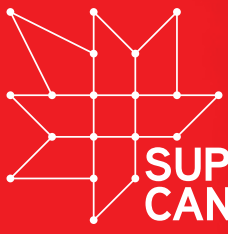

SUPPLY CHAIN CANADA™

PROFESSIONALS ADVANCING THE FUTURE.

THE COMPETENCIES OF CANADIAN SUPPLY CHAIN PROFESSIONALS

Second Edition 2022

SUPPLY CHAIN CANADA™

PROFESSIONALS ADVANCING THE FUTURE.

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MESSAGE FROM THE PRESIDENT & CEO OF SUPPLY CHAIN CANADA

Developed by Supply Chain Canada, this second edition of The Competencies of Canadian Supply Chain Professionals continues to offer supply chain practitioners, employers, academic institutions, and policy makers with a comprehensive guide to the competencies of one of our country's most economically vital professions. It sets out the many and complex competencies needed for end-to-end supply chain success.

The Competency Framework was designed by business and academic leaders. The competencies are forward-looking and aim to prepare people for the practice of supply chain management in the future. They are not simply a statement of current practice of the embodiment of how people function today.

Supply Chain Canada continually strives to elevate supply chain as a profession and to support our Supply Chain Canada members throughout their careers. We were delighted to work with so many exceptional people during the development of the first edition and appreciative of the knowledge and expertise of the team of academics commissioned to support this publication.

We hope you will find this publication to be a valuable reference for the supply chain community for years to come.

Yours truly,

CHRISTIAN ALAN BUHAGIAR
President and CEO, Supply Chain Canada

"Since the inception of humanity, nothing works without supply chains."

Amadou Diallo
CEO MEA, DHL Global Forwarding

EXECUTIVE SUMMARY

As has become clearer than ever to Canadians with the advent of the COVID-19 pandemic, everything we do, whether it involves a service on which we rely or a product that we use, is the result of an efficient supply chain working behind the scenes to drive our economy and better our lives.

The strategic importance and impact on the global marketplace in this emerging digital age highlight the need for new skill sets and competencies to augment existing expertise to ensure that our supply chains have both the reliability and agility to adapt to a world facing significant geopolitical challenges, recovery from a global pandemic, and new technologies emerging each and every day.

In 2019, Supply Chain Canada brought together a group of global "thought leaders" to develop a set of end-to-end Canadian supply chain competencies as a principal deliverable of our overall strategic plan. With critical input and direction from our Senior Executive Review Panel, we leveraged insights from the industry thought leaders to ensure that we are positioning supply chain professionals for success in a rapidly changing economic, technological, and societal landscape.

Collectively, The Competencies of Canadian Supply Chain Professionals, First Edition was released in January 2020. This document was the first of its kind in Canada. It not only built upon and strengthened the existing foundation of knowledge and expertise but also introduced new skill sets critical for the continued growth of supply chain management as a recognized profession – and helped us navigate the global pandemic.

As a result of this historic undertaking, these competencies, which were "Designed by Supply Chain Professionals for Supply Chain Professionals," have and continue to be enormously valuable to employers and professionals alike.

For employers, these competencies have provided needed assurance. By establishing a clearly defined measurable standard reflecting the changing skill sets that will deliver greater performance and value in the emerging digital world, employers can gauge the competency level of prospective hires.

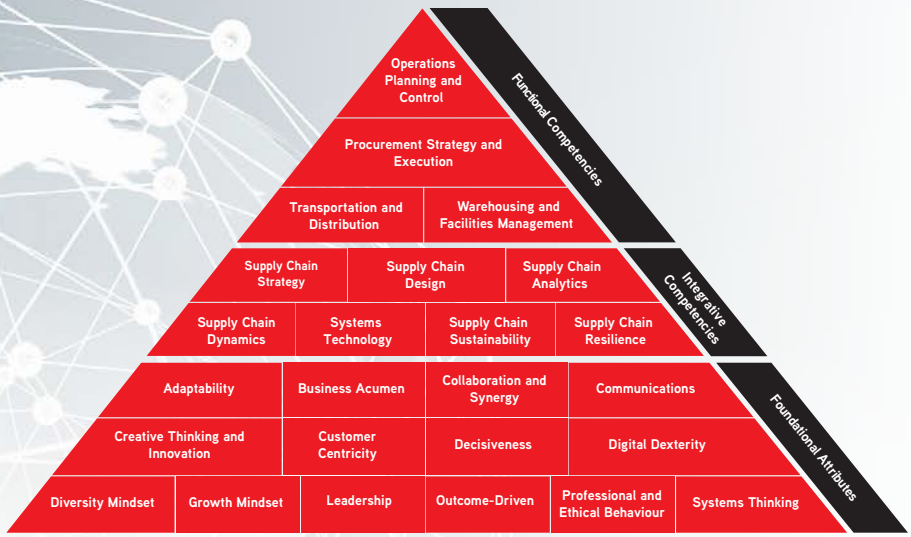
For supply chain professionals, these competencies have charted a comprehensive knowledge acquisition roadmap to ensure that their professional competencies will continuously align with the demands of a dynamically evolving marketplace, creating new and exciting career opportunities.

For higher and continuing education providers, the directional insights for furthering the effectiveness and impact of the supply chain profession will add greater value and relevancy to existing curriculums, thereby fulfilling what we believe is a critical role in the future of our industry.

For our profession, it has enabled our association to grow the SCMP™ designation in Universities and Colleges across Canada, strengthened continuing education, and further elevated the profession across the country.

Now, more than ever, our professional standards will determine the future of our industry. Guided by this report, our professional competencies continue to pave a clear path for our members' personal development and career advancement – and have helped attract new and vibrant talent to our profession.

That's why, in our second edition, we are keenly focused on the concept of Supply Chain Resilience. Not only is this critical to help ensure that our profession is ready to anticipate, prepare, and take on the challenges that threaten our profession, industry, and economy at large – it will also accelerate our ability to take advantage of new opportunities for growth and prosperity.



FRAMEWORK STRUCTURE

A supply chain is a complex system made up of people, processes and technologies that is engineered and managed to deliver value to all involved. Supply chain management (SCM) covers all aspects of product motion from the supplier's supplier to the customer's customer; and everything from production and product development to the information systems needed to direct these undertakings toward sustainability and the creation of a more circular economy.

There has been considerable change and increased complexity for supply chain practitioners to navigate when developing and executing functions across the end-to-end supply chain. The release of this publication reflects a maturing of supply chain management as a profession and will guide the continued evolution of SCM professionals in honing their knowledge and skills to ensure global competitiveness across the Canadian economy.

The above triangle illustrates the three areas of professional competence: Foundational Attributes, Integrative Competencies and Functional Competencies.

- **Foundational Attributes** include 14 competency categories that all successful supply chain management professionals across the Canadian supply chain community demonstrate.
- **Integrative Competencies** include 7 competency categories used to group the knowledge and skills required for credential-worthy performance that SCM professionals across the Canadian supply chain community are expected to demonstrate.
- **Functional Competencies** include 4 competency categories that SCM professionals across the Canadian supply chain community may elect to demonstrate.

A user of the framework can select the competencies for a specific need or context and, as such, it contains standards for many occupations (supply chain manager, category manager, compliance specialists, customs brokers, freight forwarders, logistics professional, procurement specialist, etc.) across most economic sectors (aerospace and defence, agribusiness, energy, finance, manufacturing, mining and natural resources, pharmaceuticals, retail, services, etc.).

FOUNDATIONAL ATTRIBUTES

"Foundational competencies is the entry ticket to play in the Supply Chain Arena."

Patrick Dittli
Chief Operating Officer
Office Depot Europe

Foundational Attributes focus on the individual who takes on supply chain management roles and responsibilities. They prescribe the ideal intellectual, personal, social, and emotional attributes that such an individual should possess to engage in life-long learning.

Foundational Attributes can be viewed as essential "qualities" that supply chain management professionals embody for job performance excellence and career progression. Individual SCM professionals bring these "qualities" to their jobs, regardless of their position, the employing organization, and the sector in which they work. While they convey to aspiring SCM professionals the attributes that any business professional (not just in supply chain management) must possess, these are not operationalized in the framework as skills and knowledge.

Foundational Attributes include 14 competency categories that all successful supply chain management professionals across the Canadian supply chain community demonstrate.

1 ADAPTABILITY

Supply chain management professionals demonstrate the openness and ability to apply routine knowledge rapidly and flexibly to novel circumstances. Supply chain management professionals are able to work effectively with new information and technologies, evolving business models and fluctuating economic and geo-political environments.

2 BUSINESS ACUMEN

Supply chain management professionals must demonstrate awareness of internal and external dynamics and an acute perception of the dimensions of business issues. They are able to conduct research and identify, collect, and analyze information about the national and international markets, global economies, political environment, technology trends and business operation issues to make informed decisions that are clearly linked to the organization's strategy and goals for optimal performance. SCM professionals are then able to see the "whole" picture (Define how decisions impact the entire organization versus a single business unit; Define the company strategy and how supply chain strategy plays into that; and recognize legal and risk elements) before recommending or executing a course of action.

3 COLLABORATION AND SYNERGY

Supply chain management professionals must demonstrate the ability to work with others toward a shared goal, actively collaborating, sharing responsibility and rewards, and contributing to the capability of the team. SCM professionals with this skill empathize and create an atmosphere of respect, helpfulness, and cooperation. They can draw others into active commitment to the team's effort. They build spirit, positive relationships, and a pride of identity on the team. This competency holds the key to collaboration of any kind.

4 COMMUNICATIONS (BOTH WRITTEN AND ORAL)

Supply chain management professionals communicate effectively through listening, speaking, writing with clarity, and effectively applying the art of guidance and negotiation. SCM professionals must be able to clearly communicate complex matters to internal and external audiences, at any employee level in any organization, and to the public.

5 CREATIVE THINKING AND INNOVATION

Supply chain management professionals discover new opportunities and problem-solving solutions by looking beyond current practices and using innovative thinking; they seek opportunities to "futureproof" the supply chain. Creative thinking applications include knowing when a new approach is required; importing and adapting a solution from outside the current work environment; or creating a new solution. SCM professionals have a solutions-focused mindset.

6 CUSTOMER CENTRICITY

Supply chain management professionals continuously develop a variety of effective ways to deal with service challenges. They utilize various methods for information sharing and information gathering to enhance the customer experience. Where necessary, SCM professionals recommend modifications to a process or processes to enhance service.

7 DECISIVENESS

Supply chain management professionals draw on strong analytical and critical-thinking skills and their capacity for innovative and integrative thought, as well as their ability to both connect and dissect "parts" and "wholes," identify and manage priorities, adopt a broad view to arrive at a recommended solution. SCM professionals demonstrate the capacity to confidently make decisions within the scope of their responsibility.

8 DIGITAL DEXTERITY

Digital Dexterity is the ability and desire to exploit existing and emerging technologies for better business outcomes. Supply chain management professionals demonstrate fluency in cognitive ability and social practice needed to leverage and manipulate media, information, and technology in unique and highly innovative ways. This includes the ability to communicate and collaborate across virtual and physical environments and mobilize social media and other networks to extract insights that are actionable.

9 DIVERSITY MINDSET

Supply chain management professionals need to treat all individuals fairly and respectfully; work effectively with others, regardless of their background, position, or status; ensure that opportunities are equally available to all; and respect different values and viewpoints. Researching and leveraging the target market's culture is critical to developing and maintaining successful performance-driven business relationships. SCM professionals must recognize, appreciate, and adapt to the norms of doing business with a variety of cultures if they are to be successful.

10 GROWTH MINDSET

Supply chain management professionals guide business transformation and growth. They embrace the concept that leaders act, influence and create momentum in search of future growth. They embrace diversity of thought, appreciate differences, and see and seize previously unseen opportunities. To lead business transformation, SCM professionals learn how to transform themselves to define the future growth of their organizations.

