Supply Chain Management for Efficient Consumer Response Conference

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Valahia University of Targoviste, Romania

SCM 4 ECR

Supply Chain Resilience. Process Reengineering in conditions of risk and disruption

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It appears that everywhere in the world where we meet leaders of the business and political world, practically everybody feels that *this age is different…*

…A NEW TYPE OF NORMALITY: CHAOTICS

Source: ***Chaotics – Management si Marketing in Era Turbulentelor, P.Kotler, J.A. Caslione, 2009***

A malfunction is a situation in which the processes or resources of an organization do not operate as intended. The damages resulting from a malfunction are to be considered “low”.

“Low” damage in this sense is damage that is negligible in comparison to the annual results of a company or the total budget of a government agency, or that only has a minor effect on the ability of the company or government agency to perform its tasks.

Malfunctions are generally eliminated while performing the daily troubleshooting procedures integrated into routine business operations. However, malfunctions can escalate to an emergency and must be observed critically, documented carefully, and eliminated promptly.

A crisis is understood to be a situation deviating from the normal state which can occur at any time in spite of the preventive safeguards implemented in the company or government agency and which cannot be handled by the normal organizational and operational structures.

Crisis management is activated in this case. There are no procedural plans for responding to crises, only general instructions and conditions. A typical feature of a crisis is the uniqueness of the event.

Emergencies that can adversely affect the continuity of business processes can escalate and become crises.

An ***emergency*** ***is a event in which the processes or resources of an organization do not function as intended.*** The availability of the corresponding processes or resources cannot be restored in the required time frame.

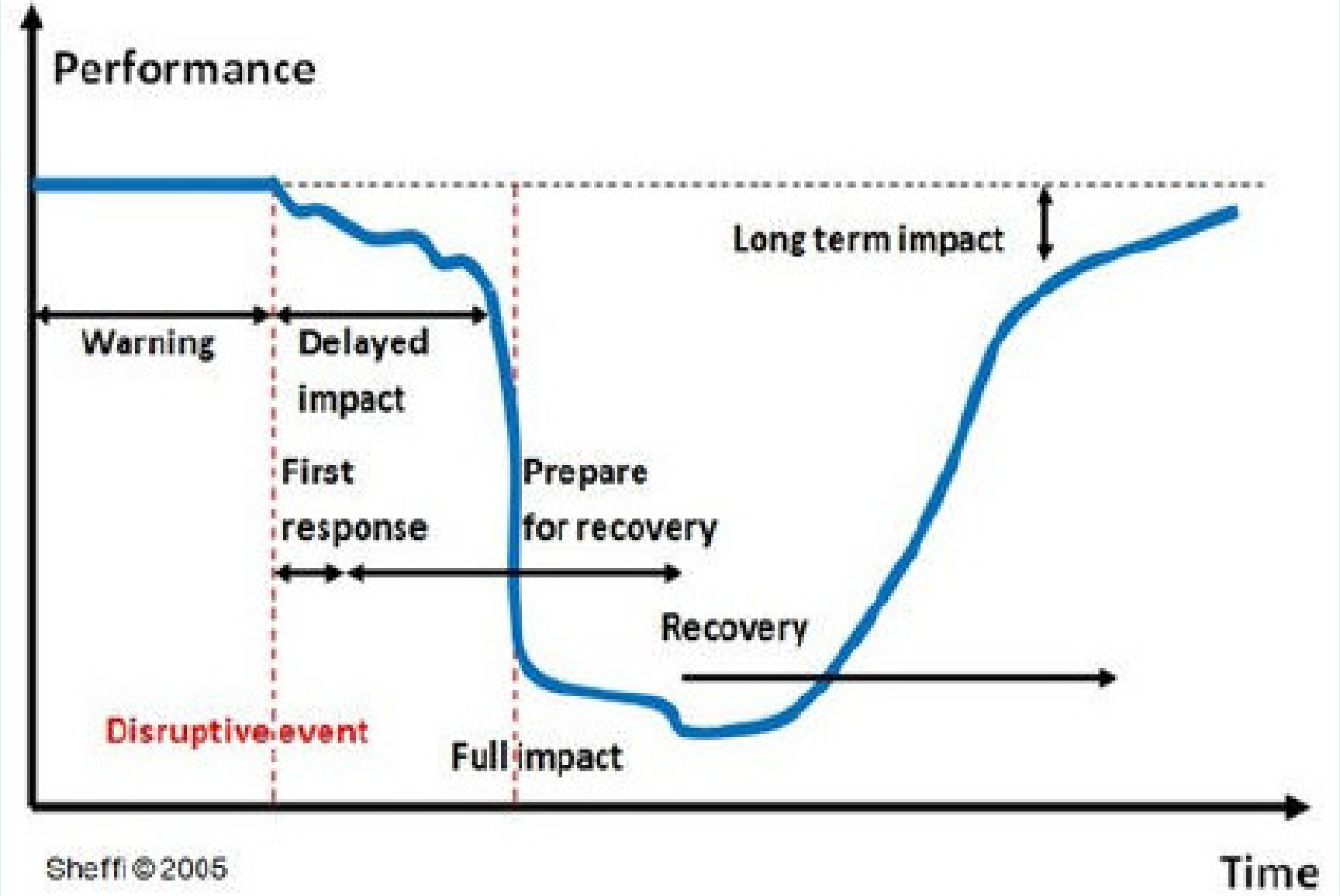
Business operations are seriously affected. It may be impossible to uphold any existing SLAs (Service Level Agreements). The resulting damages are high to very high and affect the annual results of a company or the ability of a government agency to fulfill its tasks so significantly that such damage is unacceptable.

