Course Overview and Module 1: Supply Chain Management Fundamentals

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MODULE 1: SUPPLY CHAIN MANAGEMENT FUNDAMENTALS

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This section is designed to
- Define and illustrate the supply chain as a concept
- Define supply chain management as a concept and provide examples
- Describe the evolution of supply chain management globally and within companies
- Identify and describe key supply chain processes
- Identify specific ways in which supply chain management creates value for customers and investors (customer value and financial value)
- Define globalization and illustrate its impact on supply chain management.

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This section is designed to
- Define “corporate strategy” and “supply chain strategy” and explain the need to align the two strategies
- Explain the strategic importance of customer focus and the demand-driven supply chain
- Outline the elements that must be present to support alignment of supply chain and corporate strategy, including organizational design, supply chain processes, global metrics, technology and systems, and people
- Explain the need to be able to alter or abandon strategies in reaction to specified changes in the business environment or in the business itself
- List supply chain competitive priorities and explain the importance of each to the future direction of supply chain management
- Define enterprise resources planning (ERP) and identify the issues to resolve when designing an ERP system
- Outline risk management strategies that focus on security and continuity of operations.
Section C: Managing the Supply Chain

This section is designed to

- Describe the process of developing measurable goals and objectives
- Explain the use of corporate and supply chain strategy to drive supply chain decision making, including the make-or-buy decision
- Describe the principles underlying successful management of people in the supply chain
- Outline the use of metrics to guide supply chain management, including key performance indicators (KPIs), balanced scorecard, and SCOR® metrics
- Outline the financial impact of supply chain management decisions on costs and profits
- Identify the impact on supply chains of significant regulations, including the Sarbanes-Oxley Act and others.

Section D: Improving the Supply Chain

This section is designed to

- Describe the concept and purpose of continuous improvement and explain the reasons for adopting it as a supply chain management strategy
- Describe and evaluate the benefits of competitive benchmarking, best-in-class benchmarking, and process benchmarking (Oliver Wight checklist)
- Explain improvement strategies that emphasize reduction of errors and elimination of waste, including six sigma, lean thinking, and Just-in-Time (JIT)
- Describe steps to take in the process of implementing supply chain improvements and managing change.

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This section is designed to
- Define demand
- Describe core components of demand
- Define the role demand planning plays in supply chain management
- Identify the sources of variability in demand
- Describe supply chain dynamics, especially the bullwhip effect (or ripple effect)
- Explain strategies for successfully countering the bullwhip effect
- Describe the forecasting process, including both quantitative and qualitative approaches
- Describe various collaborations among supply chain partners that can facilitate successful demand planning, including CPFR
- Describe the role of marketing in demand planning.

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This section is designed to
- Contrast traditional “over-the-wall” design with collaborative design for the supply chain
- Describe the design process and identify the contribution of design to product cost and delivery cost
- Describe four levels of supplier involvement in product design and explain the trend toward supplier integration
- Explain the advantages and tradeoffs of various approaches to design, including component commonality, modular design, integral design, universality, mass customization, design for manufacturing, design for logistics, design for the environment, and postponement
- Describe the role of modularity, mass customization, and design for remanufacture in the design of services.
Section C: Operations Planning and Control

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This section is designed to

- Outline the common objectives of business planning
- Define “sales plan,” “sales and operations planning,” and “production plan”
- Identify the purpose and essential elements of sales and operations planning
- Define push, pull, and DRP distribution and explain the relative benefits of DRP
- Describe the purpose and objectives of master production scheduling (MPS)
- Identify the components of a master production schedule
- Describe the steps to follow in creating a master production schedule
- Differentiate independent and dependent demand
- Describe the purpose and elements of material requirements planning
- Describe the purposes of bills of material
- Explain the nature and functions of MRP, closed-loop MRP, and MRP II
- Define “lead time,” “exploding,” and “offsetting”
- Define capacity requirements planning (CRP) and enumerate the objectives of CRP
- Explain how to determine rated and demonstrated capacity
- Explain the purpose of production activity control (PAC) and describe the activities involved
- Describe basic scheduling techniques
- Identify the main types and purposes of inventory
- Identify key supply chain performance indicators relevant to inventory management
- Explain ABC analysis and how it shapes inventory management
- Distinguish between period counting and cycle counting and explain their benefits and drawbacks
- Explain the reason for using, the basic process, and the assumptions underlying fixed order quantity, the EOQ model, and order point models.

