



# Certified in Logistics, Transportation and Distribution

Logistics Costing





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# Logistics Costing

## 1. Total Cost of Ownership (TCO) in Logistics

TCO captures all costs associated with acquiring, moving, storing, and managing products—not just the purchase price or freight cost. It includes direct, indirect, and hidden costs such as administrative overhead, damage, obsolescence, supplier reliability issues, and quality failures. Understanding TCO helps organizations make informed logistics decisions that optimize cost over the entire lifecycle rather than focusing on short-term savings. CLTD candidates must recognize how TCO guides sourcing, transportation, and warehousing decisions.

## 2. Logistics Cost Categories and Structure

Logistics costs fall into major categories: transportation, warehousing, inventory carrying cost, order processing, materials handling, packaging, and administrative expenses. Each category behaves differently—some are variable, some fixed. For accurate costing, companies must understand how each cost contributes to total logistics spend and how decisions influence cost allocation. Mastering cost structure helps identify optimization opportunities and evaluate tradeoffs across the supply chain.

## 3. Fixed, Variable, Direct, and Indirect Costs

Fixed costs remain constant regardless of activity level (e.g., warehouse rent), while variable costs change with volume (e.g., fuel, labor hours). Direct costs are tied to a specific product or function, whereas indirect costs are shared across operations. Accurate classification helps organizations determine cost behavior, break-even points,

and pricing decisions. In logistics, understanding these cost types is essential for better forecasting and budgeting.

#### **4. Activity-Based Costing (ABC) in Logistics**

ABC assigns costs to logistics activities based on actual resource consumption rather than broad averages. Activities such as picking, packing, receiving, and shipping receive cost allocations according to time, labor, and equipment used. ABC improves visibility into true cost drivers and identifies high-cost activities for improvement. It supports more accurate pricing, customer profitability analysis, and process optimization. CLTD emphasizes how ABC enhances cost transparency.

#### **5. Cost-to-Serve (CTS) Analysis**

Cost-to-serve evaluates the specific cost required to serve individual customers, channels, or product segments. It includes transportation, handling, order frequency, customization, returns, and service requirements. CTS reveals unprofitable customers or products and helps revise service agreements or fulfillment strategies. By understanding the cost impacts of different service levels, companies can align pricing and service policies. This is a key competency for logistics managers.

#### **6. Transportation Costing and Rate Structures**

Transportation costs include line-haul, accessorials, fuel surcharges, freight class, mode-specific fees, and carrier margins. Understanding rate structures—such as LTL tariffs, FTL contracts, parcel dimensional weight rules, and ocean surcharges—is essential. Companies must evaluate mode tradeoffs, consolidation impacts, and carrier negotiations.

Transportation is usually the largest logistics expense, making mastery of cost drivers critical for CLTD exam performance.

## **7. Warehouse and Distribution Center Costing**

Warehouse costs include labor, equipment, space, utilities, maintenance, IT systems, and value-added services. These may be measured per pallet, per order, per line, or per cubic foot. Labor productivity, layout, and slotting have major cost implications. Understanding warehouse cost analysis helps evaluate insourcing vs. outsourcing, automation investments, and performance metrics such as cost per order. CLTD emphasizes identifying the drivers of warehouse cost.

## **8. Inventory Carrying Cost (ICC) Components**

ICC includes capital cost, storage space, taxes, insurance, shrinkage, damage, and obsolescence. Typical ICC percentages range from 20–40% per year depending on the industry. Higher inventory levels significantly increase total logistics cost, even if storage seems inexpensive. Understanding ICC helps optimize safety stock, order quantities, and inventory placement decisions. ICC awareness is essential for balancing cost and customer service.

## **9. Order Processing and Administrative Costing**

Order processing includes receiving orders, validating data, scheduling shipments, invoicing, customer service, and documentation. These costs often appear small but accumulate across thousands of transactions. Companies use automation, EDI, and workflow systems to reduce

processing costs. Understanding administrative cost drivers is important because inefficient order processing affects customer satisfaction, accuracy, and total logistics expenditure.