Emergencies cannot be handled during general daily business operations and require a special business continuity response organization instead.

Risk is the *'variation in the distribution of possible outcomes, their likelihoods and their subjective values'; or the hazard focused* interpretation, common in risk management, which is more likely to present risk in terms of:

Risk = Probability (of a given event) x Severity (negative business impact).

Disruptions of business processes can have different causes and different effects. To illustrate which events are to be considered in the framework of business continuity management, we provide short explanations of the terms “malfunction”, “emergency”, “crisis”, and “disaster” as they are understood and used in the framework of this standard.


Performance
Long term impact
Warning
Delayed
impact
First
response
Prepare
for recovery
Recovery
Disruptive event
Full impact
Sheffi ©2005
Time

Definition used in risk management

Business Vulnerability, defined as an exposure to serious disturbances, arising from risks within the supply chain as well as risks external to the supply chain. Vulnerability is a result of any weakness within a complex system that can seriously jeopardize its activities.

Enterprise Risk Management (ERM) as a set of coordinated actions about protecting and enhancing share value to satisfy the primary business objective of shareholder wealth maximization.

Supply chain risk : the negative deviation from the expected value of a certain performance measure , resulting in negative consequences for the focal firm.

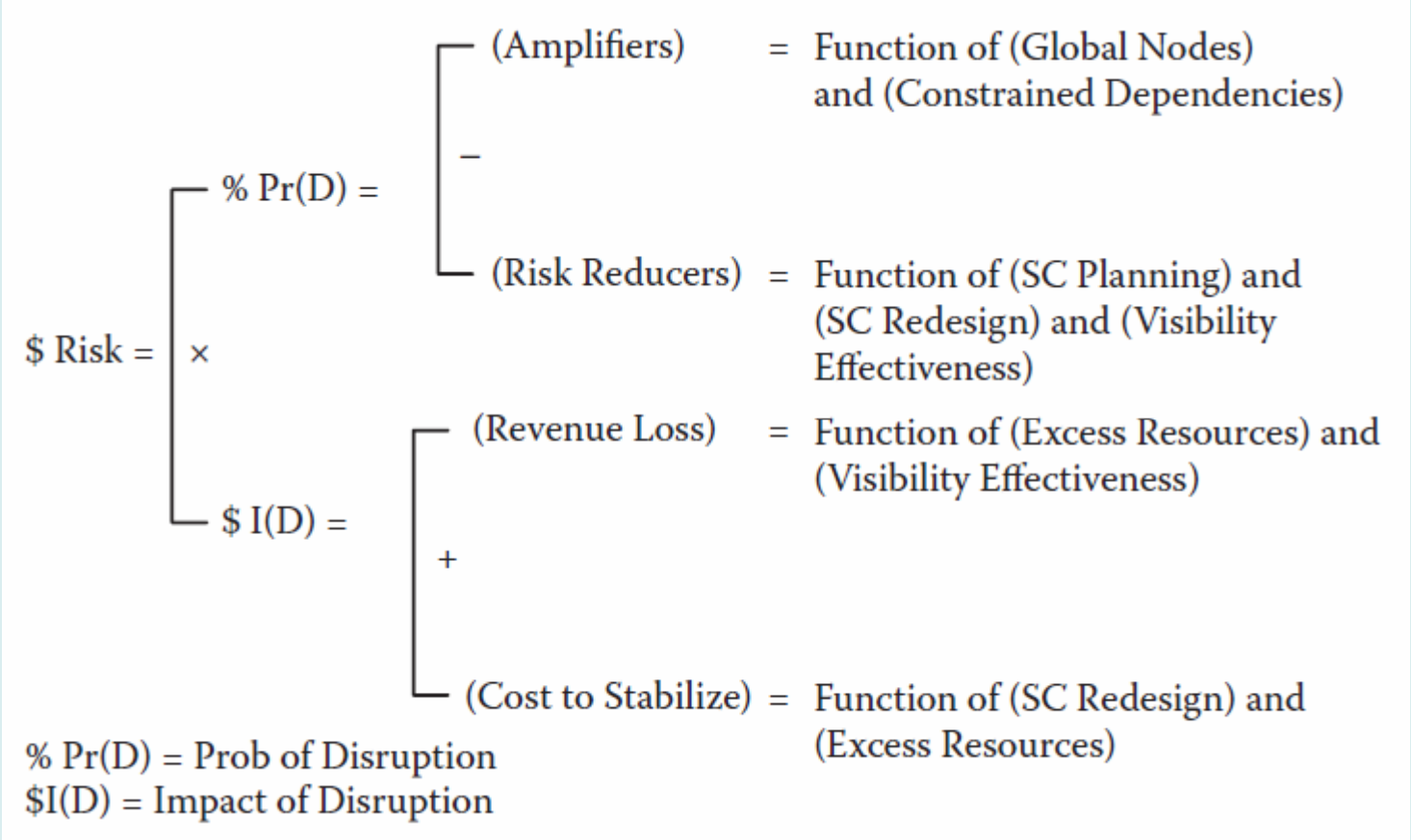
Supply chain disruption : a supply chain disruption is an unintended , untoward situation, which leads to supply chain risk . For the affected firms, it is an exceptional and anomalous situation in comparison to every-day business .

Supply chain risk management is the systematic identification, assessment , and quantification of potential supply chain disruptions with the objective to control exposure to risk or reduce its negative impact on supply chain performance.

