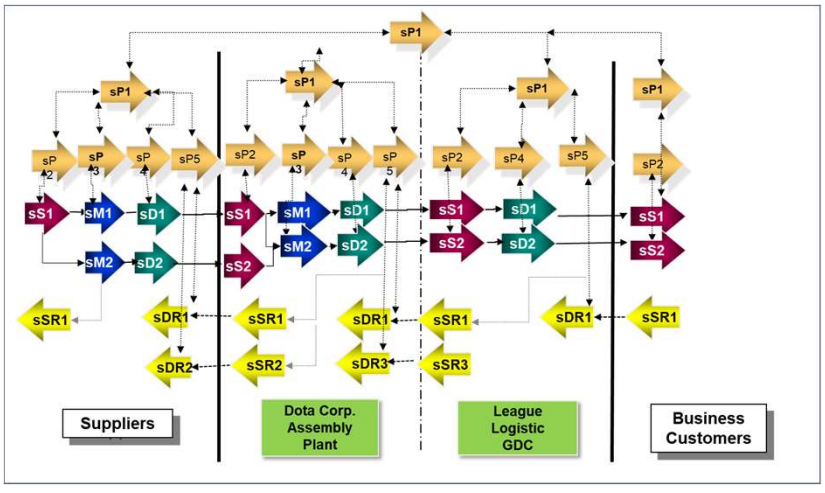
Lesson 05
SCOR (II)

E331 – Supply Chain Management

Diploma in Supply Chain Management

Scenario (Continue from Lesson 4)

Aston, a Supply Chain Analyst with Dota Corp., developed the following SCOR Level-2 thread diagram.



Scenario (Continue)

As a continuous improvement of the supply chain operations and integration with League Logistics, Aston reckoned that he needs to enhance the SCOR model further.

The operations team of League Logistics is responsible for monitoring and reporting on the operation performance of the Global Distribution Centre (GDC). The operations team has been providing reports on order fill rate, pick errors, weekly/monthly shipments, order cycle time and average shipment lead-times, returns, etc. to Aston.

Aston is considering using metrics that are well defined and accepted in the industry for its supply chain performance measurement. In addition, Aston also plans to implement some best practices recommended by the SCOR model.

Can you help Aston with his plan?

Activity 1: Think-Pair-Share

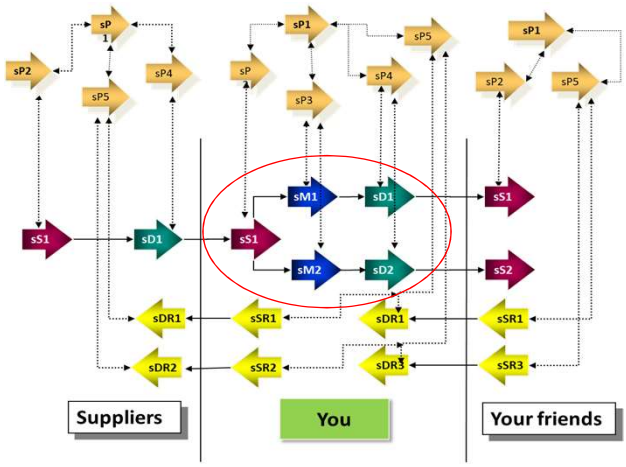
Based on the scenario, answer the following questions first **by yourself (Think)**, then **exchange your thoughts with your teammates (Pair)** and finally **share your ideas with your class.**

1. What is Aston's plan? • Use industrial metrics to measure supply chain performance • Implement best practices	2. What do I know? (Think)
3. What my team mates know but I don't? (Pair)	4. What do other teams in class know? (Share)

4

Activity 2: Team Discussion

- If you recall the BBQ party supply chain from the last lesson, what will be the Level-3 SCOR processes on sS1, sM1, sM2, sD1 and sD2 for “You”?



Activity 2: Suggested Answers

Based on SCOR quick reference for Level-3 processes.

sS1 Source Stocked Product	sM1 Make-to-Stock	sM2 Make-to-Order	sD1 Deliver Stocked Product	sD2 Deliver Make-to-Order Product
sS1.1: Schedule Product Deliveries	**sM1.1:** Schedule Production Activities	**sM2.1:** Schedule Production Activities	**sD1.8:** Receive Product from Source or Make	Rate Shipments
sS1.2: Receive Product	**sM1.2:** Issue Material	**sM2.2:** Issue Sourced/In-Process Product	**sD1.9:** Pick Product	**sD2.8:** Receive Product from Source or Make
sS1.3: Verify Product	**sM1.3:** Produce and Test	**sM2.3:** Produce and Test	**sD1.10:** Pack Product	**sD2.9:** Pick Product
sS1.4: Transfer Product	**sM1.4:** Package	**sM2.4:** Package	**sD1.11:** Load Vehicle & Generate Shipping Docs	**sD2.10:** Pack Product
sS1.5: Authorize Supplier Payment	**sM1.5:** Stage Product	sM2.5: Stage Finished Product	**sD1.12:** Ship Product	**sD2.11:** Load Product & Generate Shipping Docs
	sM1.6: Release Product to Deliver	**sM2.6:** Release Finished Product to Deliver	**sD1.13:**	**sD2.12:** Ship Product
	sM1.7: Waste Disposal	**sM2.7:** Waste Disposal		

