

VERSION 1.0

EXAM CONTENT MANUAL PREVIEW

Valid through March 13, 2020



CLTD

CERTIFIED IN LOGISTICS, TRANSPORTATION AND DISTRIBUTION



APICS Certified in Logistics, Transportation and Distribution™
Preview of **CLTD Exam Content Manual Version 1.0**

Please be aware, this is not the full APICS Certified in Logistics, Transportation and Distribution (CLTD™) Exam Content Manual (ECM). The full version is available for purchase at apics.org/shop. This preview is provided to give candidates an overview of what is contained on the exam on a very high level. For exam preparation, use of the current APICS CLTD ECM is strongly recommended.

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APICS CLTD Exam: CLTD ECM Version 1.0 Preview

Abbreviated Exam Content

Three content areas have been designed to organize the APICS CLTD domains. The relative importance of these topics will vary among industries, but the figures given below show the percentage designated for each section on the exam.

Diagnostic part	Main topic	Percentage of exam
I	Logistics and Supply Chain Overview	8%
II	Capacity Planning and Demand Management	8%
III	Order Management	10%
IV	Inventory and Warehouse Management	17%
V	Transportation	22%
VI	Global Logistics Considerations	17%
VII	Logistics Network Design	10%
VIII	Reverse Logistics and Sustainability	8%

Content Outline

I. Logistics and Supply Chain Overview

Logistics is the core of supply chain management. Fundamental concepts include managing logistics as a cohesive system, understanding tradeoffs to present a logistics strategy that aligns with organizational strategy, and finding the most effective mix of revenue producing services for the cost of providing that service. Measurement and continuous improvement are emphasized as ways to meet and exceed the pressures of globalization and the steadily increasing customer expectations for logistics.

- A. **Logistics Fundamentals:** It is important to understand the scope of logistics, including how it fits within the larger role of supply chain management and business strategy. The concept of trade-offs is used to show how the interconnected nature of the various areas of logistics, while a review of logistics' process flows puts things into a different perspective. Achieving the full value of logistics requires a balance between costs, customer satisfaction, and service levels. Emphasis is given to an understanding of why

methods of accounting for logistics costs is important for logistics management and overall business success.

- B. **Logistics Strategy within the Supply Chain:** The many aspects of logistics strategy include altering tactics to account for product life cycle stages, finding the right balance between services and their costs, fitting in with existing organizational structures, developing strong relationships at the appropriate level, assessing strategic level risks including security, and designing the right key performance indicators to encourage desired behavior.
- C. **Lean Logistics:** Continuous improvement methodologies need to become ingrained in an organization's culture and strategies if they are to succeed. These methodologies should be addressed up front from the perspective of logistics' role in eliminating all forms of waste while maintaining high quality and designing supply chain agility. It is imperative that logistics functions be proactive in assessing the need for change and then realizing it. Methods of continuous improvement include lean logistics, agile systems, and the philosophy of six sigma.

II. Capacity Planning and Demand Management

Logistics capacity planning and related decisions rely on efficient forecasts, so it is important to understand the concepts behind forecasting and its application to logistics decisions. This involves understanding how logistics can help direct and prioritize in order to better match supply to demand. The effective acquisition of inventory also requires a collaboration between procurement and logistics.

- A. **Aligning Supply and Demand:** Logistics professionals need an understanding of the concepts behind forecasting, especially the resource-alignment tasks through which organizations develop forecasts by which logistics, manufacturing, purchasing, and other departmental plans are created.
- B. **Translating Demand into Capacity Planning:** Practitioners use forecasts or other demand information and translate it into high-level capacity plans for warehousing and transportation to deliver customer service at a consistent level.
- C. **Demand Management:** In its cross-functional interrelationships with sales, marketing, purchasing, and manufacturing operations, logistics works to orchestrate and coordinate demand and supply in order to resolve interface conflicts by systematically considering plausible trade-offs. This requires an understanding of processes including sales and operations planning (S&OP), master production scheduling (MPS), materials requirements planning (MRP), and distribution requirements planning (DRP).
- D. **Sourcing and Procurement of Inventory:** Logistics needs to closely coordinate its activities with procurement to ensure a stable source of supply at reasonable total logistics system costs. This involves the procurement processes of selecting suppliers

and generating contracts with the appropriate terms and conditions, which ensure performance is adequately monitored and controlled.