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- **Global Logistics and International Business** ............................................................. 2-231

This section is designed to

- Define “logistics” and explain its relationship to supply chain strategy
- Describe the interrelationship of the various logistics functions
- Define “warehousing” and sketch a brief background of its development
- Identify the role of warehousing in logistics and supply chain management
- Explain the basic criteria for deciding upon the number and location of warehouses
- Describe tradeoffs in determining uses of warehouse space, labor efficiency, and equipment
- Compare benefits and drawbacks of different types of warehouse ownership
- Outline warehouse operating principles
- Explain warehouse management systems (WMS) and information technology
- Describe the applications and benefits of various warehouse functions, including cross-docking, break-bulk, and mixing
- Outline the impact of automation on warehousing
- Describe the essential modes of transportation and analyze their capabilities
- List the objectives of transportation management
- Explain the goals of major transportation decision makers
- Explain the impact of economic factors on transportation decisions
- Analyze the benefits and risks of outsourcing logistics functions to third- and fourth-party logistics providers (3PL and 4PL)
- Describe the components of reverse logistics and explain how to profit from managing the reverse supply chain effectively
- Describe the impact of globalization on logistics
- Explain the contributions of intermediaries to export-import transactions, including foreign freight forwarders, EMCs, ETCs, NVOCCs, customs house brokers, consolidators, and export packers
- Outline the benefits of free trade zones (FTZs)
- Describe the goals, benefits, and challenges of NAFTA
- Explain how money crosses borders and describe the major ways of financing export-import transactions, including letters of credit and other means
- Explain risk management strategies for international supply chains.

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This section is designed to
- Define CRM and SRM
- Explain why customer relationship management (CRM) and supplier relationship management (SRM) are critical to a supply chain’s success
- Describe the two major shifts in business orientation toward customers and suppliers and the forces that have led to them
- Discuss the challenges facing organizations wishing to implement CRM and SRM
- Recognize cultural issues in implementing CRM and SRM.
- Describe the role of technology in CRM and SRM.

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This section is designed to
- Explain the relationship between CRM and the concept of the lifetime customer
- Illustrate the way CRM helps increase the visibility of the customer at various points in the relationship
- Define the purpose and components of a CRM strategy, including product, price, placement, and promotion
- Trace the changes in CRM factors throughout the product life cycle
- Describe the effect of customer type (noncustomer, vulnerable customer, loyal customer, lost customer) on a CRM strategy
- Relate the benefits of segmentation in a CRM strategy
- Contrast traditional demographic customer segmentation and segmentation by customer value, needs, or other factors
- List major factors to consider in gathering information about customers
• Review some ways in which technology can be used to enhance the CRM process
• Outline the steps required to implement a CRM strategy within an organization, including planning, assigning roles, defining CRM tasks, and measuring performance of the strategy
• List factors organizations should consider when deciding to outsource CRM.

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This section is designed to
• Distinguish SRM from traditional transactional relationships with suppliers
• Describe the goal of strategic sourcing
• List benefits associated with SRM
• Identify types of supplier relationships
• List the defensive and proactive benefits of strategic alliances
• Describe examples of successful strategic alliances
• List the requirements for a successful alliance
• Describe the steps required to implement a strategic alliance
• Describe the process for implementing an SRM strategy
• Explain the need for risk management in SRM strategies
• Trace a process for selecting and qualifying suppliers
• Outline criteria and methods for measuring supplier performance
• Illustrate SRM functions performed by SRM technology, especially Web-enhanced technology
• Describe the roles of planners, buyers, and purchasing agents in the SRM model
• Illustrate successful outsourcing of SRM
• Compare the benefits and risks of outsourcing SRM
• Describe supplier co-location.