Activity 3: Team Discussion

- How do you measure the success of the BBQ party?
- List down the indicators / metrics of success that you think can be used for the BBQ party supply chain.
- How do you feel about the metrics that you have listed? Are they good enough?

Activity 3: Suggested Answers

Some examples of the success indicators/metrics:

- On-time delivery of burgers
- Quantity & quality of the burgers made
- Speed of each burger made (cycle time)
- Cost to source raw ingredients
- Cost to organize the BBQ party

General feedback on metrics listed:

- ❖Metrics are not well defined and may not be widely accepted or used
- ❖Metrics may not be clear for calculation
- ❖Metrics may not be standardized for comparison or benchmarking, etc.

SCOR Performance

Focuses on the measurement and assessment of the outcomes of supply chain process execution.

- **Performance Attribute**: Strategic characteristics of supply chain performance used to prioritize and align the supply chain's performance with the business strategy.
- **Metric**: Discrete performance measures, themselves comprised of levels of connected hierarchy
- **Process/Practice Maturity**: Objective, specific descriptions used a reference tool to evaluate how well supply chain processes and practices incorporate and execute accepted best-practice process models and leading practices

SCOR Performance Attributes

- A performance attribute is a grouping or categorization of metrics used to express a specific strategy.
- An attribute itself cannot be measured; it is used to set strategic direction.
- Metrics are used to measure the ability to achieve these strategic directions.
- SCOR recognizes FIVE (5) performance attributes.

SCOR Performance Attributes

Performance Attribute	Definition
Reliability	The ability to perform tasks as expected. Reliability focuses on the predictability of the outcome of a process. Typical metrics for the reliability attribute include: On-time, the right quantity, the right quality.
Responsiveness	The speed at which tasks are performed. The speed at which a supply chain provides products to the customer. Examples include cycle-time metrics.
Agility	The ability to respond to external influences, the ability to respond to marketplace changes to gain or maintain competitive advantage. SCOR Agility metrics include Adaptability and Overall Value at Risk
Costs	The cost of operating the supply chain processes. This includes labor costs, material costs, and management and transportation costs. A typical cost metric is Cost of Goods Sold.
Asset Management Efficiency (Assets)	The ability to efficiently utilize assets. Asset management strategies in a supply chain include inventory reduction and in-sourcing vs. outsourcing. Metrics include: Inventory days of supply and capacity utilization.

SCOR Performance Attributes

- Reliability, Responsiveness, and Agility are considered **customer/external-focused**.
- Cost and Asset Management Efficiency are considered **internal-focused**.
- All SCOR metrics are grouped within one of the performance attributes.
- Each Performance Attribute has one or more Level-1/strategic metrics. These level-1 metrics are the calculations by which an organization can measure how successful it is in achieving its desired positioning within the competitive market space.

SCOR Metrics

- A metric is a standard for measurement of the performance of a supply chain or process.
- The SCOR metrics are organized in a hierarchical structure. SCOR recognizes three levels of pre-defined metrics: Level-1, Level-2 and Level-3.
- The relationships between these levels is diagnostic. Hence, SCOR metrics are diagnostic metrics.
- The analysis of performance of metrics from level-1 through 3 is referred to as metrics decomposition, performance diagnosis or metrics root cause analysis. Metrics decomposition is a first step in identifying the processes that need further investigation. (SCOR Processes are linked to level-1, level-2 and level-3 metrics).

SCOR Metrics

• **Level-1 metrics** are diagnostics for the overall health of the supply chain. These metrics are also known as strategic metrics and key performance indicators (KPI). Benchmarking level-1 metrics helps establishing realistic targets to support the strategic directions.
• **Level-2 metrics** serve as diagnostics for the level-1 metrics. The diagnostic relationship helps to identify the root cause or causes of a performance gap for a level-1 metric. This means that by looking at the performances of the Level-2 metrics; performance gaps or improvements for Level-1 metrics can be explained.
• **Level-3 metrics** serve as diagnostics for level-2 metrics.

Activity 4: Team Discussion

- Why is it useful to use SCOR metrics?

- How can SCOR metrics be used to improve League Logistics' GDC operations?

