility, labor tracking, and rule-based task allocation. Understanding WMS capabilities helps align physical flow with digital accuracy, reducing discrepancies and improving service performance. WMS also supports mobile scanning devices, automated workflows, and exception alerts that enhance operational discipline and distribution performance.

4. Inventory Visibility and Real-Time Tracking

Real-time visibility ensures that planners and warehouse operators always know what is available, where it is stored, and its movement status. Technologies like RFID, barcoding, WMS dashboards, and IoT sensors help maintain up-to-date inventory truth. Poor visibility results in stockouts, duplicate orders, delayed shipments, and inaccurate replenishment signals. Understanding how data is captured, synchronized, and displayed is critical for making informed planning decisions. Real-time visibility also supports demand-driven operations, improves forecasting accuracy, and reduces safety stock needs, thereby strengthening distribution performance.

5. Automated Storage and Retrieval Systems (AS/RS)

AS/RS are automated technologies using cranes, shuttles, carousels, or robots to store and retrieve materials. They improve accuracy, reduce labor dependency, increase space

utilization, and enhance throughput consistency. Integrating AS/RS with WMS ensures precise location tracking, error-free put-away, and automatic replenishment activation. These systems are most beneficial in high-volume, high-density warehouses where speed and accuracy are priorities. Understanding AS/RS principles helps CPIM candidates evaluate the suitability of automation investments and their impacts on inventory accuracy, cycle time reduction, and distribution efficiency.

6. IoT Sensors in Inventory Tracking

Internet of Things (IoT) sensors track environmental conditions, asset movements, equipment performance, and storage integrity. Sensors can monitor temperature, humidity, vibration, or shock—critical in industries such as pharmaceuticals, chemicals, and perishable goods. IoT devices provide continuous, real-time data, improving traceability and quality management. Understanding sensor integration, data transmission, connectivity (Wi-Fi, Bluetooth, LoRaWAN), and alert systems helps planners maintain compliance and reduce product spoilage. IoT also enhances distribution route monitoring and provides transparency across the supply chain, supporting proactive decision-making.

7. GPS and Telematics for Fleet and Shipment Tracking

GPS and telematics technologies track transportation assets in real time, providing visibility into shipment location, estimated arrival times, route deviations, and driver performance. This data improves scheduling accuracy, reduces delivery uncertainty, and enhances customer

satisfaction. Understanding how telematics integrates with TMS and WMS helps optimize delivery windows and reduce dwell time. GPS-based tracking also helps in loss prevention, compliance with regulations, and route optimization for cost savings. These technologies strengthen end-to-end distribution performance by connecting warehouse planning with transportation execution.

8. Cycle Counting Technologies and Methods

Cycle counting is a continuous inventory auditing process that identifies discrepancies without full physical inventories. Technologies such as handheld scanners, RFID portals, drones, and robotic scanners enhance speed and accuracy. Understanding ABC-based cycle counting, high-value item tracking, and root-cause discrepancy analysis is essential for CPIM success. Effective cycle counting improves record integrity, reduces stockouts, enhances DRP accuracy, and minimizes operational disruptions. Mastery includes knowing how to set count frequencies, manage count variances, and integrate results into continuous improvement initiatives.

9. Automated Identification and Data Capture (AIDC)

AIDC encompasses all technologies—RFID, barcodes, voice-directed systems, sensors—used to automatically collect and input data. AIDC eliminates manual errors, speeds processing, and provides accurate, timely information to ERP/WMS systems. Understanding the strengths and constraints of each AIDC method helps planners select the most suitable technologies for different materials,

environments, and handling processes. AIDC enhances traceability, improves compliance, and supports real-time inventory updates. Mastery of AIDC ensures error-free inventory transactions and seamless flow of information across distribution operations.

10. Voice-Directed Warehousing

Voice systems guide warehouse workers through picking, replenishment, and receiving tasks using hands-free audio prompts. Workers confirm actions verbally, reducing reliance on handheld devices. Voice-directed technology improves picking accuracy, reduces training time, and speeds up order processing. It is especially effective in high-throughput environments with repetitive tasks.

Understanding integration with WMS, error-handling processes, and voice recognition calibration is important. These systems strengthen distribution performance by increasing efficiency, reducing fatigue, and improving order fulfillment reliability.

11. Robotics in Inventory Handling

Robotics—such as AMRs (autonomous mobile robots), AGVs (automated guided vehicles), robotic picking arms, and palletizing robots—enhance inventory accuracy and speed. Robots reduce human error, streamline repetitive tasks, and improve consistency. Understanding robot–WMS integration, path optimization, battery management, and safety protocols is important for evaluating automation readiness. Robotics improve throughput, reduce labor costs, support scalable operations, and make distribution performance more predictable. CPIM candidates must understand the business case and operational impact of robotic adoption.

