***Introduction to SCOR***

***SCOR: Supply Chain Operations Reference Model***

Organized in 1996, the Supply-Chain Council (SCC) was formed to develop, maintain, and improve a supply chain reference model, SCOR. In 2014, SCC merged with APICS to form the APICS Supply Chain Council (APICS SCC).

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| **The Supply Chain Operations Reference model (SCOR)** is the world’s leading supply chain framework, linking business processes, performance metrics, practices and people skills into a unified structure. |

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|  | **Approach of SCOR** | | | | |  |
|  |  |  | **Integrated Disciplines** |  | **Cross-Functional**  **Framework** |  |
|  | **Value**  **Propositions** | 🡪 | Business Process Re-Engineering | 🡺 | **SCOR** |  |
|  | 🡪 | Benchmarking |  |
|  | 🡪 | Best Practices Analysis |  |
|  | 🡪 | Process Reference Model |  |
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|  | **Supply Chain Operations Reference Model** |  |

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| **SCOR Structure** | | |  |
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|  | **Performance**. Standard metrics to describe process performance and define strategic goals. | |  |
|  |  | Attributes and Metrics for Reliability, Responsiveness, Agility, Costs, Assets |  |
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|  | **Processes**. Standard descriptions of management processes and process relationships. | |  |
|  |  | Level 1. Process Types (Scope)  Level 2. Process Categories (Configuration)  Level 3. Process Elements (Steps)  (Level4.) Activities (Implementation) |  |
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|  | **Practices**. Management practices that produce significant better process performance. | |  |
|  |  | Emerging, Best, Standard, Declining |  |
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|  | **People**. Standard definitions for skills required to perform supply chain processes. | |  |
|  |  | Novice, Beginner, Competent, Proficient, Expert |  |
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| Source: SCOR: Supply Chain Operations Reference Model, Revision 11.0, released December 2012. |

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|  | **SCOR Processes** |  |

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| **Level 1 Processes in SCOR**  Plan, Source, Make, Deliver, Return, Enable |

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| **SCOR Framework of Integrated Processes** | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | 🡨 Supply Chain Operations Reference Model 🡪 | | | | | | | | | | | | | | | | | | | | | | |  |
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|  | **Major Processes** | |  |
|  | **Plan** | The Plan processes describe the activities associated with developing plans to operate the supply chain. |  |
|  | **Source** | The Source processes describe the ordering (or scheduling of deliveries) and receipt of goods and services. |  |
|  | **Make** | The Make processes describe the activities associated with the conversion of materials or creation of the content for services. |  |
|  | **Deliver** | The Deliver processes describe the activities associated with the creation, maintenance and fulfillment of customer orders. |  |
|  | **Return** | The Return processes describe the activities associated with the reverse flow of goods. |  |
|  | **Enable** | The Enable processes describe the activities associated with the management of the supply chain. |  |
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| **Levels of Process Detail** | | | | | |
|  |  |  | Description | Examples |  | |
|  |  | Level 1. | Process Types (Scope) | Plan,Source,Make,Deliver,Return,Enable |  | |
|  |  | Level 2. | Process Categories (Configuration) | Make-to-Stock, Make-to-Order,  Engineer-to-Order |  | |
|  |  | Level 3. | Process Elements (Steps) | Schedule Deliveries, Receive Product, Verify Product, Authorize Payment |  | |
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|  |  | Level 4. | Activities (Implementation) | Out of the general scope of SCOR.  Specific to type of supply chain. |  | |
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|  | **SCOR Performance** |  |

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| **Performance**. Standard metrics to describe process performance and define strategic goals.  Attributes and Metrics for Reliability, Responsiveness, Agility, Costs, Assets |

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|  | **Performance Attribute.** A performance attribute is a grouping or categorization of metrics used to express a specific strategy. |  |
|  | **Metric.** A metric is a standard for measurement of the performance of a supply chain or process |  |
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|  | |  |  |  |  | | --- | --- | --- | --- | |  | **Performance Attributes** | | **Level-1 Metrics** | | Customer | Reliability | The Reliability attribute addresses the ability to perform tasks as required. | Perfect Order Fulfillment | | Responsiveness | The Responsiveness attribute describes the speed at which tasks are performed. | Order Fulfillment Cycle Time | | Agility | The Agility attribute describes the ability to respond to external influences; the ability to and speed of change. | Upside Flexibility,  Upside Adaptability  Downside Adaptability,  Overall Value-at-Risk | | Internal | Costs | The Cost attribute describes the cost of operating the process. | Total Cost to Serve | | Assets | The Asset Management Efficiency (‘Assets’) attribute describes the ability to efficiently utilize assets. Asset management strategies in supply chain include inventory reduction and in-source vs. outsource. | Cash-to-Cash Cycle Time  Return on Fixed Assets  Return on Working Capital | |  |
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|  | **SCOR Practices** |  |