Activity 4: Suggested Answers

- Each metric is linked to each process with definition and formula. You can measure and use the metric to drive supply chain performance across companies due to the standardization. Constraints affecting the metrics are shown and can be used to identify areas for improvement.
- With right SCOR processes and metrics, opportunities for improvement can be discovered through process and benchmarking analysis.

Activity 5: Team Discussion

- Similar to the SCOR processes, SCOR metrics also have 3 levels. Do you think the relationships among the 3 levels of SCOR metrics are the same as the SCOR processes?

Activity 5: Suggested Answers

- SCOR metrics are hierarchical -- just as the process elements are hierarchical.
- Level 1 Metrics are created from lower level (2 and 3) articulations. Level 1 Metrics are primary, high level measures that may cross multiple SCOR processes.
- Level 1 Metrics do not necessarily relate to a Level 1 Processes (PLAN, SOURCE, MAKE, DELIVER, RETURN and ENABLE).
- Lower level calculations (Level 2 metrics) are generally associated with a narrower subset of processes.

SCOR Metrics Codification

- Metrics codification starts with the performance attributes: Reliability - **RL**, Responsiveness - **RS**, Agility - **AG**, Cost - **CO**, and Asset Management - **AM**.
- Each metric starts with this two-letter code, followed by a number to indicate the level, followed by a unique identifier.
- For example: Perfect Order Fulfillment is **RL.1.1** - a Level-1 metric within the Reliability attribute. Perfect Condition is **RL.2.4**, a Reliability metric at Level-2.

SCOR Level-1 Metrics

SCOR recognizes 10 strategic metrics (Level-1 metrics):

Attribute	Level-1 Metric	
Reliability	RL.1.1	Perfect Order Fulfillment
Responsiveness	RS.1.1	Order Fulfillment Cycle Time
Agility	AG.1.1	Upside Supply Chain Adaptability
	AG.1.2	Downside Supply Chain Adaptability
	AG.1.3	Overall Value-at-Risk (VaR)
Cost	CO.1.1	Total SC Management Cost
	CO.1.2	Cost of Goods Sold (COGS)
Asset Management Efficiency	AM.1.1	Cash to Cash Cycle Time
	AM.1.2	Return on Fixed Assets
	AM.1.3	Return on Working Capital

APICS recommends supply chain scorecards to contain at least one (1) metric for each performance attribute to ensure balanced decision making and governance.

The Use of Level 1 SCOR Metrics

- Level 1 metrics are overall supply chain diagnostics
  - Cost management, capital/assets management
  - Flexibility, adaptability
  - Quality/reliability/customer satisfaction
- Level 1 metrics set the scope of project or organization
  - Level 1 metrics help translate a business problem into something measurable
  - Level 1 metrics establish the business priorities for organizations
- Selection of Level 1 metrics:
  - How does the customer/industry measure the process?
  - Measure what makes sense!

Strategic Reliability Metric

Metric:	**RL.1.1 Perfect Order Fulfillment**
Definition:	The percentage of orders delivered on-time, in full. Components of perfect include all items and quantities on-time, using the customer's definition of on-time, complete documentation and in the right condition
Calculation:	[Total Perfect Orders] / [Total Number of Orders] * 100%
Diagnostic Metrics: (examples)	• RL.2.1 % Orders Delivered in Full • RL.2.4 Perfect Condition • RL.3.19 % Orders Received Defect Free • RL.3.24 % Orders Received Damage Free

Strategic Responsiveness Metric

Metric: **RS.1.1 Order Fulfillment Cycle Time**

Definition: The average actual cycle time consistently achieved to fulfill customer orders. The actual cycle time starts with the receipt of the order and ends with the customer acceptance of the delivery. The unit of measure is days.

Calculation: [Sum Actual Cycle Times For All Orders Delivered] / [Total Number Of Orders Delivered]

Diagnostic Metrics: (examples)

- RS.2.2 Make Cycle Time
- RS.2.3 Deliver Cycle Time
- RS.3.96 Pick Product Cycle Time

Strategic Agility Metrics

Metric: **AG.1.1 Upside Supply Chain Flexibility**

Definition: The number of days required to achieve an unplanned sustainable 20% increase in quantities delivered. Seasonality is not considered unplanned/unforeseen. The unit of measure is calendar days.

Calculation: The larger of the number of days required to achieve sustainable increase for Source, Make and Deliver

Diagnostic Metrics:

- AG.2.1 Upside Source Flexibility
- AG.2.2 Upside Make Flexibility
- AG.2.3 Upside Deliver Flexibility

Strategic Agility Metrics

Metric: **AG.1.2 Supply Chain Upside Adaptability/**
AG.1.3 Supply Chain Downside Adaptability

Definition: The sustainable reduction and increase or decrease in product quantities that can be achieved in 30 days (without backorders, cost penalties or inventory). Adaptability is expressed as a percentage of current run-rate.