12. Distribution Performance Metrics (KPIs)

Key performance indicators such as fill rate, order accuracy, cycle time, inventory turns, perfect order performance, dock-to-stock time, and picking accuracy measure distribution efficiency. Understanding how these KPIs are calculated and how technology improves them is essential. Accurate inventory tracking technologies directly influence KPI performance by reducing errors, increasing traceability, and improving replenishment reliability. KPIs help identify bottlenecks, justify technology investments, and drive continuous improvement in distribution operations. Mastery of metrics ensures effective performance evaluation and benchmarking.

13. Perfect Order Fulfillment

Perfect orders meet four criteria: delivered on time, in full, without damage, and with accurate documentation. Inventory tracking technologies enhance perfect order performance by ensuring accurate picking, real-time visibility, and proactive transportation monitoring. Deviations in any area signal operational weaknesses. Understanding the drivers and measurements of perfect order fulfillment enables planners to identify systemic issues like inventory errors, supplier delays, or load-planning deficiencies. This concept is central to high service levels and supply chain competitiveness.

14. Traceability and Serialization

Traceability enables tracking of product lineage from origin to final delivery, while serialization assigns unique identifiers to individual units. Technologies like RFID, 2D barcodes, and blockchain help maintain traceability records.

This is critical in sectors requiring product recall capability, safety compliance, or anti-counterfeiting controls.

Understanding how traceability systems integrate with ERP, WMS, and TMS helps support regulatory requirements such as FDA or FSMA. Serialization enhances visibility, reduces shrinkage, and supports data-driven quality management across the distribution network.

15. Distributed Order Management (DOM)

DOM systems orchestrate order fulfillment across multiple channels and locations by evaluating inventory availability, shipping constraints, cost, and delivery promises. DOM uses real-time inventory tracking to determine the best source for fulfilling each order. Understanding DOM allows CPIM learners to connect inventory visibility with customer service optimization. DOM improves order routing, reduces split shipments, decreases transportation cost, and supports omnichannel fulfillment. Mastery ensures understanding of the relationship between inventory accuracy and distribution responsiveness.

16. Blockchain for Inventory Transparency

Blockchain provides tamper-proof, shared ledgers for recording inventory transactions across the supply chain. It enhances trust, traceability, and data integrity among trading partners. Understanding hash functions, smart contracts, and decentralized data records helps evaluate blockchain's role in distribution. Blockchain supports authentication, reduces fraud, improves recall accuracy, and enables verified chain-of-custody records. While not widely adopted everywhere, CPIM candidates must understand its potential for future supply chain transformation.

17. Data Analytics and Predictive Insights

Advanced analytics convert inventory tracking data into actionable insights. Techniques include demand prediction, anomaly detection, replenishment optimization, and route performance analysis. Understanding how technologies feed data into dashboards and AI models helps planners make proactive decisions. Analytics improve service levels, reduce safety stock, optimize labor, and increase distribution agility. For CPIM, mastery includes knowing how to interpret KPIs, leverage trends, and support continuous improvement through data-driven decisions.

18. Labor Management Systems (LMS)

LMS tracks employee productivity, task performance, and labor utilization across warehouse operations. Integrated with WMS, LMS uses real-time data from scanners, robots, and sensors to measure efficiency. Understanding LMS helps identify bottlenecks, set performance standards, and reward high productivity. Labor metrics—UPH (units per hour), pick rates, utilization—support operational planning and performance improvement. LMS strengthens warehouse efficiency, reduces labor cost, and improves order fulfillment consistency.

19. Quality Assurance in Distribution Processes

Quality checks rely on accurate data capture, automated inspection technologies, and validated processes. Technologies like barcode scanning, weighing systems, RFID verification, and image recognition support QA in receiving, picking, packing, and shipping. Understanding how quality control integrates with WMS ensures consistent

performance and reduces customer complaints. QA also strengthens regulatory compliance, minimizes returns, and supports perfect order achievement. Reliable tracking technologies significantly improve quality assurance effectiveness.

20. Continuous Improvement and Technology Adoption

Implementing inventory tracking technology is not a one-time event—it requires continuous improvement, training, and system optimization. Lean and Six Sigma methodologies help increase accuracy, reduce waste, and enhance throughput. Understanding change management, ROI analysis, and phased implementation strategies ensures successful technology adoption. Continuous improvement ensures long-term benefits from tracking systems and maintains high distribution performance.

Micro-Learning Programs in Supply Chain Management & Procurement



Enhance your professional edge with Fhyzics Business Consultants' Micro-Learning Programs in Supply Chain Management and Procurement. Designed as focused, two-hour Executive Development Programs, these sessions deliver practical insights and tools to solve real-world business challenges. Conducted in small batches for personalized learning, participants gain a deeper understanding of key supply chain and procurement strategies that drive efficiency and profitability. Each participant receives a certificate of completion, adding value to their professional profile and career growth. Whether you aim to advance in your current role or explore new opportunities, this program equips you with the knowledge and confidence to excel.