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This section is designed to

- Appraise the value of integrating organizational collaboration across the entire supply chain
- Assess the impact of trends that are enabling greater collaboration
- List benefits in increased efficiency associated with supply chain integration
- List benefits in conflict of interest resolution associated with supply chain integration
- Evaluate the reasons some organizations and individuals resist supply chain integration efforts
- Explain the technological roadblocks to supply chain integration efforts
- Describe the attitudes participant organizations should adopt to increase the likelihood of SCM success
- Describe the collaborative principles participant organizations should adopt to increase the likelihood of SCM success
- List the business and cost considerations that participant organizations should evaluate before entering into SCM efforts
- List the necessary steps for a successful SCM implementation strategy.

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This section is designed to
- Show how information technology (IT) can reduce friction in the supply chain by enabling new business strategies and operational methods
- Classify the components of the IT infrastructure and how they fit together, including operating system and computer networking, databases, applications, and presentation devices
- Relate IT to strategic, tactical, and operational decision-making processes
- Relate the goals of data collection, access, analysis, and supply chain collaboration to the selection of technologies and the management of supply and demand
- Compare the different types of analytical tools used in planning and decision making, including models and simulations
- Compute the return on investment (ROI) for an IT initiative after weighing the potential benefits and costs of a plan
- Compare methods of enterprise application integration (EAI) for use in the supply chain
- Demonstrate how a company’s stage of supply chain development has implications for the types of technology it can use.

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This section is designed to
- Help you leverage your company’s existing internal enterprise resources planning (ERP) system for use in the external supply chain
- Outline the process needed to align strategy, technology, and business practices of ERP with the extended supply chain
- Distinguish between core functions of ERP and advancements in ERP related to supply chain management
- Assess current versus required capabilities for a business at a given supply chain stage, including use of upgrades, new releases, and additional ERP modules
- Show how core modules of an ERP system can be leveraged for SCM
- Analyze methods of ERP-to-ERP integration.
Section C: Innovative Technologies and Their Uses

- Advanced Optimization Tools
- Supply Chain Event Management (SCEM)
- Retail-Level Planning and Optimization Software
- Technology Trends

This section is designed to
- Classify the various types of innovative technologies used in supply chain management
- Appraise various types of advanced optimization tools for their use in SCM, including warehouse management systems (WMS), transportation management systems (TMS), product content data management (PCDM), and labor management systems (LMS)
- For each of the advanced optimization tools, assess the features that make each system more valuable than a traditional ERP system alone
- Evaluate how supply chain event management (SCEM) and supply chain visibility technology improve upon traditional SCM applications by providing active visibility
- Demonstrate how to apply advanced tools and analytical applications in operational planning
- Classify the functions and features of advanced planning and scheduling (APS).
- Understand the fundamentals of software as a service (SaaS) as a technology trend.

Section D: Using IT to Enhance Supply Chain Performance

- Electronic Data Transfer (EDT) and Standards
- Automatic Identification and Data Capture (AIDC)

This section is designed to
- Classify types of electronic data transfer (EDT) by standards and data formats, including EDI, XML, Web services, service-oriented architecture (SOA), and industry-specific formats
- Examine the impact of automatic identification and data capture (AIDC) technologies on supply chain management, especially from radio frequency identification (RFID)
- Relate the various aspects of RFID technology to one another: ID code, standards, registry, language, and hardware
- Show how to select appropriate AIDC devices depending on a company’s requirements.

Section E: e-Business

- e-Business Basics
- Internet-Enabled Supply Chains
- e-Business Considerations
- Use of e-Business in Collaborations and Joint Processes
- Business-to-Business (B2B) and Business-to-Consumer (B2C) e-Commerce
- Portals

This section is designed to
- Define common e-business terms
- Relate e-business strategies to the overall business strategies of a company
- Compare elements of the traditional vertical supply chain to the new virtual supply chain
- Demonstrate how e-business can be used in various levels of collaborations through the use of cross-enterprise bonds, processes, and technology
• Classify categories of business-to-business (B2B) and business-to-consumer (B2C) e-business, including Web-enabled e-business and B2B marketplaces
• Relate the phases of Web-enabled e-business to one another
• Classify B2B marketplaces and auctions by ownership and trading model
• Analyze e-marketplace issues, including benefits and risks to all parties, relationship to sourcing strategy, and the convergence of functions in online marketplaces
• Demonstrate how portals enable people-to-system coordination.

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