Calculation: Upside: Percentage sustainable increase
Downside: Percentage sustainable reduction

Diagnostic Metrics:
- AG.2.1 Upside Source Adaptability
- AG.2.12 Downside Make Adaptability
- AG.3.47 Direct Labor Availability

Strategic Cost Metrics

Metric: **CO.1.1 Total Supply Chain Management Cost (TSCMC)**

Definition: All direct and indirect expenses associated with the operation of supply chain business processes across the supply chain. Traditionally Total Supply Chain Management Cost is measured as a percentage of revenue.

Calculation: [Cost to Plan] + [Cost to Source] + [Cost to Deliver] + [Cost to Return]

Diagnostic Metrics:
- CO.2.1 Cost to Plan
- CO.2.2 Cost to Source
- CO.2.3 Cost to Deliver
- CO.2.4 Cost to Return

Strategic Cost Metrics

Metric:	**CO.1.2 Cost of Goods Sold (COGS)**
Definition:	The cost associated with buying raw materials and producing finished goods. This cost includes direct costs (labor, materials) and overhead. Overhead is interpreted between companies.
Calculation:	Direct Material + Direct Labor + Overhead
Diagnostic Metrics:	• CO.3.140 Direct Labor Cost • CO.3.141 Direct Material Cost

Strategic Asset Metrics

Metric:	**AM.1.1 Cash-to-Cash Cycle Time**
Definition:	The time it takes for cash invested in materials to flow back into the company after finished goods have been delivered to customers. The unit of measure for Cash-to-Cash Cycle Time is calendar days
Calculation:	[Inventory Days of Supply] + [Days Sales Outstanding] – [Days Payable Outstanding]
Diagnostic Metrics:	• AM.2.1 Days Sales Outstanding (DSO) • AM.2.2 Inventory Days of Supply (IDOS) • AM.2.3 Days Payable Outstanding (DPO)

Strategic Asset Metrics

Metric:	**AM.1.2 Return on Supply Chain Fixed Assets**
Definition:	The return an organization receives on its invested capital in supply chain fixed assets. This includes the fixed assets used to Plan, Source, Make, Deliver and Return. Examples of fixed assets include land, buildings, machinery, trucks
Calculation:	([Supply Chain Revenue] – [Total Cost to Serve]) / [Supply Chain Fixed Assets]
Diagnostic Metrics:	• AM.3.11 Deliver Fixed Assets Value • AM.3.18 Make Fixed Assets Value • AM.3.20 Plan Fixed Asset Value • AM.3.27 Source Fixed Assets Value

Strategic Asset Metrics

Metric:	**AM.1.3 Return on Working Capital**
Definition:	Return on working capital assesses the magnitude of investment relative to a company's working capital position verses the revenue generated from a supply chain. Components include accounts receivable, accounts payable, inventory, revenue, cost of goods sold and total supply chain management costs.
Calculation:	([Supply Chain Revenue] – [COGS] – [Total Supply Chain Management Costs]) / [Working Capital]
Diagnostic Metrics:	• AM.2.6 Payables Outstanding • AM.2.7 Sales Outstanding • AM.2.8 Inventory

Activity 6: Do and Compare

- Identify the metrics recommended by SCOR 12.0 for below BBQ party processes:
- sS1, sM1, sM2, sD1 and sD2
  - *Every one in a team choose one process and identify the metrics recommended by SCOR 12.0*
  - *Compare your metrics found for your process with your teammates'*
  - *Why are the metrics used different?*

Activity 6: sS1

- SCOR 12.0 page 188

Metrics	
RS.1.1	Order Fulfillment Cycle Time
RS.2.1	Source Cycle Time
AG.3.9	Additional source volumes obtained in 30 days
AG.3.40	Current Purchase Order Cycle Times
AG.3.42	Current Source Volume
AG.3.46	Demand sourcing-supplier constraints
CO.2.2	Cost to Source
CO.3.6	Cost to Authorize Supplier Payment
CO.3.7	Cost to Receive Product
AM.1.2	Return on Supply Chain Fixed Assets
AM.1.3	Return on Working Capital
AM.2.3	Days Payable Outstanding
AM.3.16	Inventory Days of Supply - Raw Material

Activity 6: sM1

- SCOR 12.0 page 226

Metrics	
RL.3.58	Yield
RS.1.1	Order Fulfillment Cycle Time
RS.2.2	Make Cycle Time
RS.3.21	Current manufacturing order cycle time
AG.2.2	Upside Make Adaptability
AG.2.7	Downside Make Adaptability
AG.3.2	% of labor used in manufacturing, not used in direct activity
AG.3.38	Current Make Volume
CO.2.3	Cost to Make
CO.3.11	Direct Material Cost
CO.3.12	Indirect Cost Related to Production
CO.3.13	Direct Labor Cost
CO.3.20	Risk Mitigation Costs
CO.1.2	Cost of Goods Sold
AM.1.1	Cash-To-Cash Cycle Time
AM.1.2	Return on Supply Chain Fixed Assets
AM.1.3	Return on Working Capital
AM.3.22	Recyclable waste as % of total waste