III. Order Management

At the core of the logistics process is the customer order, which serves as the trigger setting logistics in motion. Order management activities include a variety of tasks aimed at planning, designing, and controlling processes which manage and execute customers' orders. At the core of these processes is customer relationship management since every decision and activity that logistics takes should be with the customer in mind. By developing a customer service management strategy, logistics can deliver on the seven rights of customer service which enhances long-term customer satisfaction and creates lifetime customers.

- A. **Customer Relationship Management (CRM):** CRM is an important marketing philosophy that emphasizes all customers as being top priority, including internal customers or end consumers. By implementing the steps of a CRM process, relationships with key stakeholders can be optimized throughout each transaction.

- B. **Order Management:** Logistics professionals work closely with procurement specialists who source required materials and components from suppliers for the manufacture of products. Once the purchase order processing is completed, logistics confirms the goods received match the original order and a routing guide is used to assist in the multiple decisions that must be made. Logistics relies on systems, such as Electronic Data Interchange (EDI) and transportation management systems which enable order visibility to identify the status of any customer order and to coordinate complex inbound flows, intracompany movements, and outbound orders. Supplier and carrier performance is tracked and measured so that improvements can be made on an ongoing basis, making logistics more efficient and effective. Tailoring, aligning, and managing relationships with the supply chain partners will enhance the performance of the entire supply chain.

- C. **Customer Service Management (CSM):** Customer service management is the ability of an organization to meet the needs, inquiries, and requests from customers. Developing an effective customer service management strategy ensures that the seven rights of customer service will be achieved— the right product, the right quantity, the right condition, the right place, the right time, the right customer, the right cost. Customer service extends after the transaction by servicing products and providing parts. In order for logistics to further refine its service, customer feedback is gathered on processes, products, and customer satisfaction in order for improvements to be incorporated as best practices.

IV. Inventory and Warehouse Management

Inventory and warehouse management involves maintaining inventory levels in a manner that aligns with the business strategy and goals, supporting the coordination of supply and demand, while protecting inventory value. Warehouse management also entails the movement of materials and goods into and out of storage efficiently, safely, and with minimal inventory damage. As business practices and technology evolve, inventory and warehouse management must adapt to new

distribution channels and customer/consumer expectations by creating new processes that deliver the desired results.

- A. ***Inventory Management in Logistics:*** To fulfill its basic functions, inventory resides at many points in the supply chain. Excessive levels of inventory creates additional costs for the organization and exposure to risk in fluctuations and changes in customer demand. Because of its critical impact on the bottom line, effective inventory management is now seen as a way to create value in the business. It is more imperative than ever to understand the unique role that inventory plays in the business strategy.
- B. ***Inventory Management Methods:*** Managing inventory effectively requires meeting competing goals to minimize inventory costs and maximize customer/consumer service. A clear understanding of what contributes to inventory carrying costs is, therefore, a prerequisite to crafting an appropriate inventory management strategy. These costs can be controlled through more effective approaches to inventory ordering that minimize the amount of time inventory resides in the pipeline, which reduces the risk of accumulating excess and potentially obsolete inventory.
- C. ***Inventory Control:*** Maintaining optimal inventory levels includes the related replenishment questions of “how much to order” and “how often to order.” The answers help create an inventory control approach that is both economical and service-oriented. Inventory control also requires deciding when to order, which in turn requires considering issues such as lead times, supply risk, and inventory review. Inventory control approaches focus on increasing the rate of inventory turn and helping the business capture the value of inventory investments more quickly.
- D. ***Warehousing Strategy and Management:*** Warehouse management strategy aims to deploy the firm’s warehousing assets and skills to advance the business goals. The warehouse strategy must be aligned with the corporate strategy and objectives and also with the organization’s supply chain strategy, which defines the role of each warehouse, including its location, size, and capabilities. The strategy is implemented through efficient and effective warehouse processes, a safe and efficient warehouse layout that supports warehouse operations, and the use of appropriate warehouse technology.
- E. ***Packaging and Materials Handling:*** The effectiveness of packaging is influenced by product characteristics, economic and environmental goals, and the need for safe and efficient materials handling during storage and transportation. Appropriate packaging unitizes, protects, and can help businesses accomplish a variety of performance utility goals.