11 LEADERSHIP

Today's supply chain management professionals must have the ability to communicate corporate strategy clearly and concisely and how supply chain management links, supports and helps achieve this strategy. They must develop competence in goal setting, planning and organization, collaboration, process management, empathy, flexibility, responding to feedback and conflict management. SCM professionals have the ability to work within, develop and lead their own teams.

12 OUTCOME-DRIVEN

Supply chain management professionals focus on desired results and business outcomes. They set and achieve challenges and goals; clearly define mutual expectations of self and others; and take appropriate proactive actions to ensure obligations are met. SCM professionals define performance standards in terms of doing what is appropriate and doing it well.

13 PROFESSIONAL AND ETHICAL BEHAVIOUR

Supply chain management professionals draw on their ability to act with honesty, integrity, credibility, self-confidence, and independence, while coping with ambiguity, conflicts of interest and the need to protect the public interest. SCM professionals do more than adhere to the rules of professional conduct; they demonstrate ethical behaviour that exemplifies and enhances the reputation of the profession.

14 SYSTEMS THINKING

Supply chain management professionals maintain an approach to analyzing how organization systems (internal/external ecosystems, technology, end-to-end processes, etc.) interact and influence each other. They Define how the supply chain can add to the value chain of the organization; how continuous improvement processes can be leveraged to benefit the entire organization versus a single business unit; and how key stakeholders and teams can be mobilized through effective communication skills.

INTEGRATIVE COMPETENCIES

Integrative Competencies focus on the strategic management activities of an organization over time. They prescribe competences to continually think and plan on an organization and to align and integrate organizational functions to effectively and efficiently complete organizational tasks as change (environmental, political, structural, and technological) occurs.

Integrative Competencies include 7 competency categories used to group the knowledge and skills required for credential-worthy performance that supply chain management professionals across the Canadian supply chain community are expected to demonstrate. The Integrative competencies are:

Supply Chain Strategy

Supply Chain Design

Supply Chain Analytics

Supply Chain Dynamics

Systems Technology

Supply Chain Sustainability

Supply Chain Resilience

1.0 SUPPLY CHAIN STRATEGY

Supply chain management professionals demonstrate the ability to define the current marketplace environment, conduct a gap analysis and roadmap and create an end state vision that involves the integration of different elements of supply chain to form an integrated coherent supply chain that can deliver the required business results. SCM professionals examine the economic environment and, where appropriate, introduce new business models. In today's changing marketplace, they focus on customer centricity and growth and profitability, instead of efficiency and cost only.

1.1 Situational Analysis Assessment

Definition: Review an existing or develop a new supply chain strategy that involves the integration of different elements of supply chain, such as demand strategy, demand fulfillment, sourcing strategy and supply chain planning, to form an integrated coherent supply chain that can deliver the required business results. Alignment with business strategy and other functional strategies such as marketing and manufacturing is also required.

1.1.1 Understand the importance of supply chain strategy as a mechanism to achieve integration across the different functions

1.1.2 Understand the different end-to-end workflow processes of supply chain management

1.1.3 Understand why it is important that the business strategy and supply chain strategy should be integrated

1.1.4 Perform basic analysis of the elements of supply chain strategy such as outbound strategy and sub-strategies

1.1.5 Apply basic analysis techniques to benchmark improvement opportunities

1.1.6 Consider new business strategies, including software as a service

1.1.7 Align strategies across macro-processes such as network strategy, facility design and layout, customer demand fulfillment and transportation operations

1.1.8 Develop basic implementation plans for relevant elements of the supply chain strategies

1.1.9 Identify legal, ethical and human resource factors that may impact decisions and delivery of the strategy

1.1.10 Align supply chain planning with key performance objectives

1.1.11 Develop improvement plans for the optimal management of end-to-end processes of the supply chain through digitization and automated workflows

1.1.12 Share business intelligence and act as an agent for change

1.1.13 Align supply chain to unique strategy of the organization as well as optimizing capital and returns

1.2 Supply Chain Multiplicity

Definition: This involves identification of different supply chain models and the understanding of the difference in functioning between the different models. The emphasis is on the different performance objectives, different configurations required, the end-to-end workflow requirements and how technology enablement will differ across different models.

1.2.1 Identify and provide examples of different types of supply chains

1.2.2 Explain why different supply chains are functioning in different ways

1.2.3 Identify the factors that distinguish different supply chains from one another

1.2.4 Demonstrate cause-and-effect understanding by explaining why it is required to develop different strategies for different supply chains

1.2.5 Identify which aspects from diverse supply chain strategies need to be different

1.2.6 Differentiate performance objectives of different types of supply chains from each other

1.2.7 Explain the different configurations required for different types of supply chains in detail

1.2.8 Outline how logistics networks between different supply models will operate differently from each other

1.2.9 Apply approaches to segmented supply chain strategy, which go beyond the idea of Lean and Agile supply chains

1.2.10 Develop different inventory strategies for the different supply chain configurations

1.2.11 Formulate different strategies that deliver the desired results for the different supply chains

1.2.12 Develop process models to support the relevant supply chain configuration

1.2.13 Integrate different types of supply chain configurations within the same business

1.2.14 Integrate different functional requirements for diverse supply chains

1.2.15 Implement and, where possible, digitize or automate process models that leverage the common aspects of diverse supply chains, but provide unique functionality

1.2.16 Implement and, where possible, digitize or automate performance management approaches to integrate diverse supply chains in the same business

"Supply Chain Canada has done a solid job creating competencies that will allow organizations to evaluate their staff on their demand management skills."

Martin Montanti, MBA, FSCMP, P.Mgr, SCMP
Assistant Deputy Minister
Procurement and Supply Chain
Central Services
Government of Manitoba

1.3 Demand Management Strategy

Definition: Demand management strategy is the process of analyzing the key trends and dynamics in the industries and markets. The objective of this analysis is to identify cost trends, technology trends, potential structural changes in the market and associated risk factors. This analysis will provide direction for the design of supply chain strategies.

1.3.1 Interpret different industry models in terms of capital intensity and cost structures

1.3.2 Demonstrate cause-and-effect understanding by explaining how the supply chain configuration for different industry models will be different in terms of its functioning

1.3.3 Explain how the key performance measures will vary for the different industry models

1.3.4 Explain how the supply chain process designs for different industry models will have a varied focus

1.3.5 Demonstrate cause-and-effect understanding by explaining the impact of different industry models on the scalability of the supply chain

1.3.6 Apply the concept of an industry business model to selected industries and identify the potential impact on supply chain

1.3.7 Develop a clear strategy to manage costs of working capital and how the levers you use impact the bottom line

1.3.8 Develop the supply chain configuration for different industry models that will be different in terms of their functioning

1.3.9 Develop key performance measures for different industry models

1.3.10 Develop broad templates to optimally manage end-to-end workflows for the designs of different industry models

1.3.11 Develop models to illustrate the impact of different industry models on the scalability of the supply chain

1.3.12 Recognize and manage risks and disruptions that may occur

1.4 Pricing Strategies

Definition: Developing a pricing strategy is the result of a complex set of calculations, research and analysis, and risk-taking. The most appropriate strategy considers a variety of factors (market segments, market conditions, competitor actions, trade margins, input costs and others). Determining pricing strategy is targeted at the defined customers and against competitors.

1.4.1 Understand the concept of cost-based and cost-plus-based pricing

1.4.2 Understand the concept of demand-based pricing

1.4.3 Explain the meaning of different types of demand-based pricing (price skimming, price discrimination, bundle pricing, penetration pricing and value-based pricing)

1.4.4 Explain the business rationale for each type of demand-based pricing

1.4.5 Identify the various cost inputs and variables involved

1.4.6 Understand the various factors that impact pricing (manufacturing cost, market place, competition, market condition, and quality of the product)

1.4.7 Assess market segmentation and market frictions to determine most appropriate pricing strategy

1.4.8 Baseline costs using market knowledge and research

1.4.9 Adjust pricing strategy according to organization's business needs and appropriate market strategy

1.4.10 Consider and calculate financial implications (expenses and capital)

1.4.11 Manage supply chain risks

1.5 Global Logistics Strategies

Definition: Global logistics strategies focus on the development of different types of transport solutions (intermodal, multi-modal, commingled) that combine different modes of transport into an integrated strategy for global logistics. The management and improvement of a global logistics network of agencies and service providers also forms part of this competency.

1.5.1 Explain critical elements and components of a global logistics solution

1.5.2 Explain the importance of a global network of agencies or offices to optimize global logistics solutions

1.5.3 Explain the concept of a base load to cover fixed costs, with added volumes to improve profitability of the load

1.5.4 Demonstrate cause-and-effect understanding by explaining what challenges are involved in the management of global multi-modal logistics solutions

"Supply chain professionals are building virtual information highways that connect people and move data. It goes far beyond delivering goods and ensuring trade. It is intrinsically linked to human development and responsible use of natural resources. Thrilling times to work in this area."

Pierre Courtemanche
Sustainability & Supply Chain Strategist
Founder of GeoTraceability Ltd.
Groupe OPTEL

1.5.5 Explain the key tactical objectives to be achieved through key modes of transport in global logistics

1.5.6 Participate in the process of combining different types of cargo to ensure optimization of transport capacity in a single industry

1.5.7 Participate in the process of developing service providers for the provision of multi-modal global logistics in a single industry

1.5.8 Participate in the process of developing multi-modal solutions for global logistics in a single industry

1.5.9 Participate in the process of developing international freight solutions by balancing levels of consolidation of freight and levels of flexibility required in a single industry

1.5.10 Integrate land-based infrastructure design with multi-modal global logistics solutions in a single industry

1.5.11 Lead the coalescing of different types of cargo from different industries to ensure optimization of transport capacity

1.5.12 Lead the development of service providers for the provision of multi-modal global logistics across different industries

1.5.13 Lead the development of multi-modal solutions for global logistics across different industries

1.5.14 Lead the development of international freight solutions by balancing levels of consolidation of freight and levels of flexibility and cost efficiency required across different industries

1.5.15 Lead the integration of land-based infrastructure with multi-modal global logistics solutions across different industries

1.5.16 Consider and calculate financial implications (expenses and capital)

1.5.17 Manage supply chain risks

2.0 SUPPLY CHAIN DESIGN

Supply chain management professionals demonstrate the ability to define the current marketplace environment, conduct a gap analysis and roadmap and create an end state vision that involves the integration of different elements of supply chain to form an integrated coherent supply chain that can deliver the required business results. SCM professionals examine the economic environment and, where appropriate, introduce new business models. In today's changing marketplace, they focus on customer centricity and growth and profitability, instead of efficiency and cost only.

2.1 Supply Chain Design

Definition: The development of business rules, policies, procedures and controls during the design, implementation and maintenance of supply chain strategies and processes. The objective is to ensure adherence to business rules at all times with the purpose of achieving consistent operational activities, mitigating supply chain risks and ensuring that the required contingencies are in place.

2.1.1 Explain the importance of design in achieving supply chain objectives

2.1.2 Explain the risks if design is not complied with in the broader business context

2.1.3 Explain the rationale for the different approaches, regulatory frameworks and tools (e.g. SCOR, Six Sigma, Lean, etc.)