Activity 6: sM2

- SCOR 12.0 page 237

Metrics	
RL.1.1	Perfect Order Fulfillment
RL.3.58	Yield
RS.2.2	Make Cycle Time
RS.3.21	Current manufacturing order cycle time
AG.2.2	Upside Make Adaptability
AG.2.7	Downside Make Adaptability
AG.3.2	% of labor used in manufacturing, not used in direct activity
AG.3.38	Current Make Volume
CO.2.3	Cost to Make
CO.3.11	Direct Material Cost
CO.3.12	Indirect Cost Related to Production
CO.3.13	Direct Labor Cost
CO.3.20	Risk Mitigation Costs
CO.1.2	Cost of Goods Sold
AM.1.1	Cash-To-Cash Cycle Time
AM.1.2	Return on Supply Chain Fixed Assets
AM.1.3	Return on Working Capital
AM.3.17	Inventory Days of Supply - WIP
AM.3.22	Recyclable waste as % of total waste

Activity 6: sD1

- SCOR 12.0 page 262

Metrics	
RL.1.1	Perfect Order Fulfillment
RS.1.1	Order Fulfillment Cycle Time
RS.2.3	Deliver Cycle Time
RS.3.20	Current logistics order cycle time
AG.2.3	Upside Deliver Adaptability
AG.2.8	Downside Deliver Adaptability
AG.3.1	% of labor used in logistics, not used in direct activity
AG.3.4	Additional Delivery volume
AG.3.32	Current Delivery Volume
CO.3.14	Order Management Cost
CO.3.15	Order Delivery and / or Install Costs
AM.1.1	Cash-To-Cash Cycle Time
AM.1.2	Return on Supply Chain Fixed Assets
AM.1.3	Return on Working Capital
AM.3.17	Inventory Days of Supply - WIP
AM.3.45	Inventory Days of Supply - Finished Goods

Activity 6: sD2

- SCOR 12.0 page 282

Metrics	
RL.1.1	Perfect Order Fulfillment
RS.1.1	Order Fulfillment Cycle Time
RS.2.3	Deliver Cycle Time
RS.3.20	Current logistics order cycle time
AG.2.3	Upside Deliver Adaptability
AG.2.8	Downside Deliver Adaptability
AG.3.1	% of labor used in logistics, not used in direct activity
AG.3.4	Additional Delivery volume
AG.3.32	Current Delivery Volume
CO.2.4	Cost to Deliver
CO.3.14	Order Management Costs
CO.3.15	Order Delivery and / or Install Costs
CO.3.21	Risk Mitigation Costs (Deliver)
AM.1.1	Cash-To-Cash Cycle Time
AM.1.2	Return on Supply Chain Fixed Assets
AM.1.3	Return on Working Capital
AM.3.17	Inventory Days of Supply - WIP
AM.3.45	Inventory Days of Supply - Finished Goods

Benchmarking

- Working knowledge of the process of capturing and comparing one's own business processes and performance metrics with industry peers and/or best practices from other industries.
- Typical measures include quality, time, and cost, with the goal of closing performance gaps and doing things better, faster, and cheaper.
- Can be classified into three categories – internal, competitive and strategic.

Benchmarking Analysis

Benchmarks

– **Parity**: Being equal in performance; No real advantage over others

– **Advantage:** Being in a favorable position; In a stronger position than parity, but not yet achieving Superior performance

– **Superior:** Being of high rank or quality; Leaders not outlier

Example:
- Actual: Your organization's performance
- Parity: The average performing companies (Median)
- Advantage: Above average but not superior
- Superior: The performance of the top-10 percentile

Usage Notes:

– Establish Goals. Know where you are relative to others (competitors or peers), and express where you're going.

– Monitor Performance. Track relative progress you and others (your competitors or peers) make.