V. Transportation

Transportation moves goods and services across geographic lines, between where products are produced and where they are consumed, while allowing for competitive growth. At home and abroad, advances in transportation through technology and design have broadened the markets for both domestic and international competition. The wider a product's distribution and the greater its demand, the more manufacturers can leverage transportation's economies of cost. Logistics professionals are responsible for moving inventory throughout the firm's supply chain and to the firm's customers. They can use a combination of private and purchased transportation services with access to various modes of transportation, offering flexible solutions for transporting product from origin to destination.

- A. **Transportation Fundamentals:** Transportation systems connect the various supply chain components and must be properly managed and controlled with complete visibility and strong communication between multiple stakeholders and transportation managers. Proactive transportation management is critical to an efficient and economical operation and should be considered when a company plans organizational and supply chain processes. An integral part of logistics, the transportation process represents one of the largest portions of a logistics manager's budget.
- B. **Modes of Transportation:** Transportation consumes time, financial, and environmental resources. Understanding the characteristics of the different transportation modes enables managers to make appropriate selections based on relative modal performance in terms of speed, availability, dependability, capability, frequency, and cost. Intermodal transportation combines two or more modes to execute the shipment process, and represent a key means of transportation service.
- C. **Transportation Management:** Transportation management usually covers two areas: inbound and outbound flows. Transportation management's goal is to reduce transportation costs and increase delivery reliability through collaboration between all participants in the transportation transaction: carriers, providers, and non-vessel operating agents. Transportation managers must effectively manage the entire transportation process—from long-range strategies and operational planning to day-to-day execution.

VI. Global Logistics Considerations

For the global logistics manager, successful participation in international trade requires awareness and knowledge of a number of key components, including but not limited to:

- The infrastructure and systems of the countries to which it will export goods
- the regulations which govern each country that its shipments will travel through
- the customs clearing and documentation requirements for each shipment as dictated by each country and transportation mode used
- an understanding of how it can reach mutual agreement on the terms of sale, methods of payment and finance terms trade participants; and

- the process of determining the currency to be used for payment, transfer pricing and potential understanding of how free/foreign trade zones influences duties paid and total landed costs. Coordinating these international trade elements is an essential skill set for today's logistics professionals.
- A. **Infrastructure and System:** By identifying the macroenvironmental factors of global logistics that impact countries and organizations around the world, logistics professionals can be better prepared to manage their array of service providers, related transportation costs, and substitute product offerings. A variety of important international trade theories and practices, as well as discussion of the relative quality and quantity of transportation infrastructures across modes and countries provide a solid historical and geographic perspective of the many components that impact global trade today.
 - B. **Regulations:** Virtually every aspect of international trade is governed by regulations created by the government of each country through which a shipment will pass. With most international transactions, product shipments typically pass multiple borders, thus increasing the complexity of required documentation, safety and security measures, and involvement of logistics and trade specialists. Trade agreements and trading blocs can be used to facilitate international trade by mitigating against some of these complex procedures. Navigating the various changing export restrictions and lists of restricted/denied parties requires a working knowledge of each country's current regulations, quotas, control lists, and end use certificates.
 - C. **Customs Clearing and Documentation:** Today's logistics managers must be knowledgeable in preparing all the required documentation needed by customs to ensure that the customers' shipments arrive safely, securely, without damage, and on time at their final designation. Ease in using the Harmonized System Classification codes is vital to properly specifying the goods for export and each code assignment ultimately dictates the tariff rate charged for those products.
 - D. **Finance and Payment Options:** Global trade can often associate with higher levels of financial risks as a result of the many unknown variables that can impact international transactions. All parties must evaluate their risk of exposure and identify which financing and payment options are most appropriate and amenable to the parties involved. There must be agreement on all the terms of sale and the method and timeframe of payment. Familiarity with International Commercial Terms, also known as Incoterms®, is essential to clarifying and understanding how responsibilities are assigned between buyers and sellers in each transaction.
 - E. **Currency and Tax Considerations:** Similar to the selection of terms of sale and financing, global trade participants must decide which currency will be most appropriate for payment, based on the convertibility of the selected currency and the risk of fluctuation. As trade participants individually strive for sustained profitability, this must be appropriately balanced with levels of risk exposure between buyers and sellers. Related