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| **Practices**. Management practices that produce significant better process performance.  Emerging, Best, Standard, Declining |

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|  | **Emerging** | | Emerging practices introduce new technology, knowledge or radically different ways of organizing  processes. |  |
|  | **Best** | | Best practices are 'current', 'structured' and 'repeatable' practices that have had a proven and  positive impact on supply chain performance  • Current: Not emerging, not outmoded.  • Structured: Feature a clearly stated goal, scope, process, and procedure.  • Proven: Demonstrated in a working environment, and linked to key metrics.  • Repeatable: Proven in multiple organizations and industries. |  |
|  | **Standard** | | Standard practices are how a wide range of companies have historically done business by default or happenstance. |  |
|  | **Declining** | | Declining practices represent ways of doing business, which can be widespread, that have proven to result in poor supply chain performance as indicated by key metrics. |  |
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|  | **SCOR People** |  |

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|  | **Key Elements** | | |  |
|  | **Skill** | | Skill is the capacity to deliver pre-determined results with minimal input of time and energy. |  |
|  | **Experience** | | Experience is the knowledge or ability acquired by observation or active participation. |  |
|  | **Aptitude** | | Aptitude is a natural, acquired, learned or developed ability to perform a certain kind of work at a certain level. |  |
|  | **Training** | | Training develops a skill or type of behavior through instruction |  |
|  | **Competency** | | Competency Level describes the level or state of qualification to perform a certain role or tasks. SCOR recognizes 5 commonly accepted competency levels. |  |
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|  | **Competency Levels** | | |  |
|  | **Novice** | | Untrained beginner, no experience, requires and follows detailed documentation to be able to perform the work. |  |
|  | **Beginner** | | Performs the work, with limited situational perception. |  |
|  | **Competent** | | Understands the work and can determine priorities to reach goals. |  |
|  | **Proficient** | | Oversees all aspects of the work and can prioritize based on situational aspects. |  |
|  | **Expert** | | Intuitive understanding. Experts can apply experience patterns to new situations. |  |
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|  | **SCOR Example** |  |

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| Book reference for a HOW-TO approach to SCOR in a fictitious company:  *Supply Chain Excellence. A Handbook for Dramatic Improvement Using the SCOR Model*, Third Edition, 2012, P. Bolstorff, R. Rosembaum, AMACOM, ISBN:9780814417713. |

**Essential Success Factors.**

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| **Change Management** | **Problem-solving Techniques** | **Project Management** | **Business Process Engineering Techniques** |

**Phases of Implementation Approach.**

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|  | **Build Organizational Support.** |  |
|  | **Define Project Scope.** |  |
|  | **Analyze Performance.** |  |
|  | **Develop Project Portfolio** |  |
|  | **Implement Projects.** |  |
|  | **---Extend to the Greater Value Chain---** |  |
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**SCOR Project Roadmap**

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|  |  | **Segments** | *Analyze*  *Basis of Competition* | 🡪 | Operations  Strategy |  |  |  |  |  |
|  |  | *Configure*  *Supply Chain* |  | 🡪 | Material  Flow |  |  |  |  |
|  |  | *Align Performance Levels, Practices, and Systems* |  |  | 🡪 | Information &  Work Flow |  |  |  |
|  |  | *Implement*  *Supply-Chain Changes* |  |  |  | 🡪 | Implementation |  |  |
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| **Operations Strategy**   * Supply Chain Scope * Performance Metrics * Supply Chain SCORcard * Competitive Performance Requirements * SCORcard Gap Analysis | **Information and Work Flow**   * AS IS Work/Information Map * Transactional Productivity Analysis * TO BE Work/Information Map * Prioritized List of Changes |
| **Material Flow**   * AS IS Material Flow * Disconnect & Gross Opportunity Analysis * Supply Chain Strategy and Best Practice Analysis * TO BE Material Flow | **Implementation**   * Master Schedule of Projects * ROI Analysis * Technology Selection * Detail Requirements, Solution Design, Configuration, Test & Go Live |

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| Find a presentation of SCOR application by Peter Bolstorff on the YouTube below: |
| APICS Webinar: SCOR 101-APICS for Business  Peter Bolstorff  [ <https://youtu.be/58SJY2P42PE> ] |