Benchmarking Analysis by Using SCORcard

Supply Chain SCORcard

	Overview Metrics	SCOR Level 1 Metrics	Actual	Industry Benchmarks: Parity	Advantage	Superior	Value from Improvements
EXTERNAL	Supply Chain Reliability	Delivery Performance to Commit Date	50%	85%	90%	95%	
		Fill Rates	63%	94%	96%	98%	
		Perfect Order Fulfillment	0%	80%	85%	90%	$30M Revenue
	Responsiveness	Order Fulfillment Lead Times	35 days	7 days	5 days	3 days	$30M Revenue
	Flexibility	Supply Chain Response Time	97 days	82 days	55 days	13 days	Key enabler to cost and asset improvements
		Production Flexibility	45 days	30 days	25 days	20 days	
INTERNAL	Cost	Total SCM Management Cost	19%	13%	8%	3%	$30M Indirect Cost
		Warranty Cost	NA	NA	NA	NA	NA
		Value Added Employee Productivity	NA	$156K	$306K	$460K	NA
	Assets	Inventory Days of Supply	119 days	55 days	38 days	22 days	NA
		Cash-to-Cash Cycle Time	196 days	80 days	46 days	28 days	$7 M Capital Charge
		Net Asset Turns (Working Capital)	2.2 turns	8 turns	12 turns	19 turns	NA

Benchmark Data Sources

Source	Benchmark	Link
APICS	SCORmark	http://www.apics.org/apics-for-business/benchmarking
APQC	Open Standards	https://www.apqc.org/benchmarking
CAPS	Cross-Industry	https://www.capsresearch.org/benchmarking/
MPI	Manufacturing Distribution & Logistics	https://mpi-group.com/benchmarking-toolkit/
WERC	Warehousing & Fulfilment	https://werc.org/page/Benchmarking

- Other industries may offer industrial benchmarking data & tools
- Organization may start benchmarking from within (internal benchmarking)

Activity 7: Poll

For your BBQ party, which of the following supply chains would you include for benchmarking?

A. Fast food restaurant
B. Fancy restaurant
C. Catering service
D. School restaurant
E. Your friend's party two months ago
F. Wedding party

Activity 7: Poll (Answer)

For your BBQ party, which of the following supply chains would you include for benchmarking?

A. Fast food restaurant
B. Fancy restaurant
C. Catering service
D. School restaurant
E. Your friend's party two months ago
F. Wedding party

SCOR Best Practices

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.

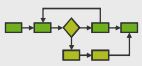
• **Repeatable**: Proven in multiple organizations and industries.

SCOR model links the best practices with the processes and metrics. It is understood that not all best practices will yield the same results for all industries or supply chains.

SCOR Best Practices

- For many best practices, the following are given in SCOR model which are very helpful for best practice implementation:
  - Best Practice Need and Suitability Indicators
  - Best Practice Definition/Description
  - Impact on Supply Chain Performance Attributes/Metrics
  - Key Best Practice Success Factors/Implementation Issues
- Many Best Practices involve technology
  - ERP = Enterprise Resource Planning
  - EDI = Electronic Data Interchange
  - Barcode / RFID
  - Advanced Planning and Optimization
- Don’t overlook non-technology practices
  - Training Programs (Example: cross-training)
  - Collaborative Planning (Can be done without complex systems)
  - Joint Service Agreements
  - Supplier Development Programs
  - Certification Programs

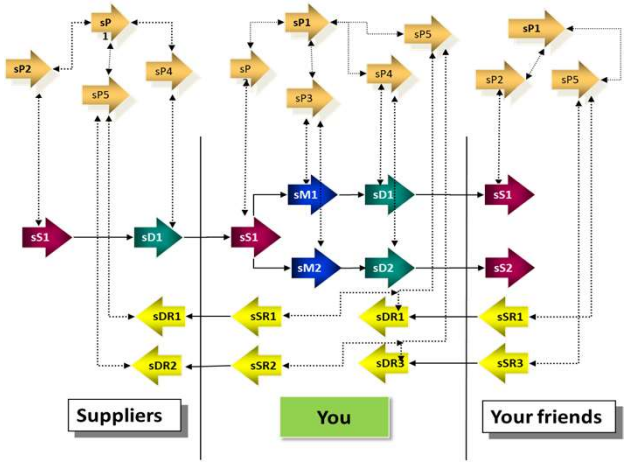
Levels of Practices

Level 1	Level 2	Level 3	Level 4	Level 5
Scope	Configuration	Activity	Workflow	Transactions
S Source	**S1 Source Stocked Product**	**S1.2 Receive Product**		
Differentiates Business	Differentiates Complexity	Names Tasks	Sequences Steps	Links Transactions
Defines Scope	Differentiates Capabilities	Links, Metrics, Tasks and Practices	Job Details	Details of Automation
ERP System	**Collaborative Planning**	**EDI Engineering Catalogues**	**Initiate & Receive EDI Catalogue**	**Catalog Transactions**

Standard SCOR practices | Implementation of Practice

Activity 8: Do and Compare

- For the BBQ party supply chain, what are the "Best Practices" recommended by SCOR version 12.0 to improve the processes of sS1, sM1, sM2, sD1 and sD2?