options such as use of foreign trade zones and transfer pricing can lessen or mitigate these risks exposures.

VII. Logistics Network Design

The design of the network of warehouses and transportation lanes enable supply to be provided at the place and time of demand most effectively. This involves choosing the optimal number, location, and type of warehouse facilities, which can be supported by using both manual and automated decision support tools. Risk management helps logistics professionals determine how they can help minimize uncertainty and provide more reliable organizational results.

- A. **Facilities Planning:** Several factors need to be weighed to determine the proper location, number, and type of warehouse facilities given the trade-offs with transportation. This requires a detailed analysis of transportation and distribution requirements, while understanding the key trade-offs inherent in planning and deploying an optimized network.
- B. **Distribution Network Design:** Logistics professionals should follow a process to make the complex activities of network design easier to navigate, including understanding the various factors to consider when selecting a particular facility location. Distribution network design involves employing modeling techniques, such as heuristic, optimization, and simulation tools designed to help find the right balance among the competing needs of the multiple stakeholders involved in a modern logistics network.
- C. **Risk Management:** Risk management is a vital part of network design and must be included in order to make the network resilient and resistant to customer, financial, regulatory, security, hazard, business interruption, and other types of vulnerabilities. It is important for logistics professionals to learn the risk management process for identifying, prioritizing, and appropriately responding to each risk. These plans can include prevention or mitigation plans, as well as providing business continuity if a risk event occurs. Logistics requires an understanding of the types of insurance that can be acquired and the associated benefits and limitations. The amount of insurance obtained needs to be measured against risk levels to make sure that the investment in insurance is appropriate for the business situation.

VIII. Reverse Logistics and Sustainability

Companies around the globe use reverse logistics to manage their product returns in ways that actually turn the reverse flows into quantifiable value streams that not only contribute to the profitability of the organization, but also strengthen its triple bottom line (TBL) and its commitment to sustainability and social responsibility. These efforts make the organization more attractive to customers, suppliers, other supply chain participants, and to shareholders who value green initiatives, reduced carbon footprints and wiser usage of the world's finite resources.

- A. **Reverse Logistics:** Logistics is involved in deciding if the firm's reverse logistics strategy can be handled internally by creating a central returns center or by hiring a third-party provider to coordinate the activities. These activities may include recalls, overstocks,

reuse, refilling, repairing, remanufacturing, refurbishing, recycling, repurposing, recovery, and disposal. The firm must carefully weigh the benefits and challenges it will encounter for each of these sub-processes and develop a comprehensive strategy to master and manage its reverse flow processes and the value stream which will contribute positively to the organization's bottom line.

- B. **Sustainability:** Logistics plays a critical role in demonstrating social responsibility that is valued by its customers, shareholders, and the community. It can impact each dimension of social responsibility, safety, human rights, diversity, philanthropy, and ethics, by implementing specific tactics in its operations. With these targeted efforts and sustainability initiatives, logistics will impact the organization's triple bottom line (TBL) which measures their economic, social, and environmental impact. A commitment to sustainable processes and practices and choosing suppliers and other supply chain members according to those requirements will help the organization be a good environmental steward for the long-term.

About APICS and ASCM

For more than 60 years, APICS certifications and training have demonstrated a commitment to global supply chain excellence – achieved one person at a time. APICS CPIM, CSCP and CLTD are now part of the Association for Supply Chain Management (ASCM), the largest non-profit association for supply chain professionals. ASCM is proud to offer the globally recognized certification programs you've come to trust.