2.1.4 Explain in broad terms the relevant ISO systems (Quality – 9001; Environmental – 14001; Safety and Health – 18000)

2.1.5 Explain the auditing and assessment process

2.1.6 Develop basic design for specific processes such as customer demand, logistics or facilities management

2.1.7 Implement operating procedures, policies and business rules for identified risks in the different areas

2.1.8 Complete compliance audits to determine the appropriateness of the supply chain design, operating procedures and business rules

2.1.9 Monitor key performance indicators (KPI's) to track adherence to business rules and policies

2.1.10 Implement corrective actions in case of non-compliance

2.1.11 Develop a basic risk matrix that identifies potential risks in the different areas across the supply chain

2.1.12 Apply the relevant ISO systems (Quality – 9001; Environmental – 14001; Safety and Health – 18000) for selected parts of the transport of a business unit

2.1.13 Identify all the potential risk areas across the supply chain of a business unit

2.1.14 Develop key performance indicators (KPI's) to track potential risk areas

2.1.15 Develop compliance audits to be implemented to measure the appropriateness of the supply chain design

2.1.16 Initiate increased use of clean master data in decision making across functional lines and throughout the organization

2.1.17 Champion a data governance organization to promote and establish the right level of emphasis and support for technology

2.1.18 Align outbound supply chain design with internal requirements from other areas such as supply chain operations and planning

2.1.19 Enable design, implementation and maintenance processes through the use of systems technology to ease measurement and improve responsiveness to non-compliance

2.1.20 Implement and, where possible, digitize or automate change management programs to improve the level of responsiveness to business demands

2.1.21 Develop an integrated risk matrix that would reflect risks in the different areas

2.1.22 Monitor compliance to assess performance

2.1.23 Design and conduct internal audits

2.1.24 Contribute to audit design and how it is applied to various areas of risk

2.2 Demand and Supply Balancing

Definition: The process of identifying and measuring the gaps and imbalances between demand and resources to effectively resolve the variances through marketing, pricing, packaging, warehousing, outsource plans or some other action. The focus is on a solution(s) that will optimize service, flexibility, costs and assets (or other supply chain inconsistencies) in an iterative and collaborative environment. The process of developing a time-phased course of action that commits supply chain resources to meet constraint-based supply chain requirements. This process includes the formalization of the sales and operations plan.

2.2.1 Explain the process of demand and supply balancing and its importance for supply chain performance

2.2.2 Provide examples of the potential gaps or imbalances between demand and supply that can occur

2.2.3 Explain the difference between hard and soft constraints in demand supply balancing

2.2.4 Provide examples of the potential options to resolve these imbalances between demand and supply

2.2.5 Explain the importance of communicating the plan and influencing implementers of the plan to adhere to the constrained plan

2.2.6 Explain the process of reviewing and re-planning to ensure that plans are adjusted based on changes during execution of the plan

2.2.7 Implement, digitize or automate (where appropriate) a process of demand and supply balancing for a selected business segment to ensure supply chain performance

2.2.8 Identify the potential gaps or imbalances between demand and supply that can occur for a selected business segment

2.2.9 Identify hard and soft constraints in demand supply balancing for a selected business segment

2.2.10 Identify the key business and supply drivers causing imbalances between demand and supply for a selected business segment

2.2.11 Identify the potential options to resolve these imbalances between demand and supply for a selected business segment

2.2.12 Implement, where appropriate, capacity management and planning strategies (outsourcing business operations, purchasing additional equipment and leasing or selling commercial property)

2.2.13 Re-balance the supply chain through selection of appropriate options for a selected business segment

2.2.14 Adapt to evolving technologies and shifting global environments

2.2.15 Facilitate the cross-functional integration required to improve demand and supply balancing across segments in a business unit

2.4 Supply Chain Improvement Concepts

Definition: For improving supply chain performance, it is important to have a good understanding of the improvement concepts that underline supply chain performance and include them as part of a process of performance improvement.

2.4.1 Identify potential improvement concepts that can be implemented to improve supply chain performance

2.4.2 Explain the concepts and principles of improvement

2.4.3 Benchmark which supplies chain improvement concepts can be applied for the improvement of the performance of the company's supply chain

2.4.4 Formulate an action plan to implement improvement concepts such as quick response and others in the supply chain of the company

2.4.5 Implement the action with improvement concepts such as quick response and others in the supply chain of the company

2.4.6 Manage the identification of which supply chain improvement concepts can be applied for the improvement of the performance of the company's supply chain

2.4.7 Manage the formulation of an action plan to implement improvement concepts such as quick response and others in the supply chain of the company

2.4.8 Manage the implementation of the action with improvement concepts such as quick response and others in the supply chain of the company

3.0 SUPPLY CHAIN ANALYTICS

Supply chain management professionals use a variety of techniques (statistics, predictive modelling, and machine learning) to find meaningful patterns and knowledge in order, shipment, and transactional and sensor data. An important goal of supply chain analytics is to improve forecasting and efficiency and be more responsive to customer needs as well as optimize cost and capital aligned to the strategy.

3.1 Data Analytics

Definition: Data analytics is the process of capturing, analyzing, integrating and interpreting high-quality, real-time data that fuels process optimization and predictive analytics with the aid of a main data engine and peripheral systems/tools. Data analytics technologies and techniques are widely used to enable the organization to make more-informed business decisions leading to increased revenues, improved operational efficiency, optimized marketing campaigns and customer service efforts. Data allows organizations to integrate with key stakeholders and respond more quickly to emerging market trends and gain a competitive edge over rivals – all with the ultimate goal of boosting business performance.

3.1.1 Understand the importance of master data analysis for achieving supply chain performance

3.1.2 Collaborate with the IT team to migrate data from legacy systems

3.1.3 Decentralize master data for analysis and interpretation

3.1.4 Structure and filter data in ways that allow the organization to execute key actionable decisions

3.1.5 Interpret the challenges of data analysis resulting from inputs and the impacts on outcomes

3.1.6 Use methods and algorithms to turn very large collections of master data into actionable insight

3.1.7 Conduct data profiling, transformation and cleaning, data mining, data warehousing and cloud computing operations

3.1.8 Design, implement and manage predictive analytics

3.1.9 Select the appropriate analysis, decentralize master data for analysis, menu-driven and syntax programming, interpret outputs and present results in a fitting format

3.1.10 Provide techniques that model the relationships between inputs and outputs

3.1.11 Provide tools to optimize actions against a complex set of objectives to find best practices and design best policies under all circumstances

3.1.12 Consider the competitive advantages created by analytical capabilities

3.1.13 Embed analytics into the business culture

3.1.14 Build capability for use of real-time analytical insights (including dashboards, notifications or predictive analytics) through proof of concepts, learning through trial

3.1.15 Consider applications that provide new capabilities that customers will value (increased speed of decision making, increased asset velocity, creation of new performance analytics)

3.1.16 Ensure data governance policies, rules and procedures for handling master data are in place and the possibility of errors is minimized through increased control and compliance of master data

3.1.17 Consider the creation of a Master Data Centre of Excellence

3.1.18 Prototype/deploy the application of predictive analytics, artificial intelligence and business intelligence

3.2 Demand Sensing and Shaping

Definition: Demand sensing and shaping is the process of developing an understanding of the factors that determine the true demand patterns of customers. This understanding is then used to implement strategies that influence or shape the demand pattern to improve the profitability of fulfilling that demand pattern.

3.2.1 Explain how customer demand is the key driver of all supply chain activities

3.2.2 Explain what the impact on the supply chain is of fluctuating demand patterns

3.2.3 Explain what the bullwhip effect is and what factors cause it

3.2.4 Identify the factors that can potentially influence the customer demand pattern

3.2.5 Identify the potential strategies that can be implemented to influence the customer demand pattern

3.2.6 Map the demand of a specific customer and determine the demand pattern

3.2.7 Identify the factors that drive or influence the actual demand pattern of a customer

3.2.8 Identify and quantify the impact of a fluctuating demand pattern on the profitability of fulfillment

3.2.9 Formulate strategies that can be implemented to improve the profitability of fulfilling that demand pattern

3.2.10 Implement the strategies formulated to improve the profitability of fulfilling that demand pattern

3.3 Performance Metrics

Definition: Supply chain performance metrics include two aspects: performance attributes and performance metrics. A performance attribute is a grouping of indicators used to express a specific strategy, while an indicator is a standard for measurement of the performance of the end-to-end workflow involved in supply chain. The performance attributes include reliability (this focuses on the predictability of the outcome of a process); responsiveness (describes the speed at which tasks are performed); agility (describes the ability to respond to external influences); cost (describes the cost of operating a process and includes all aspects of costs expressed as total costs to serve); and assets (describes the ability to efficiently utilize both fixed and variable assets). Supply chain performance metrics are defined at different levels based on the composition of the relevant supply chain process. Performance metrics are aligned with performance attributes and provide cause-and-effect measurements at three levels to enable performance measurement to a detail or activity level.

3.3.1 Explain the concept of supply chain performance metrics or measures

3.3.2 Provide examples of different supply chain performance attributes such as reliability, etc.

3.3.3 Explain how the different levels of supply chain performance metrics or indicators relate to each other

3.3.4 Outline the key supply chain performance metrics that are critical for the organization's success

3.3.5 Explain the importance of real-time data for supply chain performance measurement

3.3.6 Identify some of the different types of real-time data (statistics and quantitative research)

3.3.7 Calculate perfect order fulfillment for a business unit or a business

3.3.8 Calculate order fulfillment cycle time for a business unit or business

3.3.9 Calculate total cost to serve for a business unit or business

3.3.10 Calculate the cash-to-cash cycle time for a business unit or business

3.3.11 Calculate the return on fixed assets for a business unit or business

3.3.12 Calculate the return on working capital for a business unit or business

3.3.13 Identify which supply chain processes would impact each of the above supply chain performance metrics

3.3.14 Link the relevant supply chain best practices to each of the above calculations

3.3.15 Calculate return on capital and its impact on decisions

4.0 SUPPLY CHAIN DYNAMICS

Supply chain management professionals must define the dynamics and risks within the supply chain community, both large and small. Supply chains are complex systems involving multiple organizations with different goals and objectives. Additionally, there are external forces and trends that can impact (positively or negatively) a supply chain's efficiency and effectiveness. Supply chains are subject to a wide number of potential disruptions – from both within and outside the supply chain.

4.1 Geo-Political Environment

Definition: This involves understanding existing/evolving rules and regulations that govern international trade to ensure compliance of international import/export of goods and services.

4.1.1 Explain the importance of trade lanes and the development of international trade for the design of global supply chains

4.1.2 Explain the integration of global logistics design with the types of supply chain strategies required for different industries

4.1.3 Explain the integration of the global supply chain taking into account stock levels, product flow and different transport modes

4.1.4 Provide examples of the challenges and required strategies to synchronize operations across multiple players in the global supply chain

4.1.5 Explain the challenge of creating visibility of requirements and progress across the different participants in the supply chain

4.1.6 Conduct a situational and cost analysis to define the scope of any proposed international trade initiative, the current capabilities of the organization and the potential impact on clients, suppliers and other partners

4.1.7 Understand and assess the ethics and socio-ethics within a region/country that may impact business outcomes

4.1.8 Evaluate potential risk factors in the target market based on research results (regional commerce law, climate, geography, regional customs and social mores, etc.)

4.1.9 Identify human resource skill levels and production capacity, for example: current level of diversity in the workplace, number of languages spoken in the workplace and current experience in international trade

4.1.10 Understand and comply with existing/emerging legal mechanisms and rules that govern international trade, including corporate tax law and trade compliance practices

4.1.11 Consider import and export taxes, relative currency valuations and volatilities

4.1.12 Lead the process of developing strategy templates or approaches for different trade lanes for multiple industries

4.1.13 Lead the process of developing different strategy templates for different types of supply chains in different industries

4.1.14 Lead the process of designing the synchronization of the global supply chain across elements such as transport modes, product flow, customs, clearing and service providers

4.1.15 Lead the process of designing visibility and collaboration mechanisms across different participants in the global supply chain

4.1.16 Manage the relationships associated with multiple directional flows of goods and services in a complex, global system

"Applying the right competency at the right situation decides in today's fast-paced operational environment about success - or failure."