Micro-Learning Programs in Supply Chain Management



1. Fundamentals of Supply Chain Management
2. Supply Chain Planning and Optimization
3. Demand Forecasting Techniques
4. Inventory Control and Management
5. Distribution and Logistics Strategy
6. Warehouse Layout and Operations Efficiency
7. Supply Chain Risk Management
8. Supply Chain Performance Metrics (KPIs)
9. Lean Supply Chain Practices
10. Agile and Responsive Supply Chains
11. Sales and Operations Planning (S&OP)
12. Supply Chain Network Design
13. Supply Chain Digital Transformation
14. AI and Data Analytics in Supply Chain
15. Supply Chain Sustainability and Green Logistics
16. Reverse Logistics and Returns Management
17. Supply Chain Collaboration and Integration
18. Supplier Relationship Management in SCM
19. Global Supply Chain Strategy
20. Transportation Management Systems (TMS)
21. Inventory Optimization Models
22. Demand-Driven MRP (DDMRP) Concepts
23. Blockchain Applications in Supply Chain
24. Supply Chain Cost Reduction Techniques
25. SCOR Model and Process Improvement

Micro-Learning Programs in Supply Chain Management ...



26. Capacity Planning and Resource Allocation
27. Managing Supply Chain Disruptions
28. End-to-End Supply Chain Visibility
29. Cold Chain Logistics Management
30. Supply Chain Compliance and Ethics
31. Import–Export Procedures and Documentation
32. Managing Third-Party Logistics (3PL) Providers
33. Supply Chain Collaboration Technologies
34. Production Planning and Scheduling
35. Strategic Supply Chain Design Using Case Studies
36. Circular Economy in Supply Chain
37. Vendor-Managed Inventory (VMI)
38. Transportation Optimization Techniques
39. E-Commerce Supply Chain Models
40. Omni-Channel Fulfillment Strategies
41. Warehouse Automation and Robotics
42. SCOR DS Roadmap for Supply Chain Excellence
43. Customer-Centric Supply Chain Strategies
44. Supply Chain Finance and Working Capital Management
45. Supply Chain Data Visualization Using Power BI
46. Strategic Sourcing in Supply Chain Context
47. Supply Chain Benchmarking and Best Practices
48. Integrated Business Planning (IBP)
49. Supply Chain in Crisis Management and Recovery
50. Future Trends and Technologies in Supply Chain

Micro-Learning Programs in Procurement



1. Fundamentals of Procurement Management
2. Strategic Sourcing and Category Management
3. Supplier Selection and Evaluation
4. Contract Management Essentials
5. Cost and Price Analysis in Procurement
6. Negotiation Strategies for Procurement Professionals
7. E-Procurement and Digital Tools
8. Procurement Planning and Budgeting
9. Risk Management in Procurement
10. Supplier Relationship and Performance Management
11. Sustainable and Ethical Procurement
12. Total Cost of Ownership (TCO) Analysis
13. Make-or-Buy Decision Frameworks
14. Procurement Policies and Governance
15. Procurement in Public vs. Private Sectors
16. Procurement Audit and Compliance
17. Procurement Data Analytics and Reporting
18. Procurement Scorecards and KPIs
19. Strategic Supplier Partnerships
20. Category Strategy Development
21. Managing Global and Offshore Procurement
22. Negotiation Simulation Workshop
23. Contract Law for Procurement Managers
24. Cost Reduction Strategies in Procurement
25. Supplier Risk Assessment Models

Micro-Learning Programs in Procurement ...



26. Procurement Process Mapping and Improvement
27. Procurement Automation and AI Applications
28. Managing Procurement Teams Effectively
29. Procurement Ethics and Transparency
30. Procurement in the Digital Supply Chain
31. Vendor Consolidation Strategies
32. Spend Analysis and Optimization
33. Demand Forecasting for Procurement
34. E-Auction and Reverse Bidding Techniques
35. Inventory and Procurement Alignment
36. Procurement in Project-Based Organizations
37. Supplier Onboarding and Development
38. Procurement Market Intelligence
39. Measuring Supplier Innovation
40. Procurement in Times of Supply Disruption
41. Cross-Functional Collaboration in Procurement
42. Writing Effective RFPs, RFQs, and RFIs
43. Contract Negotiation Best Practices
44. Green Procurement and Circular Economy
45. Legal Aspects of Procurement Contracts
46. Performance-Based Contracting
47. Procurement Leadership and Strategic Influence
48. Cost Avoidance and Value Creation in Procurement
49. Managing Procurement with Power BI Dashboards
50. Future Skills and Trends in Procurement



Fhyzics Business Consultants Pvt. Ltd.

Professional Training Partner of ASCM, USA

www.Fhyzics.net

ASCM Referral Code
XEFGHYZ88

Certifications@Fhyzics.net
+91-900-304-9000

CPIM aspirants may buy the CPIM Learning System and Examination Credits directly through ASCM Portal. When purchasing CPIM Examination Credit, please enter Referral Code **XEFGHYZ88** to receive CPIM Recertification Guidance for life.