## **10. Packaging and Material Handling Cost Analysis**

Packaging costs include materials, labor, equipment, and waste. Proper packaging minimizes damage but can also increase cube and transportation cost. Material handling costs include equipment operation, labor movement, and safety requirements. Reducing unnecessary touches, improving layout, and standardizing packaging lowers cost. CLTD candidates must understand how packaging choices influence total logistics cost and service performance.

## **11. Reverse Logistics Cost Considerations**

Returns handling, repair, refurbishment, recycling, and disposal create significant costs. Reverse logistics also involves transportation, labor, inspection, and repackaging. Poor reverse flow management leads to high write-offs, added inventory, and slower cash recovery. Understanding reverse logistics costing helps optimize return policies, design closed-loop systems, and reduce waste. The CLTD curriculum highlights reverse flow as a growing cost driver.

## **12. Break-Even and Cost-Volume-Profit (CVP) Analysis**

CVP analysis determines how costs, revenue, and volume interact. It helps managers calculate break-even points and understand the impact of volume changes on profitability. In logistics, CVP applies to warehouse utilization, fleet operations, outsourcing decisions, and pricing models. Knowing how fixed and variable costs behave at different volumes enables better planning and decision-making.

### **13. Benchmarking and Best Practices in Logistics Costing**

Benchmarking compares cost performance against industry standards, competitors, or internal historical data. It identifies cost gaps, improvement opportunities, and best practices. Key benchmarking metrics include cost per shipment, cost per order, ICC percentage, and transportation cost per mile. Benchmarking helps organizations design actionable cost-reduction initiatives while maintaining service quality.

### **14. Outsourcing and 3PL Cost Evaluation**

Evaluating third-party logistics providers (3PLs) requires analyzing contract terms, service levels, pricing structures, performance metrics, and hidden fees. Outsourcing may reduce capital investment and improve service but introduces dependency risks. Understanding 3PL costing, including transactional pricing and dedicated models, helps companies compare in-house vs. outsourced logistics cost-effectiveness.

### **15. Cost Tradeoffs Between Logistics Functions**

Reducing cost in one logistics area often increases cost in another. For example, using cheaper transportation may increase safety stock; adding warehouses increases facility cost but lowers transportation cost. The goal is optimizing total system cost, not local cost. Understanding tradeoffs helps make decisions aligned with organizational strategy. This is fundamental to logistics costing.

### **16. Freight Auditing and Payment Processes**

Freight auditing verifies that carrier invoices match contracted rates, shipment details, and service levels. It

identifies overbilling, duplicate invoices, accessorial errors, and unauthorized charges. Effective auditing reduces cost leaks and improves billing accuracy. Many companies use third-party firms or software to manage freight payments. Understanding freight audit processes is crucial for cost control and compliance.

### **17. Budgeting and Forecasting for Logistics Operations**

Forecasting logistics costs involves predicting transportation spend, labor needs, fuel prices, capacity availability, and seasonal volume changes. Budgeting establishes cost expectations and allocates resources. Accurate forecasts require historical data, demand projections, and carrier input. CLTD emphasizes how logistics budgeting supports strategic planning and proactive cost management.

### **18. Technology and Automation Impact on Logistics Costs**

Automation (e.g., robotics, AS/RS, conveyors) and digital tools (WMS, TMS, visibility platforms) can reduce labor cost, improve accuracy, and lower handling expenses. Technology investment requires analyzing capital expenditure, operating cost savings, ROI, and system integration. Understanding how technology transforms cost structures helps companies justify modernization and continuous improvement.

### **19. Measuring Logistics Cost Performance with KPIs**

Key logistics costing metrics include cost per mile, cost per cube, transportation cost as a percentage of sales, warehouse cost per order, ICC percentage, and total logistics cost. KPIs provide visibility into performance, help



detect inefficiencies, and support decision-making. Mastery of logistics cost metrics is essential for CLTD exam success and real-world management.

## **20. Financial Reporting and the Role of Logistics in Profitability**

Logistics performance affects operating profit, cash flow, and asset utilization. Cost savings in logistics directly improve the bottom line. Financial reporting links logistics activities to profitability through statements such as the income statement, balance sheet, and cost accounting reports. Understanding these financial relationships helps logistics leaders communicate their value to senior management.

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# Micro-Learning Programs in Supply Chain Management & Procurement



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# 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



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