Patrick Dittli
Chief Operating Officer
Office Depot Europe

4.2 Negotiations and Conflict Resolution

Definition: Negotiation is an open process for parties to find an acceptable solution to a matter of mutual interest. Negotiations result from careful analysis of the wider business and political implications when making decisions, including the effectiveness of outcomes. The use of productive and meaningful communications will facilitate a clearer understanding of common areas of interest leading to an increased understanding of what each party values and more win-win results when challenging information to detect discrepancies in reasoning.

4.2.1 Understand the key steps in a negotiation process

4.2.2 Organize and accumulate the necessary information or data

4.2.3 Identify main negotiating points and possible areas of leverage

4.2.4 Align with the organization on all core outcome elements and requirements

4.2.5 Gain the trust and respect by exploring all parties' needs, concerns and initial positions

4.2.6 Build common ground by highlighting areas of agreement, enabling future efforts to focus on areas of disagreement

4.2.7 Limit ability of other parties to gain leverage through material/non-public information

4.2.8 Keep dialogue issue/outcome oriented by managing the interpersonal process

4.2.9 Engage in mutual problem solving by brainstorming alternative positions or approaches and evaluating them openly and fairly

4.2.10 Build support for preferred alternatives by relating them to the needs of others

4.2.11 Respond to objections by emphasizing value and exposing problems with undesirable alternatives

4.2.12 Seek a win-win solution through a give-and-take process that recognizes the core needs of all parties

4.2.13 Invoke alternative dispute resolution mechanisms such as mediation and arbitration

4.3 Project Management

Definition: Project management is the practice of initiating, planning, executing, controlling and closing an initiative geared toward the achievement of specific goals and meeting specific success criteria within the specified time. The primary constraints are scope, time, quality and budget. The secondary – and more ambitious – challenge is to optimize the allocation of necessary inputs and apply them to meet pre-defined objectives.

4.3.1 Develop strategic objectives for the project

4.3.2 Identify and evaluate options for the project

4.3.3 Prepare the business case for undertaking a project

4.3.4 Prepare a project brief

4.3.5 Establish and maintain a culture of risk awareness

4.3.6 Identify strategic risk and evaluate options for minimizing project risk

4.3.7 Review the effectiveness of measures for controlling risk

4.3.8 Establish the requirements of the project management team

4.3.9 Establish the project team's working methods and monitor performance

4.3.10 Develop operational objectives for the project

4.3.11 Prepare the specification of requirements

4.3.12 Estimate and specify resources required for the project

4.3.13 Outline the project schedule, including key milestones

4.3.14 Develop a work breakdown structure for the project

4.3.15 Specify activities for the project schedules

4.3.16 Recommend the means of procuring resources for the project

4.3.17 Develop a detailed schedule for the project

4.3.18 Monitor risks and review the effectiveness of measures for controlling them

4.4 Relationship Management

Definition: Relationship management is the process of implementing demand or market strategies. It involves the implementation of different product offerings in line with market and customer segmentation strategies. Establishing relationships with new customers and managing relationships with existing customers are included in the process. This process needs to be aligned with the sales process and calling cycles of the sales team.

4.4.1 Explain the basic concept of market and customer segmentation

4.4.2 Provide examples of how product offerings for different customer segments might differ

4.4.3 Explain the concepts of customer satisfaction and service quality

4.4.4 Provide examples of how customer service can be measured

4.4.5 Explain the implication of the Pareto principle applied to customers

4.4.6 Explain the concept of customer profitability and how it should be calculated

4.4.7 Explain the process of customer engagement to ensure successful achievement of objectives

4.4.8 Apply market and customer segmentation to a portfolio of customers for a business or business unit

4.4.9 Participate in the development of different product offerings for different customer segments

4.4.10 Participate in the process of measuring customer satisfaction or customer service for a portfolio of customers

4.4.11 Apply the Pareto principle to a portfolio of customers to determine the different segments

4.4.12 Participate in the process of calculating customer profitability for a portfolio of customers

4.4.13 Participate in the process of customer engagement to ensure that customer and revenue targets are realized

4.4.14 Manage the process of market and customer segmentation of a portfolio of customers for different businesses or business units

4.4.15 Manage the process of developing different product offerings for different customer segments

4.4.16 Manage the process of measuring customer satisfaction or customer service for a portfolio of customers

4.4.17 Manage the application of the Pareto principle to a portfolio of customers to determine the different segments

4.4.18 Manage the process of calculating customer profitability for a portfolio of customers

4.4.19 Manage or co-manage the process of customer engagement to ensure that customer and revenue targets are realized

5.0 SUPPLY CHAIN RESILIENCE

Supply chain management professionals with this competency work effectively across internal functions and network partners to craft and implement policies and practices that ensure supply chains are designed to be robust. Their organizations experience minimal negative effects and recover quickly from manifested supply chain risks on productive assets, the flow of physical goods and information and non-physical assets (e.g., cash, intellectual property, employees, etc.).

5.1 Risk Management

Definition: A competent Supply Chain Management professional can anticipate, define, diagnose, and monitor supply chain risks. Supply chain risks are events and factors with the potential to negatively affect supply chains; these manifest as uncertainty in financial markets, threats from project failures (at any phase in the design, development, production or sustainment life cycles), new markets, product innovations, legal liabilities, accidents, natural causes and disasters, deliberate attack from an adversary, copyright violations, counterfeit products, or events of uncertain or unpredictable root-cause. A competent SCM professional can determine the likelihood that these events will occur and quantify the negative effects that their occurrence has on supply chain operations and on the flow of goods, information, human resources, and non-physical assets (including copyrights, trademarks, patents, and other intellectual property).

5.1.1 Determine and assign responsibility for supply chain risks monitoring

5.1.2 Identify, define, and communicate known supply chain risks and their sources

5.1.3 Determine how and why known supply chain risks disrupt inbound and outbound physical flow of goods, information, human resources, or non-physical assets

5.1.4 Quantify the probability and loss associated with known supply chain risks in the absence of inventory and capacity buffers

5.1.5 Identify supply chain risks that may disrupt inbound and outbound physical flow of goods, information, human resources, or non-physical assets

5.1.6 Estimate the probability and loss associated with potential supply chain risks in the absence of inventory and capacity buffers

5.1.7 Establish mechanisms to track known supply chain risks

5.1.8 Identify and monitor proxies to detect potential supply disruption risks

5.1.9 Codify, continually update, and ensure organizational access to information about known and potential supply chain risks

5.1.10 Establish strong relationships and dialogue with supply chain partners to identify and understand past and potential supply chain risks

5.2 Supply Chain Disruption Recovery and Prevention

Definition: A competent supply chain management professional can detect deviations in the planned flow of physical goods, information, human resources, or non-physical assets. They can plan and work with stakeholders to recover expediently and flexibly from supply chain disruptions; and implement policies, procedures, and systems to minimize occurrences of future supply chain disruptions.

5.2.1 Invest in warning systems that provide real-time data about planned flow of physical goods, information, human resources, or non-physical assets and trigger points

5.2.2 Establish a "standby" supply chain disruption recovery team with sufficient authority and resources

5.2.3 Enact protocols for reacting to deviations in the planned flow of physical goods, information, human resources, and non-physical assets

5.2.4 Assess and communicate proactively the direction, scope, and loss from interruptions in the planned flow of physical goods, information, human resources, and non-physical assets

5.2.5 Determine the location and magnitude of buffer inventories and production and/or transportation capacity

5.2.6 Involve supply chain partners in early detection of supply chain disruptions

5.2.7 Plan with supply chain partners to mitigate and recover from supply chain disruptions

5.3 Supply Chain Security

Definition: A competent supply chain management professional can determine vulnerabilities in physical assets and digital infrastructure that increase organizational exposure to egress and ingress types of breaches. Egress open physical and/or digital doors allowing for the theft of physical goods, information, and non-physical assets such as intellectual property and proprietary data. Ingress introduces counterfeits, copyright violations, and brand impersonators into legitimate supply chains.

5.3.1 Assess and delineate the strengths and weaknesses of physical, digital, market, logistical, and supply environments in terms of vulnerabilities to egress and ingress

5.3.2 Conduct threat assessments to physical assets and transportation modes

5.3.3 Determine the strength of legal instruments to deter egress and ingress

5.3.4 Quantify the likelihood and magnitude of loss from criminal acts of counterfeits, thefts, copyright violations, and patent infringement by organizational members, supply chain partners, and unauthorized third parties

5.3.5 Implement mechanisms to deter criminal acts of counterfeits, thefts, copyright violations, and patent infringement by organizational members, supply chain partners, and unauthorized third parties

5.3.6 Contribute to and ensure compliance with loss prevention plans by the organizational members and supply chain partners

5.3.7 Codify and communicate proactively formal plans within the organization and across supply chain partners to deal with egress and ingress breaches

5.3.8 Invest in data-driven systems to sense egress and ingress threats by organizational members, supply chain partners, and unauthorized third parties

5.4 Structure and Change Management

Definition: This is the process of aligning people with different views and perspectives with a shared vision and shared objectives in terms of outbound supply chain strategy and direction. It involves addressing resistance to change through change management interventions with communication mechanisms, dealing with obstacles in the process of managing different stakeholders representing different groups with different objectives.

5.4.1 Explain the basic principles and concepts involved in change management

5.4.2 Provide examples of the concept of stakeholder management

5.4.3 Provide examples of the potential barriers to change

5.4.4 Identify potential strategies to overcome barriers to change

5.4.5 Participate in change management for initiatives within a specific sub-process or function of the supply chain

5.4.6 Identify potential barriers to implementing outbound supply chain projects

5.4.7 Formulate and implement a change management program

5.4.8 Identify conflicting objectives of different stakeholders within a sub-process

5.4.9 Facilitate a process of compromises to achieve a common goal within a sub-process

5.4.10 Participate in the process of aligning performance objectives for a sub-process

5.4.11 Develop and implement change management programs across macro-processes within a business

5.4.12 Demonstrate approach(es) to remain current with changes in technology, business models and programs and monitor implications for the business

5.4.13 Facilitate a process to align vision and objectives across different supply chain macro-processes

5.4.14 Facilitate a process of aligning objectives across functions such as supply chain, marketing, manufacturing, and financial management

5.4.15 Formulate communication programs to align stakeholders across different levels of the business

6.0 SUSTAINABLE SUPPLY CHAINS

Supply chain management professionals with this competency collaborate with relevant stakeholders (e.g., shareholders, employees, suppliers, customers, government and policymakers, and society) to proactively craft policies to support evolving Environment Social Governance (ESG) priorities (e.g., decarbonization, circular economy, social responsibility), set clear targets and metrics indicative of progress covering ESG concerns, effectively implement processes to overcome evolving ESG concerns, and hold organizations accountable for meeting evolving ESG metrics. They can identify the costs and benefits of reducing harmful and wasteful practices and any associated synergies and trade-offs with other supply chain KPIs such as cost, quality, and delivery.

6.1 Formation of Sustainability Strategies

Definition: A competent supply chain management professional can perform an analysis of the strengths, weakness, threats, and opportunities of their function's and/or their team's contribution to the current organizational sustainability strategy. They can identify gaps in policy and processes in conforming to current and emerging regulations and marketplace expectations. They can work with critical stakeholders such as other functions, supply chain partners and third-party expertise to create new policies and processes to achieve ESG outcomes. They provide guidance to organizational leaders on engagements with public policy as it relates to the management of supply chains.