Activity 8: sS1

- SCOR 12.0 page 189 & 540

Practices	
BP.006	Consignment Inventory
BP.035	Business Rule Review
BP.056	Supplier Raw Material Quality Improvement
BP.131	Alternative Supplier Benchmarking
BP.132	Issue Invitation to Tender (Quote)
BP.134	Supplier Evaluation using Robust Evaluation Tool.
BP.144	Purchase Order Management
BP.145	Vendor Collaboration
BP.147	Receiving Goods Ir
BP.148	3-Way Delivery Ver
BP.161	Enterprise Level Sj
BP.163	Optimized Supplier

BP.131 Alternative Supplier Benchmarking

The practice of requesting prices from a number of suppliers for a particular product or service. The prices are compared to the existing supplier in order to determine whether the current price paid is representative of the market/industry.

An informal research approach by the purchaser. If an existing supplier contract is for many different materials/ or service requirements, usually only a sample of those materials/service requirements are used to test the market price. When agreeing a medium term, formal contract with a supplier it is useful to include a clause that allows the purchaser the opportunity to benchmark against the market, which in turn allows the opportunity to discuss pricing concerns with the existing supplier.

Note: Caution must be taken when undertaking a benchmark exercise as spot rate analysis based on a selection of products does not always return comparable results.

Activity 8: sM1 & sM2

- SCOR 12.0 page 227, 238 & 603

Practices	
BP.003	Single-Minute Exchange of Die (SMED)
BP.035	Business Rule Review
BP.040	MTO Order Fulfillment Strategy
BP.098	Mobile Access of Information
BP.153	Bar coding/RFID

BP.040 MTO Order Fulfillment Strategy

Evaluate potential to change order fulfillment strategy from Make-To-Stock (MTS) to Make-To-Order (MTO) SKU by SKU to offset need to carry inventory due to infrequent demand or low demand. Key is the manufacturing flexibility/agility to make this happen in short lead time for the customer; Can be combined with additional opportunities such as, SKU Rationalization or postponement

Activity 8: sD1 & sD2

- SCOR 12.0 page 263 & 533

Practices	
BP.035	Business Rule Review
BP.055	Freight Carrier Delivery Performance Evaluation
BP.098	Mobile Access of Information
BP.122	Vendor Managed Inventory (VMI)
BP.153	Bar coding/RFID
BP.176	Omni-channel

BP.122 Vendor Managed Inventory (VMI)

Vendor-managed inventory (VMI) is a family of business models in which the buyer of a product provides certain information to a supplier of that product and the supplier takes full responsibility for maintaining an agreed inventory of the material usually at the buyer's consumption location (usually a store). A third-party logistics provider can also be involved to make sure that the buyer has the required level of inventory by adjusting the demand and supply gaps.

VMI makes it less likely that a business will unintentionally become out of stock of a good and reduces inventory in the supply chain.

One of the keys to making VMI work is shared risk. In some cases, if the inventory does not sell the vendor (supplier) will repurchase the product from the buyer. In other cases, the product may be in the possession of the buyer but is not owned by the buyer until the sale takes place meaning that the buyer simply houses (and assists with the sale of) the product in exchange for a predetermined commission or profit (sometimes referred to as consignment stock).

VMI helps foster a closer understanding between the supplier and manufacturer by using Electronic Data Interchange formats EDI software and statistical methodologies to forecast and maintain correct inventory in the supply chain.

SCOR Best Practice Pages

Code → BP.002 Risk Management Strategies ← Best Practice Name

Risk management strategies are developed and communicated. Commonly used strategies are Risk Mitigation, Risk Avoidance, Risk Transfer and also Risk Acceptance.

- Risk Mitigation is a plan to reduce the probability of occurrence or minimize the impact of the risk.
- Risk Avoidance occurs when the supply chain risks are too high in terms of its probability of occurrence and impact and beyond the threshold limits of the organization's appetite for risk.
- Risk Transfer occurs when part or all the risk can be transferred to another process where it presents a better prospect of management or mitigation through less costly actions.
- Risk Acceptance occurs when a risk has low probability of occurrence and low impact and for which a contingency plan is easily available for deployment if the risk occurs.

← Best Practice Description

Risk management strategies may differ by supply chain.

Processes	
sE9	Manage Supply Chain Risk
sE9.5	Mitigate Risk
Metrics	
AG.1.3	Overall Value at Risk (VAR)
CO.1.1	Total Supply Chain Management Cost
People	
HS.0124	Risk and exception management
HS.0125	Risk Assessment
HS.0126	Risk Identification
HS.0127	Risk Mitigation
HS.0128	Risk Response Planning

← Applicable Processes

← Applicable Metrics

← Applicable Skills

Activity 9: Team Assignment

Dota Corp. relies on League Logistics to deliver make-to-stock panels to the corporate customers and also collect the defective panels from them

- Identify any 5 relevant Level-3 processes in League Logistics' GDC. Explain your selections.
- Name any 3 metrics for the relevant Level-3 processes identified. Explain these metrics.
- Name any 3 best practices for the relevant Level-3 processes identified. Explain these best practices.