6.1.1 Identify critical stakeholders of an organization

6.1.2 Describe the process by which the organization engages with critical stakeholders

6.1.3 Report on an organization's social and environmental outcomes to critical stakeholders

6.1.4 Define the legal and regulatory requirements that inform an organization's sustainability strategy

6.1.5 Define the expectations of key stakeholders as to the organization's responsibility for social and environmental outcomes

6.1.6 Formulate actionable social and environmental outcome measures for the supply chain function

6.1.7 Determine who collects, monitors and reports sustainability initiatives and KPIs

6.1.8 Design the means for the organization to achieve supply chain visibility into the sustainability practices and outcomes of suppliers

6.1.9 Design and implement a process for proposing and approving supply chain related projects targeting sustainability outcomes

6.1.10 Explain and demonstrate the financial risks and rewards of investment in sustainable practices to senior management

6.1.11 Identify the potential for supply disruption due to social or environmental risks.

6.1.12 Define sustainability targets the organization is committed to meeting

6.1.13 Define the sustainability targets that the supply chain function can achieve

6.1.14 Track and explain sustainability targets the organization has achieved and/or the level of progress towards their achievement

6.1.15 Track the levels of outcome achieved pursing sustainability goals by competitors

6.1.16 Define critical trade-offs among environmental, social, and traditional supply chain management KPIs experienced by the organization

6.1.17 Identify opportunities for the organization to be involved in public dialogues in the establishment of industry and government policies on sustainability

6.2 Environmental Impact

Definition: A competent supply chain management professional can define and explain the impact of current and proposed supply chain policies and processes on the consumption of finite or fragile natural resources and the emission of pollutants whether on land, air, or water resources. They can analyse and report on the cost and benefits of prevention and mitigation of these emissions on profits, planet, and people.

6.2.1 Identify where current and planned supply chain policies and processes harm the environment

6.2.2 Identify what current and planned supply chain policies and processes avoid, mitigate, or recover from harm done to the environment

6.2.3 Calculate the total carbon footprint of organizational processes

6.2.4 Account for the contribution of supplier policies and processes to the organization's total environmental footprint (e.g., Scope 2 and 3 GHG emissions)

6.2.5 Determine and explain the effectiveness of an organization's Environmental Management System (EMS) for planning, developing, implementing, maintaining, and evaluating corporate environmental policies, programs, and initiatives

6.2.6 Identify who is and should be involved in eliminating the harmful impacts on the environment inherent in the design of the organizations supply chain

6.2.7 Identify and advocate for standards and certifications that will best help the organization achieve targeted improvement such as decarbonisation

6.2.8 Identify opportunities to continuously reduce the production of waste from operations and their harmful impact on land, air, and water resources

6.3 Circular Economy

Definition: A competent supply chain management professional can find and justify opportunities to reduce, recycle and reuse the material an organization purchases and produces. Re-use includes providing the reverse logistics for repairing and upgrading product or safe disposal. They can craft policies and processes to support the design of products and supply chains that reduce the overall consumption of energy and natural resources and pollutants emitted serving downstream stakeholders.

6.3.1 Define how reverse logistics is incorporated into the organization's operations and logistics

6.3.2 Identify and implement feasible options for purchasing recycled and reused commodities incorporated into sourcing decisions

6.3.3 Identify and inform the organization about current legislation and regulations governing the recycle, reuse and disposal of products require changes to an organization's products and their handling throughout the supply chain

6.3.4 Determine waste streams from an organization's production to be re-used or re- purposed to generate energy and/or new products

6.3.5 Propose changes to supply chain functions (i.e., sourcing, demand management, and transportation and logistics), processes, and systems to manage the flow of material for recycle or reuse internally or by other organizations

6.3.6 Identify opportunities for supply chain teams to collaborate with product design teams to integrate circularity into existing products and services

6.4 Social Responsibility

Definition: A competent supply chain management professional can assess the impact of current and proposed supply chain policies and processes on the economic, physical, and psychological health and safety of (a) employees and customers in the making and consumption of goods and services; (b) employees in supplier and customer organizations; and (c) stakeholders in the communities in which organizations are embedded. A competent supply chain management professional can ensure that principles of Equity, diversity and Inclusion guide the management of all salient stakeholder relationships.

6.4.1 Identify and eliminate non-conformance workplace standards such as forced labour, breaches to health and safety, unsafe work conditions, and discriminatory human resources policies in an organization's supply chain operations

6.4.2 Identify and eliminate non-conformance workplace standards such as forced labour, breaches to health and safety, unsafe work conditions, and discriminatory human resources policies in supplier operations

6.4.3 Identify and inform the organization as to the impact of supply chain operations on the health and safety and quality of life of the communities in which it operates

6.4.4 Identify and inform the organization as to the impact of suppliers on the health and safety and quality of life of the communities in which they operate

6.4.5 Participate in the formulation of achievable targets to achieve organizational social

7.0 SYSTEMS TECHNOLOGY

Supply chain management professionals with this competency assume a leadership role in the process of selecting, implementing, and leveraging new systems technology or improving existing ones to enable more effective inbound and outbound supply chain processes and operations. These systems technologies span information technologies to support supply chain decision-making to the hardware involved in task automation. SCM professionals continually benchmark the available 'best-in-class' system technologies; upgrade their understanding of the strengths and weaknesses of available system technologies; assess the functionality of different technologies; integrate these system technologies in the existing technology architecture; and formulate an implementation plan to deploy such system technologies.

7.1 Systems Technology Literacy

Definition: A competent supply chain management professional can identify systems technologies relevant to managing supply chain activities effectively and efficiently. They can obtain up-to-date knowledge about these relevant systems technologies and utilize that knowledge to support selection and deployment of such systems technologies.

7.1.1 Analyse and identify appropriate digital technology Analyse and identify appropriate digital technology (systems, networks, tools, and applications) to process information

7.1.2 Demonstrate the importance of systems technology in achieving inbound and outbound supply chain improvement

7.1.3 Identify different types of systems technologies that might be applied to achieve enablement of inbound and outbound supply chain management

7.1.4 Recommend systems technologies that account for the interconnected relationship between technology functionality and process functionality

7.1.5 Establish digital technology (systems, networks, tools, and applications) to process information

7.1.6 Link different types of system technologies to the different areas of inbound and outbound supply chain management where it can be used for enablement

7.2 Systems Technology Facilitation

Definition: A competent supply chain management professional can develop and implement plans to facilitate successful deployment and ongoing application of systems technologies for effective supply chain management. They can manage the process of organizational change required by adopting and implementing new systems technologies. This process of organizational change includes effectively navigating issues of inter-functional collaboration, creating a data-driven organization culture, managing human resources issues triggered by technical change, and identifying and leading improvement opportunities enabled by changes to systems technologies.

7.2.1 Lead teams to implement changes to major systems technologies

7.2.2 Identify and explain risks to successful systems technology implementation

7.2.3 Provide direction on cyber security work issues associated with adoption and implementation of digital systems technologies

7.2.4 Lead and manage virtual teams to complete organizational tasks

7.2.5 Oversee and manage the process of implementing systems technology projects in selected areas of the sub-strategy such as customer demand management

7.2.6 Interface and work with different stakeholders impacted by organizational changes associated with implementation of systems technology.

7.2.7 Implement continuous improvement methods that are supported by technology to enact systems changes

7.2.8 Interface and work with all systems users to ensure successful implementation and keep them engaged

7.2.9 Conduct post-implementation audits to track performance improvement achieved

7.2.10 Create and promote a digital environment and data-driven culture to foster the effective use of information systems to support decisions

7.2.11 Champion a data governance organization to promote and establish the right level of emphasis and support for systems technology

7.2.12 Implement systems technology enablement projects for macro-processes such as inbound and outbound supply chain

7.2.13 Manage multi-functional technology enablement projects that span different supply chain functions

7.2.14 Interface and work with stakeholders across different levels and functions to align objectives within a business case for systems technology implementation

7.2.15 Manage the process of developing functional requirements across business functions

7.2.16 Manage the process of specifications of systems technology and supplier selection to acquire, implement, and ensure continued support of systems technology

7.2.17 Prepare the business case for systems technology as part of the capital budgeting process for the organization

FUNCTIONAL COMPETENCIES

Functional Competencies focus on consistent performance and performance improvement of supply chain management activities of an organization. They prescribe competences to effectively and efficiently execute operational, sourcing, and logistical tasks that comprise the design and management of cross-functional supply chain systems.

Functional Competencies include 4 competency categories that supply chain management professionals across the Canadian supply chain community may elect to demonstrate. The Functional competencies are:

Operations Planning and Control

Procurement Strategy and Execution

Transportation and Distribution

Warehousing and Facilities Management

1.0 OPERATIONS PLANNING AND CONTROL

Operations planning and control is concerned with ensuring that the day-to-day production process proceeds smoothly. Quality is an important part of this process as quality should be one of the key performance objectives against which any operation is measured. supply chain management professionals ensure the process is quality-based through the integration of quality processes, systems and techniques that are consistent with the organization's business objectives.

1.1 Demand Planning

Definition: Demand planning involves the process of identifying, aggregating and prioritizing all sources of demand for the integrated supply chain of a product or service at the appropriate level, horizon and interval. The sales forecast comprises the following concepts: sales forecasting level, time horizon and time interval. The sales forecasting level is the focal point in the corporate hierarchy where the forecast is needed at the most generic level, i.e. corporate forecast, divisional forecast, product-line forecast, stock keeping unit and stock keeping unit by location. Cross-functional integration as required.

1.1.1 Explain the basic economic/market factors that drive demand in the specific industry/market

1.1.2 Explain the impact of business drivers and business planning (e.g. profitability, environmental) on demand planning

1.1.3 Explain the importance of demand planning for the performance of the supply chain and the business

1.1.4 Explain the process involved in setting up demand planning which includes the selection of the best forecasting techniques

1.1.5 Explain the process involved in incorporating supply chain events into the demand plan

1.1.6 Explain the process involved in collaborative forecasting with selected customers

1.1.7 Explain the process involved in aligning the demand plan with the business plan and business objectives

1.1.8 Explain the process involved in generating a consensus forecast through internal market development collaboration

1.1.9 Explain the process involved in identification of external demand constraints and risks across all sources of demand and how to resolve these constraints and mitigate the risks

1.1.10 Identify the basic economic/market factors that drive demand for a specific market or business segment

1.1.11 Perform the setting up of demand planning, which includes the selection of the best forecasting techniques for a specific market or business segment

1.1.12 Capture, analyze and interpret real-time data from all internal and external systems (including those owned by third-party logistics providers like freight forwarders and customs brokers) in preparation for demand planning

1.1.13 Generate a baseline sales forecast at the required level of detail for a specific market or business segment

1.1.14 Perform incorporation of supply chain events into the demand plan for a specific market or business segment

1.1.15 Facilitate the process of collaborative forecasting with selected customers for a specific market or business segment

1.1.16 Facilitate the alignment of the demand plan with the business plan and business objectives

1.1.17 Generate a consensus forecast through internal collaboration with sales and marketing for a specific market or business segment

1.1.18 Perform cross-functional integration and liaison as required for achieving optimal demand planning

1.1.19 Use predictive analytics to improve demand forecasting

1.2 Process Optimization

Definition: Ensure continuous improvement of business performance across the supply chain. This would include assessment of current performance across and between all areas of the supply chain (supply chain planning, outbound strategy, procurement strategy, demand fulfillment, facilities and transport management). Assessment will be followed by identification of improvement strategies, process development, real-time data planning, implementation plans and the actual implementation.

1.2.1 Explain the importance of business process optimization

1.2.2 Understand the distinctions between different process optimization strategies (Value Stream Mapping, SCOR, Six Sigma, Lean, Just-in-Time, etc.) as value-added activity and elimination of waste in the system

1.2.3 Identify potential ways to improve business performance

1.2.4 Provide examples of some of the basic analysis techniques to identify opportunities for improvement

1.2.5 Provide examples of some of the barriers toward achieving business process optimization

1.2.6 Implement business process optimization within a specific supply chain process group or sub-process

1.2.7 Benchmark opportunities for improvement of a sub-process such as customer demand management or facilities management

1.2.8 Perform analysis of activities, sub-processes and resources to quantify the improvement opportunities

1.2.9 Compare alternative plans to achieve process improvement and select the best plan of action

1.2.10 Formulate implementation plan for the execution of the plan

1.2.11 Identify the potential barriers to success and develop contingency plans

1.2.12 Manage business process optimization across supply chain management processes within the same business

1.2.13 Manage process optimization through trade-offs and resolving conflicting functional objectives in the different areas of the supply chain

1.2.14 Implement and, where possible, digitize or automate process optimization through integration of all elements such as strategy, infrastructure, processes and people management

1.2.15 Identify cause-and-effect drivers of performance using performance multi-level scorecards

1.2.16 Test optimization alternatives using decision support tools such as simulations

1.2.17 Formulate change management initiatives to ensure successful implementation of process optimization

1.3 Supply Planning

Definition: Supply planning is the process of identifying, prioritizing and aggregating, as a whole with constituent parts, all sources of supply that are required and add value in the supply chain of a product or service at the appropriate level, horizon and interval.

1.3.1 Provide examples of the basic economic/market factors that drive supply in a specific industry/market

1.3.2 Explain the impact of business drivers and business planning (e.g. profitability, environmental) on supply planning

1.3.3 Explain the importance of supply planning for the performance of the supply chain and the business

1.3.4 Explain the process of supply planning from distribution requirements planning to source planning

1.3.5 Explain the process of identification of supply constraints and risks across all sources of supply and how to resolve these constraints and mitigate the risks

1.3.6 Identify the basic economic/market factors that drive supply for a specific market or business segment

1.3.7 Perform data maintenance and clean-up in preparation of the supply planning process for selected supply resources only

1.3.8 Understand evolving customer expectations and related delivery techniques (direct to store delivery, home delivery, pickup from store, returns/reverse logistics, etc.)

1.3.9 Perform the process of generating a distribution requirement plan for selected distribution points

1.3.10 Generate inventory planning based on the distribution requirements plan that includes review of inventory levels and re-order levels for selected distribution points only

1.3.11 Generating a materials replenishment plan based on distribution requirements adjusted for inventory levels for only selected manufacturing sources

1.3.12 Generate a master production schedule based on the materials replenishment plan adjusted for manufacturing constraints for only selected manufacturing sources

1.3.13 Complete source planning based on the master production schedule for only selected sources of supply

1.3.14 Identify supply constraints and risks for selected sources of supply and resolve these constraints and mitigate the risks

1.3.15 Perform cross-functional integration and liaison as required for achieving good supply planning

1.4 Business Process Outsourcing

Definition: Outsourcing involves the process of using external business processes (manufacturing, services and/or facility provider) to fulfill capacity management requirements. This will involve in-depth understanding of the capacity requirement(s), development of Request for Quote documentation, identification of potential service providers, requesting proposals, evaluation of proposals and selection of the provider best suited for the requirement. Contract implementation will require the contracting process to be completed followed by contract management based on a service level agreement to ensure the required performance from both parties.

1.4.1 Provide examples of the requirements of the specific type of service to be outsourced

1.4.2 Explain the development of a capacity management requirements plan and scope of work

1.4.3 Demonstrate cause-and-effect by explaining the development of Request for Quote documentation which clearly states requirements and assumptions

1.4.4 Explain the identification and qualification of potential service providers

1.4.5 Explain the process of requesting proposals from various service providers

1.4.6 Explain the evaluation of alternative proposals provided by different service providers

1.4.7 Explain the development and negotiation of agreements, e.g., commercial, operational, service level agreements

1.4.8 Provide examples of the issues and process of commissioning new service providers

1.4.9 Describe the process of contract management and dealing with changes required in the contract during its duration

1.4.10 Develop a capacity requirement plan and scope of work for a specific contract

1.4.11 Develop Request for Quote documentation which clearly states requirements and assumptions focusing on a business segment

1.4.12 Identify and qualify potential service providers for a specific contract

1.4.13 Request proposals from various service providers for a specific contract

1.4.14 Evaluate alternative proposals provided by different service providers for a specific contract

1.4.15 Develop and negotiate agreements, e.g., commercial, operational, service level agreements, for a specific contract

1.4.16 Commission new service provider(s) for a specific contract

1.4.17 Contract management and dealing with changes required in the contract during its duration for a specific contract

1.5 Order Management

Definition: Development, implementation and improvement of the process from allocation of inventory or production capacity and delivery up to invoicing the customer. This includes translating the sales and operations plan into sales allocation planning, managing the inflow of orders, prioritization of the orders for distribution, liaison with transport/distribution and ensuring dispatch in line with priorities and allocations. The process will also include Available to Promise and Capable to Promise business rules and facilitate removal of credit or distribution blocks and re-routing/diversions.

1.5.1 Explain how the operational allocation planning process relates to customer fulfillment strategies

1.5.2 Provide examples of the operational allocation planning process

1.5.3 Explain how the operational allocation planning process integrates with the sales and operations plan

1.5.4 Explain the calculation of Available to Promise and Capable to Promise dates

1.5.5 Explain the process of managing order inflow against operational allocation and correcting allocation problems

1.5.6 Provide examples of execution problems such as distribution or credit blocks and how to remove them

1.5.7 Explain re-routing and diversions and how they are used to maximize customer service

1.5.8 Perform operational allocation planning for a selected market or business segment

1.5.9 Align the segment operational allocation plan with the sales and operations plan

1.5.10 Calculate the Available to Promise and Capable to Promise dates for a specific market or business segment

1.5.11 Manage order inflow against operational allocation and correcting allocation problems for a specific market or business segment

1.5.12 Identify execution problems such as distribution or credit blocks and removing those for a specific market or business segment

1.5.13 Perform re-routing and diversions for a specific market or business segment to maximize customer service

2.0 PROCUREMENT STRATEGY AND EXECUTION

Procurement strategy and execution are increasingly seen as central to an organization's ability to achieve its business goals, meet financial targets and achieve successful innovation. supply chain management professionals identify and assess value levers and determine what market opportunities can be captured and how those opportunities can benefit the organization. New approaches to procurement and contract management are emerging, in which advanced skills and expertise are combined with state-of-the-art technologies and new business models, to deliver high levels of value to the organization through the purchase of materials, services and expertise.

Federal, provincial, and municipal government departments have exceptional issues in relation to the public trust and value. Procurement, contracting and the related functions occur within the context of legislation, policies, and procedures special to government. SCM professionals working within this specific realm must define the unique aspects of accountability and transparency, examine the roles and responsibilities of governments, and explore the constant evolution of e-Government..

2.1 Cost Management

Definition: Cost management is a process of analyzing the total cost, direct and indirect cost of a procured item over its life cycle. It includes working capital cross functions, value-added services and, most importantly, cost avoidance.

2.1.1 Explain the concept of cost management

2.1.2 Provide examples of the process of analyzing the total cost of ownership

2.1.3 Provide examples of the internal cost drivers of cost management

2.1.4 Provide examples of the external drivers of cost management

2.1.5 Explain the potential strategies that can be applied to effectively manage costs

2.1.6 Explain the process of implementing initiatives for the reduction of direct and indirect costs

2.1.7 Explain how strategic supplier partnerships can reduce direct and indirect costs

2.1.8 Provide examples of how the redesign of certain internal practices can reduce costs

2.1.9 Apply the process of analyzing the total cost of ownership for selected procured items or parts of the procurement portfolio

2.1.10 Identify internal and external cost drivers

2.1.11 Identify the potential strategies that can be applied to reduce direct and indirect costs

2.1.12 Implement initiatives for the reduction of costs

2.1.13 Demonstrate how costs can be reduced through strategic sourcing

2.1.14 Recommend strategic supplier partnerships to reduce the direct and indirect costs for selected procured items or parts of the procurement portfolio

2.1.15 Redesign certain internal practices to reduce the direct and indirect costs for selected procured items or parts of the procurement portfolio

2.2 Performance Management

Definition: The identification and implementation of key performance indicators (KPI' that drive behaviour and measure the health of the procurement process. Metrics should cover key areas such as savings, costs, efficiency, effectiveness, people/organization and stakeholders.

2.2.1 Explain the importance of supplier performance in achieving successful demand fulfillment

"A state of the art supply chain is connected, predictive and intelligent. It needs to be customer centric, provide total visibility, increase productivity and embrace sustainability. The technology to do that is available. It's time to transform your supply chain!."

Hans Thalbauer
Senior Vice President
SAP

2.2.2 Explain the key principles and objectives of supplier relationship management

2.2.3 Provide examples of which strategies for supplier relationship management can be applied

2.2.4 Explain the purpose and process of supplier integration

2.2.5 Explain which strategies for supplier integration can be applied

2.2.6 Explain the principles and process of supplier performance measurement

2.2.7 Provide examples of the alternative corrective action in case of supplier non-performance

2.2.8 Explain the purpose and process of supplier development

2.2.9 Understand how to apply technology tools (enterprise resource planning systems, Microsoft Excel, etc.) to increase category and business intelligence

2.2.10 Establish a supplier management process to:

- Maintain supplier scorecards
- Measure the cost of poor performance
- Develop cost recovery practices
- Integrate operations with those of suppliers to better share risk and data

2.2.11 Communicate potential risks and their mitigation strategies to stakeholders, ensuring they:

- are aware of their accountability for individual risks
- contribute to continuous improvement of the risk management process
- understand that risk awareness and management are a key part of the organization's culture
- report any signs of risk to senior management

2.2.12 Apply strategies for supplier integration for procurement portfolio

2.2.13 Apply technology tools to increase category and business intelligence

2.2.14 Employ spend analytics software, a sourcing platform and contract system to collect real-time data from all internal and external systems

2.2.15 Triage requests to the appropriate resource group depending on level of spend, risk and complexity

2.2.16 Review risk management practices regularly with a focus on updating contract templates as the breadth of risks increases

2.2.17 Perform supplier financial evaluations to inform and influence stakeholders with regards to risk

2.2.18 Measure supplier performance for procurement portfolio

2.2.19 Implement alternative corrective actions in case of supplier non-performance

2.2.20 Update supplier code of conduct with cross-functional collaboration, adding new sections related to supplier diversity, data ownership, etc.

2.2.21 Collaborate across business units and functions, thereby creating flexible supply networks

2.2.22 Demonstrate ability to remain current with new technology, new business models and implications for their business as well as the selection and sourcing process (category management, contract management, cost reduction)

2.3 Supplier Relationships and Development

Definition: Focus is on segmentation of suppliers (strategic, transactional, emerging) to understand the type of relationship the organization should have with each supplier. Suppliers are stratified by spend and impact of the relationship. Relationships are strategically planned and managed based on each segment, placing greater emphasis on critical performance-driven relationships and less on transactional ones.

2.3.1 Explain the basic concept of supplier segmentation

2.3.2 Provide examples of how product offerings for different supplier segments might differ

2.3.3 Explain the process of supplier engagement to ensure successful achievement of objectives

2.3.4 Apply supplier segmentation to a portfolio of customers for a business or business unit

2.3.5 Participate in the development of different product offerings for different supplier segments

2.3.6 Participate in the process of measuring customer satisfaction or customer service for a portfolio of suppliers

2.3.7 Participate in the process of supplier engagement to ensure that customer and revenue targets are realized

2.3.8 Manage the process of measuring customer satisfaction or customer service for a portfolio of suppliers

2.4 Payment Transaction Processes

Definition: Development, implementation and improvement of the process from the planning of sourcing orders based on a demand plan, through delivery up to supplier payment. This includes translating the operations plan into a sourcing plan with planned orders on suppliers, managing the placement of orders, prioritization of the orders for delivery, liaison with transport/distribution ensuring delivery in line with priorities and customer service commitments. The process will also include the formulation of business rules and constant coordination with stakeholders to resolve changes in planning if required.