Activity 9: Selected Level 3 Processes

Based on SCOR 12.0 quick reference, the following are a few selected Level-3 processes for the GDC.

sS - Source		sR - Return		
sS1 Source Stocked Product	sS2 Source Make-to-Order Product	sSR1 Source Return Defective Product	sSR2 Source Return MRO Product	sDR1 Deliver Return Defective Product
sS1.1: Schedule Product Deliveries	**sS2.1:** Schedule Product Deliveries	**sSR1.1:** Identify Defective Product Condition	**sSR2.1:** Identify MRO Product Condition	**sDR1.1:** Authorize Defective Product Return
sS1.2: Receive Product	**sS2.2:** Receive Product	**sSR1.2:** Disposition Defective Product	**sSR2.2:** Disposition MRO Product	**sDR1.2:** Schedule Defective Return Receipt
sS1.3: Verify Product	**sS2.3:** Verify Product	**sSR1.3:** Request Defective Product Return Authorization	**sSR2.3:** Request MRO Return Authorization	**sDR1.3:** Receive Defective Product (includes verify)
sS1.4: Transfer Product	**sS2.4:** Transfer Product	**sSR1.4:** Schedule Defective Product Shipment	**sSR2.4:** Schedule MRO Shipment	**sDR1.4:** Transfer Defective Product
sS1.5: Authorize Supplier Payment	**sS2.5:** Authorize Supplier Payment	**sSR1.5:** Return Defective Product	**sSR2.5:** Return MRO Product	

Activity 9: Selected Metrics

- SCOR 12.0 Page 272 for sD1.8

sD1.8	Receive Product from Source or Make

The activities such as receiving product, verifying, recording product receipt, determining put-away location, putting away and recording location that a company performs at its own warehouses. May include quality inspection.

Metrics	
RS.3.108	Receive Product from Make/Source Cycle Time
RS.3.110	Receive Product from Source or Make Cycle Time
CO.3.12	Indirect Cost Related to Production

Activity 9: Selected Metrics

- SCOR 12.0 Page 274 for sD1.9

sD1.9	Pick Product

The series of activities including retrieving orders to pick, determining inventory availability, building the pick wave, picking the product, recording the pick and delivering product to shipping in response to an order.

Metrics	
RL.3.36	Fill Rate
RS.3.96	Pick Product Cycle Time
CO.3.12	Indirect Cost Related to Production

Activity 9: Selected Metrics

- SCOR 12.0 Page 338 for sDR1.3

sDR1.3	Receive Defective Product (includes verify)

The process where the last known holder or designated return center receives and verifies the returned defective product against the return authorization and other documentation and prepares the item for transfer.

Metrics	
RS.3.104	Receive Defective Product Cycle Time

Activity 9: Selected Best Practices

- SCOR 12.0 Page 272 for sD1.8

Practices	
BP.009	Kanban
BP.089	Perfect Pick Putaway
BP.176	Omni-channel

Activity 9: Selected Best Practices

- SCOR 12.0 Page 274 for sD1.9

Practices	
BP.009	Kanban
BP.012	Lot Tracking
BP.089	Perfect Pick Put away
BP.176	Omni-channel

Activity 9: Selected Best Practices

- SCOR 12.0 Page 338 for sDR1.3

Practices	
BP.072	Inbound RMA-enabled Processing
BP.076	Bar Coding for Returned Materials
BP.077	Prepaid Return Shipping Label
BP.078	Return Tracking
BP.128	Vendor Recovery
BP.137	Carcass Disassembly
BP.140	Return Authorization Required
BP.167	Electronic Returns Tracking
BP.168	Rotable Spares Pool

Summary

- SCOR model provides **standard processes**, **performance metrics** and **best practices** for supply chain industries.
- SCOR is NOT the "formula" or "prescription" for companies' operational problems but rather a supporting tool to improve supply chain operations using:
  - Framework for principles and processes of supply chain management
  - Standards for definition, process and performance measurement of Supply Chain activities
  - Common language for Supply Chain partners to bridge gaps, set shared goals, begin collaboration
  - Technology selection to fulfil Supply Chain objectives
- With SCOR, you will discover systematically the best practices in supply chain management, the know-how to implement recommended processes and to improve your supply chain performance.

Learning Outcome

- Identify and relate the relevant SCOR level 3 processes to a given scenario
- Select and apply the appropriate SCOR performance metrics
- Choose and apply the best practices of the SCOR model to a given case study and explain how those best practices benefit the business
- Describe the Benchmarking Analysis