2.4.1 Explain how the supply order planning process relates to stakeholder fulfillment strategy

2.4.2 Explain the supply order planning process

2.4.3 Provide examples of how the supply order planning process integrates with the sales and operations plan

2.4.4 Explain how planned delivery dates of orders need to be aligned with customer service requirements and risk management

2.4.5 Provide examples of what type of execution problems can occur such as distribution or credit blocks and how to remove those

2.4.6 Explain the process of stakeholder management during order execution to provide visibility and manage expectations

2.4.7 Align, perform and integrate the supply order planning process using cross-functional dialogue for a selected part of supply orders in a business unit

2.4.8 Align planned delivery dates of orders with customer service requirements and risk management for a selected part of supply orders in a business unit

2.4.9 Identify potential execution problems that can occur such as distribution or credit blocks and how to remove those for a selected part of supply orders in a business unit

2.4.10 Perform stakeholder management during order execution to provide visibility and manage expectations for supply orders in a business unit

2.5 Strategic Sourcing

Definition: The process of commodity management focuses on the creation of an approach that manages procurement commodity groups from a consolidated perspective through the application of a unique management approach for each commodity group. The objective of the approach is to achieve the optimal total cost of ownership for each commodity or commodity group at acceptable levels of supply risk.

2.5.1 Develop category profile by conducting a supply market analysis using Porter's five forces model

2.5.2 Develop sourcing strategy and integrate the results of all the tools and analysis into a coherent sourcing strategy for a segment of supply demand or spend

2.5.3 Generate supplier profile

2.5.4 Apply the principles of building a competitive global sourcing and supply chain network and the interaction between the elements of the network

2.5.5 Select implementation plan

2.5.6 Negotiate and select suppliers

2.5.7 Implement agreements

2.5.8 Implement continuous improvement activities

2.6 Category Management

Definition: Category management is an approach to the organization of purchasing/procurement within a business. Applying category management to procurement activities reduces the cost of buying goods and services, reduces risk in the supply chain, increases overall value from the supply base and gains access to more innovation from suppliers. If applied effectively throughout a business, the results can be significantly greater than traditional transactional-based purchasing negotiations.

2.6.1 Develop a clear sourcing strategy that reflects the needs of the business and is aligned to procurement policy objectives and regulatory framework imperatives in all sourcing projects

2.6.2 Build positive relationships with key internal and external stakeholders

2.6.3 Ensure that all pre-procurement engagement has been completed and that the organization is ready to go to market

2.6.4 Consider the key financial and commercial issues in the development of the contracting model and implement these as appropriate in contract terms and conditions

2.6.5 Facilitate supplier dialogue and negotiation during preparation of the contract

2.6.6 Ensure that the contract management mobilization phase and supporting activities are carried out successfully

2.6.7 Develop category strategies, product road maps and sourcing plans; maintain these taking into account outputs from market analysis

2.6.8 Develop baseline costs using market knowledge and research; manage sourcing and benefits realization plans

2.6.9 Actively monitor key performance indicators against baselines and use information to improve client and supplier performance

2.6.10 Develop opportunities to incentivize contract delivery and continuous performance improvement (where appropriate)

2.6.11 Build and maintain strategic partnerships with key suppliers to share risks, benefits and services costs as well as identify possible scope for supplier innovation during the contract

2.7 International Trade

Definition: The facilitation of international trade initiatives requires an understanding of the importance of assessing potential gains against potential risks to establish market feasibility to determine if the concept will improve the organization's bottom line and fit with strategic direction.

2.7.1 Review industry-specific information on product or service exports to potential target markets

2.7.2 Collect specialized knowledge through consultations with experts (trade commissioners, distributors)

2.7.3 Examine available data on current and long-term trends to determine:

- consistency of market growth on a year-to-year basis
- conditions that may impact market growth (political changes, economic instability)
- import growth or decline during periods of economic recession and recovery
- potential emerging market

2.7.4 Assess competitiveness of product or service in market, for example:

- identify businesses offering similar products and services
- research purchasing practices and consumer preferences
- identify distribution channels for product or service
- review market-specific reports to identify purchasing trends

2.7.5 Analyze factors affecting marketing and use of the product or service in target market (end-user purchasing patterns, distribution channels, cultural idiosyncrasies, business practices)

2.7.6 Compare the costs associated with entry to each potential market (market research, competitive analysis)

2.7.7 Compare the administration costs associated with entry to each potential market (sales and marketing, accounting, contract administration, bid and proposal preparation)

2.7.8 Evaluate regulatory and legal requirements in each potential target market (taxes, employment and labour laws)

2.7.9 Review trade agreements of potential target markets

2.7.10 Determine requirements to import/export product:

- identify certifying bodies
- determine required inspection certificates, e.g. safety, security, labelling, licensing, language, translation, packaging, nutritional facts
- determine if adaptation of product is required

2.7.11 Determine if product needs to comply with non-preferential or preferential rules of origin:

- determine requirements of verification/proof of origin
- review requirements for documentary evidence
- meet requirements for certificate, if required
- review specific import guidelines
- review export regulations of target markets, e.g. protection laws, norms and certification

2.7.12 Determine e-commerce costs and financial capabilities of target market

2.7.13 Identify costs of international financing, foreign exchange cost and profit margin

2.7.14 Determine costs of bonds, e.g. bid bond, performance bond

2.7.15 Conduct due diligence before entering into negotiations:

- check client/buyer reputation
- identify how long organization has been in business and scope of business activities
- identify owner(s) and source of funding
- ensure client/buyer can pay
- ensure supplier can deliver goods/services

2.7.16 Negotiate contract details with foreign suppliers and customers, including:

- warranty, if applicable
- penalties for non-delivery and non-compliance
- payment terms that help with organization's cash flow
- ensure pre-shipment inspection
- hedge for foreign exchange fluctuations
- responsibility for costs, e.g. shipping, customs duties (i.e. Incoterms), inspections, liability
- contract dissolution condition and procedure

2.7.17 Acquire Accounts Receivable Insurance, when applicable, to protect against:

- customer's bankruptcy or default
- customer's refusal to accept goods as contracted
- wrongful cancellation
- payment delays caused by blocked funds or transfer difficulties
- hostilities in a customer's country
- cancellation or non-renewal of export or import permits and political risk

2.7.18 Acquire Contract Frustration Insurance, when applicable, to protect against:

- customer's bankruptcy or default
- contract cancellation
- payment delays caused by blocked funds or transfer difficulties
- hostilities in a customer's country
- cancellation of export or import permits
- moratorium on debt
- performance guarantees

2.7.19 Identify documents required for product or services to cross border(s)

2.8 Public Sector Procurement Essentials

Definition: Government procurement regulations normally cover all public works, services and supply contracts entered into by a public authority. However, there may be exceptions. These most notably cover military acquisitions. Additionally, certain politically or economically sensitive sectors, such as public health, energy supply or public transport, may also be treated differently. Separation of function and transparency of process take on a stricter adherence in the public sector than in the private sector. It is important for SCM professionals to understand the unique public sector procurement perspective and why leading collaborative efforts of private business cannot be easily adopted in the public sector world.

2.8.1 Describe the unique characteristics of public sector procurement

2.8.2 Describe the unique aspects of ethics in public sector procurement

2.8.3 Identify the stakeholders of public sector supply chains

2.8.4 Understand the unique public (vs. private) sector perspective on SCM

2.8.5 Understand the unique aspects of procurement of products and services in the public sector

2.8.6 Discover the advantages and disadvantages of cooperative procurement

2.8.7 Identify lessons for the public sector from Ethics Commission reports and scandals

2.8.8 Assume the role of "whistle-blower," and consider alternative courses of action

2.8.9 Identify unique challenges and opportunities associated with procurement and supply chain management by the federal government

2.8.10 Identify unique challenges and opportunities associated with procurement and supply chain management by provincial and municipal governments

2.8.11 Understand the unique differences in structure and governance across different public sector bodies and their respective accountabilities

2.8.12 Describe how sustainability, innovation and value-based procurement should be a part of the value proposition

3.0 TRANSPORTATION AND DISTRIBUTION

From the supply of raw materials to the delivery of the finished product, the optimization of an organization's transportation and distribution network allows companies to remain competitive. supply chain management professionals plan, manage and move products by road, pipeline, air, rail, and water. They realize that optimal configuration of their distribution network enables them to remain highly reactive, which guides them in their tactical decision-making process, and assists with identifying problems or responding to customer issues. All these elements must be integrated, balanced, and managed skillfully. The reduction of costs in one sector of activity can increase costs in another.

3.1 Fleet Management

Definition: Fleet management involves the end-to-end process of managing an internal or external transport fleet. This process starts with the development of fleet requirements based on the transport or distribution requirements. This will be followed by the selection of the best-suited transport fleet, which would include the selection of vehicles, trailers and other equipment that might be required in the transport process. Financing the fleet needs to be arranged in terms of the best approach from options such as full maintenance leasing and others. Once the fleet is operational, asset management is required in order to manage fleet maintenance including the scheduling of services and repairs, accounting of all costs and arranging for the eventual replacement of the fleet.

3.1.1 Describe the process of developing transport fleet requirements

3.1.2 Provide examples of requirements for compliance, including legal requirements, health and safety, business rules and labour legislation

3.1.3 Demonstrate cause-and-effect understanding by explaining the process of costing the different fleet options using a total cost of ownership approach

3.1.4 Explain the process of selecting the best transport fleet for the specific requirement

3.1.5 Explain the process, requirements, options and selection of the best financing option for the selected fleet

3.1.6 Explain the different maintenance requirements and strategies

3.1.7 Describe the process of asset management to manage the operational availability and cost of an operational fleet, while maximizing return on existing assets

3.1.8 Develop the transport fleet requirements for a specific transport requirement within a business unit

3.1.9 Implement processes and business rules to ensure compliance, including legal requirements, health and safety, business rules and labour legislation

"Forward looking competencies for the Canadian supply chain sector are critical to ensuring that we are able to attract, retain, and develop the right talent for the right roles in supply chain. As the supply chain advances digitally in Canada and the world, as supply chain leaders we need prepare for a more technical automated future."

Corrie Banks
Director Logistics
Cando Rail

3.1.10 Develop costing for the different fleet options using a total cost of ownership approach

3.1.11 Select the best transport fleet

3.1.12 Leverage data to discover optimum routes that will reduce fuel costs and identify the most effective journey

3.1.13 Select the best support equipment required for transport requirements within a business unit

3.1.14 Select the best financing option for selected fleet within a business unit

3.1.15 Implement different maintenance strategies and programs for a subset within a business unit

3.1.16 Implement asset management approach to manage the operational availability and cost of an operational fleet

3.1.17 Implement and, where possible, digitize or automate maintenance strategies and programs for a business unit

3.1.18 Implement and, where possible, digitize or automate asset management approach to manage the operational availability and cost of an operational fleet

3.1.19 Interact with Customs officials and provide security trade program credentials if available, e.g. Partners in Protection, Free and Secure Trade Program, Authorized Economic Operator

3.1.20 Provide required shipment documentation (bill of lading, import/export declaration, any required certifications or permits)

3.3 Transport Operational Management

Definition: Transport operational management focuses on the process of moving cargo from the distribution facility, including requirements planning, load planning, route planning and vehicle scheduling, to the assurance of quantity and quality. Tracking vehicles and cargo during the process of transport will be required to ensure on-time delivery, contingency planning if required and the safety and security of cargo. The process will be ended with the processing of a Proof of Delivery document and managing the payment of transport service providers. Liaison with all stakeholders during the process of transport needs in order to provide visibility of all progress against scheduled delivery times. Key performance indicators such as vehicle utilization, transport costs, damage rates and customer service levels need to be optimized while ensuring compliance with health and safety, legislation and regulatory requirements.

3.3.1 Demonstrate cause-and-effect understanding by explaining the transport requirements or distribution requirements planning

3.3.2 Explain the translation of distribution requirements and constraints into load planning

3.3.3 Demonstrate cause-and-effect understanding by explaining how vehicle selection (e.g. trucks, vessels, tankers, pipelines) takes place once load planning is completed

3.3.4 Describe the route planning and vehicle scheduling process

3.3.5 Show understanding of tracking vehicles and cargo during the process of delivery

3.3.6 Explain management of inventory while in transit (dwell, cycle and transit times)

3.3.7 Demonstrate cause-and-effect understanding by explaining the types of contingency planning required to ensure that cargo is delivered on time

3.3.8 Explain providing visibility to relevant stakeholders for cargo during delivery

3.3.9 Demonstrate cause-and-effect understanding by explaining diversions during the process of delivery

3.3.10 Provide examples of the administration requirements of Proof of Delivery documents and their management

3.3.11 Describe the payment process of service providers once Proof of Delivery documents are submitted

3.3.12 Perform transport requirements or distribution requirements planning for a specific segment of business

3.3.13 Translate distribution requirements into load planning for a specific segment of business

3.3.14 Perform vehicle selection (e.g. trucks, vessels, tankers, pipelines) once load planning is completed for a specific segment of business

3.3.15 Perform route planning and vehicle scheduling for a specific segment of business

3.3.16 Perform tracking of vehicles and cargo during the process of delivery

3.3.17 Perform contingency planning required to ensure that cargo is delivered on time

3.3.18 Provide visibility to all stakeholders for cargo during delivery for a specific segment of business

3.3.19 Manage diversions during the process of delivery

3.3.20 Implement process of collecting and processing Proof of Delivery documents for a specific segment of business

3.3.21 Implement process for payment of service providers once Proof of Delivery documents are submitted

3.3.22 Keep up-to-date on status of labour contracts and negotiations at transportation hubs and carriers relevant to your supply chain

3.4 Import and Export Requirements

Definition: As the global supply chain becomes more complex with every passing year, organizations must adapt to this change and incorporate import and export requirements into their supply chain strategies and practices. Supply chain professionals have to understand that cultural difference plays a deciding role in the success or failure of a venture in a new global region.

3.4.1 Determine potential shipping options (loading and sharing container capacity, conventional, containerized)

3.4.2 Calculate shipping preparation and export cost:

- identify and confirm Harmonized System Classification
- determine cost of freight
- determine cost of insurance, if applicable
- determine export documentation costs (customs and brokerage)
- determine applicable Incoterms costs

3.4.3 Verify country of origin and applicable tariff treatment

3.4.4 Calculate duties and local taxes owing (value-added tax, cargo insurance)

3.4.5 Identify documents required for product or services to cross border(s)

3.4.6 Ensure documents are in compliance and aligned with international standards, including correct measurements in required measurement system

3.4.7 Ensure supplier provides inspection and health certificates and Certificate of Origin, if required

3.4.8 Ensure supplier provides the correct documents to financial institution for trade transaction to take place in accordance with agreed-upon Incoterms

3.4.9 Provide appropriate information to licensed custom broker, freight forwarder, if applicable

3.4.10 Keep up-to-date with changes to international trade processes and reporting requirements

3.4.11 Explain the Incoterms program and how the selection of an Incoterm will affect the import/export process and requirements

3.4.12 Understand the importance of correct packaging for each mode of transport and the specific commodities being shipped along with the international standards for packaging materials

3.4.13 Keep up-to-date with relevant international trade agreements and negotiations taking place, including the introduction and/or removal of both tariff and non-tariff barriers to trade

4.0 WAREHOUSING AND FACILITIES MANAGEMENT

Warehousing solutions improve inventory efficiency and accelerate responses to changing customer demand. supply chain management professionals analyze every point in the supply chain to identify, design and implement flexible warehousing solutions tailored to the organization's business needs.

4.1 Facility Locations

Definition: Facility location decisions play a crucial role in the logistics activities involved in supply chain management. The optimization of location and allocation decisions starts by assessing the quality of the current locations of service facilities as they relate to customer demands for those facilities.

4.1.1 Assess variables to identify fulfillment centre/facility locations that will provide a competitive edge to the organization:

- regulations in target market
- infrastructure in target market
- lead-times to customer base
- costs to establish, maintain fulfillment centre(s)
- geographic location of manufacturing centre or point of entry for offshore manufacturing
- sustainability in geographic location
- transportation costs
- potential for site to also serve as reverse supply chain facility

4.1.2 Assess potential of other locations, e.g. Foreign Trade Zones, partnerships with distributors

4.1.3 Determine cost-effective means of reducing lead-times and outbound transportation costs

4.1.4 Analyze costs of establishing and maintaining fulfillment centre and inbound costs of shipping inventory to facility from the manufacturing or point of entry

4.1.5 Select centralized or decentralized strategy

4.2 Facility Design and Layout

Definition: Facility design and layout focuses firstly on the design and layout of the facility/building, which includes the size and configuration of the building/facility. The second element includes the design of the operational flow of material or product and selection of material handling equipment such as racking, forklifts and any other special equipment required. The objective is to maximize the productivity of the facility while achieving health and safety objectives through policies, procedures and legislation.

4.2.1 Explain the principles applicable to the design and layout of facilities

4.2.2 Demonstrate cause-and-effect understanding by explaining the different flow patterns that can be applied in the design and layout of facilities

4.2.3 Explain the design of applicable storage equipment

4.2.4 Explain the layout and design of the site (outside of the facility) required for the movement of vehicles or other transport modes

4.2.5 Explain the integration of the facility with the inflow and outflow of product, such as routes, roads, pipelines, marine or rail

4.2.6 Provide examples of the health, safety, security and other legal requirements that should be taken into account, including product compatibility

4.2.7 Provide examples of the potential risks that should be taken into account with facility design

4.2.8 Apply the principles applicable to the design and layout of facilities to the design of a small facility or part of a facility

4.2.9 Design the required flow pattern for the design and layout of a small facility or part of a facility

4.2.10 Design applicable storage equipment that might be required of a small facility or part of a facility

4.2.11 Complete the layout and design of the site (outside of the facility) required for movement of vehicles or other transport modes of a small facility or part of a facility

4.2.12 Integrate the facility with the inflow and outflow of product, such as routes, roads, pipelines, marine or rail

4.2.13 Apply the health, safety, security and other legal requirements that should be taken into account, including product compatibility

4.2.14 Identify the potential risks that should be taken into account with facility design and formulate mitigation strategies

4.3 Facilities Operations Management

Definition: Facilities operational management focuses on achieving daily throughput targets while maintaining productivity, health, safety, security and other legal management objectives. Operational activities include receiving, storing, blending, picking, pre-loading, loading, returns, documentation and administration.

4.3.1 Explain the operational requirements of the specific type of facility managed

4.3.2 Demonstrate cause-and-effect understanding by explaining the basic operational activities taking place within facilities such as receiving, put-away, picking, pre-loading and loading

4.3.3 Provide examples of the documentation and administration requirements of the operational processes in facilities

4.3.4 Provide examples of the health, safety, security and other legal requirements involved in facility operational management, including product compatibility

4.3.5 Provide examples of the potential risks involved in daily facility operational management and required mitigation strategies

4.3.6 Provide examples of the basic rules of housekeeping and its importance for good operational management

4.3.7 Design and implement the documentation and administration process for a small to medium single-product facility (only hazardous or non-hazardous)

4.3.8 Apply health, safety, security and other legal requirements for a small to medium single-product facility, including product compatibility

4.3.9 Identify the potential risks involved in daily facility operational management and implement the required mitigation strategies for a small to medium single-product facility

4.3.10 Apply the basic rules of housekeeping and its importance for good operational management for a small to medium single-product facility

4.4 Inventory Management and Optimization

Definition: The process of inventory management is focused on optimizing inventory or stock in distribution/fulfillment centres, warehouses or other facilities. The activities involved are receiving of products into a facility, putting away these products and issuing these products for customer orders or transfer to other facilities. The key objective is to achieve inventory accuracy, namely that the physical inventory in the facilities is accurate in terms of what should be there based on the transactional processes.

4.4.1 Explain what the objective of inventory control is

4.4.2 Explain how to calculate stock accuracy

4.4.3 Explain the concept of reserved stock and how to manage it

4.4.4 Demonstrate cause-and-effect understanding by explaining what activities through a fulfillment centre or facility need to be managed to ensure stock control

4.4.5 Provide examples of the potential causes of inaccurate stock on the floor

4.4.6 Provide examples of what technologies and techniques can be applied to monitor stock accuracy

4.4.7 Describe the process of inventory management of assets, including normal and perpetual inventory takes

4.4.8 Design and implement an inventory management process to reduce dwell times of idle stock and lower working capital required

4.4.9 Consider advantages and disadvantages of using a vendor-managed inventory system to allow for more efficient coordination of production to maintain inventory levels

4.4.10 Implement appropriate control system, such as first-in, first-out; last-in, first-out

4.4.11 Identify and establish tracking system for problem inventory (obsolete product; excessive just-in-case stock; stock in wrong locations; supplies too good to discard but no longer used; materials approaching end of shelf life)

4.4.12 Implement short-term solutions to decrease levels of problem stock

4.4.13 Implement long-term solutions to prevent accumulation of problem stock

4.4.14 Track inventory in and out of system using electronic data interchanges to scan bar codes or radio frequency identification

4.4.15 Determine stock accuracy within the distribution/fulfillment centre, warehouse or other facility

4.4.16 Identify discrepancies between the software system record and physical stock

4.4.17 Identify the root causes that can result in inaccurate stock counts across a number of facilities

4.4.18 Establish problem inventory as a permanent performance measure

4.4.19 Create inventory analysis reports that:

- forecast deliveries to fulfillment centres
- analyze sales and inventory levels for sales forecasting
- provide accurate information for tax calculations
- project the impact that inventory decisions will have on capital costs

4.4.20 Implement strategies to ensure stock accuracy across different distribution/fulfillment centres, warehouses or other facilities for different types of products

"I will be sharing this document with my people leaders and Senior Leaders in the organization as it outlines what we need as far as talent and skill for these most sought after positions across Supply Chain functions in the broader public sector."

Ann Dolan
Executive Director, Strategic Procurement / Directrice exécutive, Approvisionnement stratégique
Health Services / Services de santé
Service New Brunswick / Service Nouveau-Brunswick

4.5 Materials Management

Definition: Materials management focuses on ensuring that products that are handled through the supply chain process are handled with safe and productive mechanisms to limit the associated risks and avoid product damage. This involves the selection of appropriate material packaging, handling equipment and techniques for different products through the different stages of product handling.

4.5.1 Explain the objectives of material handling

4.5.2 Explain the cost elements involved in material handling

4.5.3 Demonstrate cause-and-effect understanding by explaining the potential risks involved in material handling

4.5.4 Explain the importance of product packaging in the handling process

4.5.5 Explain where products are typically handled in the warehousing process

4.5.6 Explain which factors would be considered in the process of selecting material handling equipment

4.5.7 Quantify the cost of material handling for all different fulfillment centres and facilities

4.5.8 Identify the opportunities for generating savings in material handling costs

4.5.9 Identify the potential risk areas where material is handled through the supply chain

4.5.10 Implement initiatives for generating cost savings in material handling

4.5.11 Develop sustainability processes that strive to incorporate renewable raw materials and eliminate waste

4.5.12 Implement initiatives for risk mitigation in areas where products are handled

4.5.13 Develop and implement a framework for the evaluation and selection of material handling equipment for different types of products that are handled

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