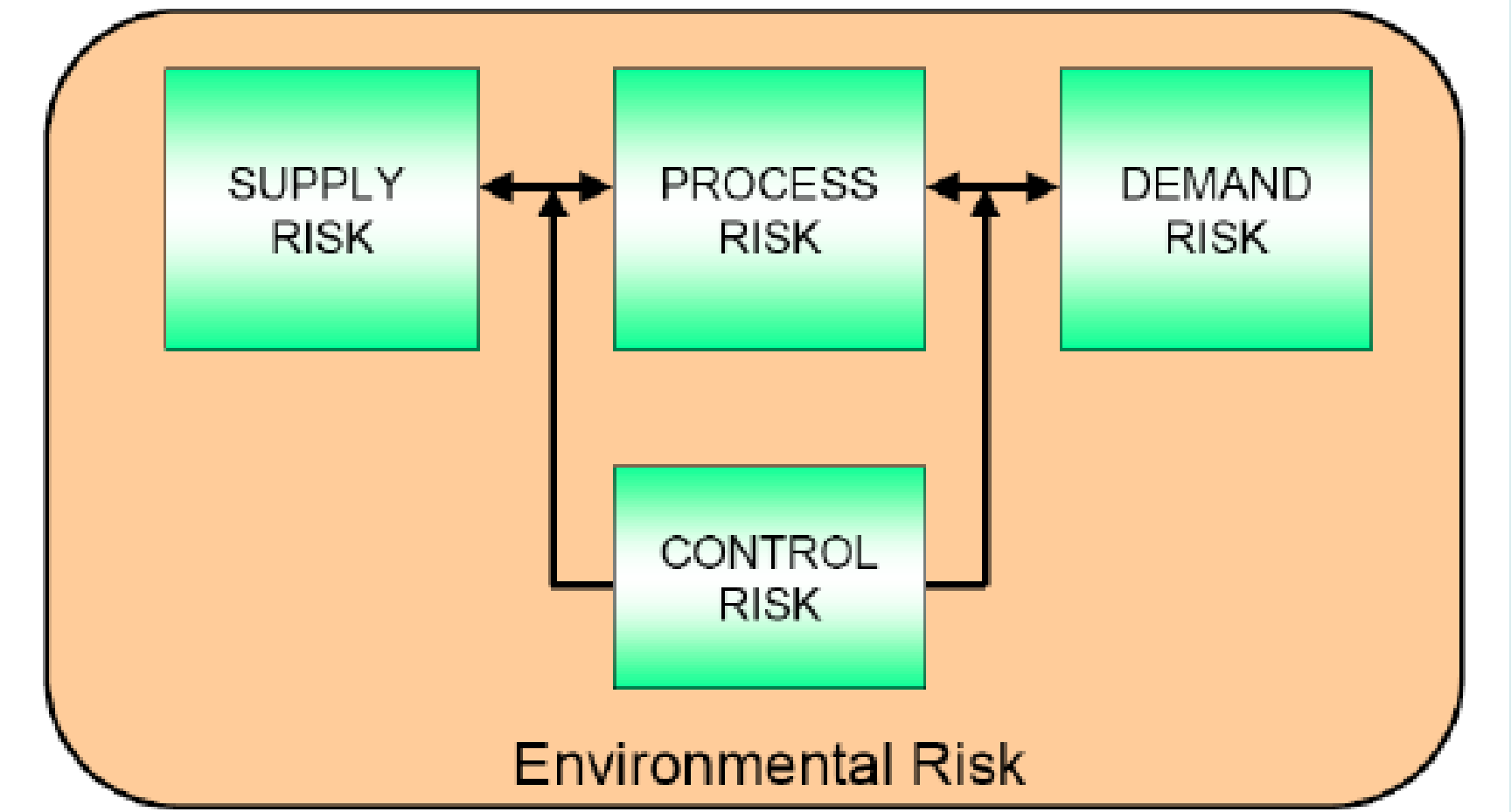
Potential disruptions can either occur within the supply chain (e.g. insufficient quality , unreliable suppliers , machine break-down , uncertain demand..etc) or outside the supply chain(e.g. flooding , terrorism, labor strikes, natural disasters, large variability in demand ,etc.).

Management of risk includes the development of continuous strategies designed to control, mitigate, reduce, or eliminate risk.

Quantifying supply chain risk.



Risk sources in the supply chain



Source: Martin Christopher and Helen Peck

Resilience as *'the ability of a system to return to its original state or move to a new, more desirable state after being disturbed'.*

Creating the Resilient Supply Chain

The managerial framework categorizes the sources of risk according to perceived location of a potential risk or manifestation of an event, i.e. into three stages:

- **Internal to the focal firm**
  - **Process**
  - **Control**
- **External to the focal firm but internal to the supply chain network**
  - **Demand**
  - **Supply**
- **External to the network**
  - **Environment**

The first two 'internal' categories of the framework relate to elements which are within the control of the focal firm, more often than not this will be within the bounds of the firm as a legally defined unit.

Supply chain reengineering

Conventionally supply chains have often been designed to optimize for cost and/or customer service, rarely was resilience an 'objective function' for the optimization process.

i) Supply chain understanding. A fundamental pre-requisite for improved supply chain resilience is an understanding of the network that connects the business to its suppliers and their suppliers and to its downstream customers. Mapping tools can help in the identification of 'pinch points' and 'critical paths'.

A critical path in the supply chain/network may have one or more of the following characteristics:

- Long lead-times e.g. the time taken to replenish components from order to delivery
- A single source of supply with no short-term alternative
- Linkages where 'visibility' is poor, i.e. little or no shared information between nodes
- High levels of identifiable risk (i.e. supply, demand, process, control and environmental risk).

ii) Supplier base strategy Whilst there has been a move towards the reduction of the supplier

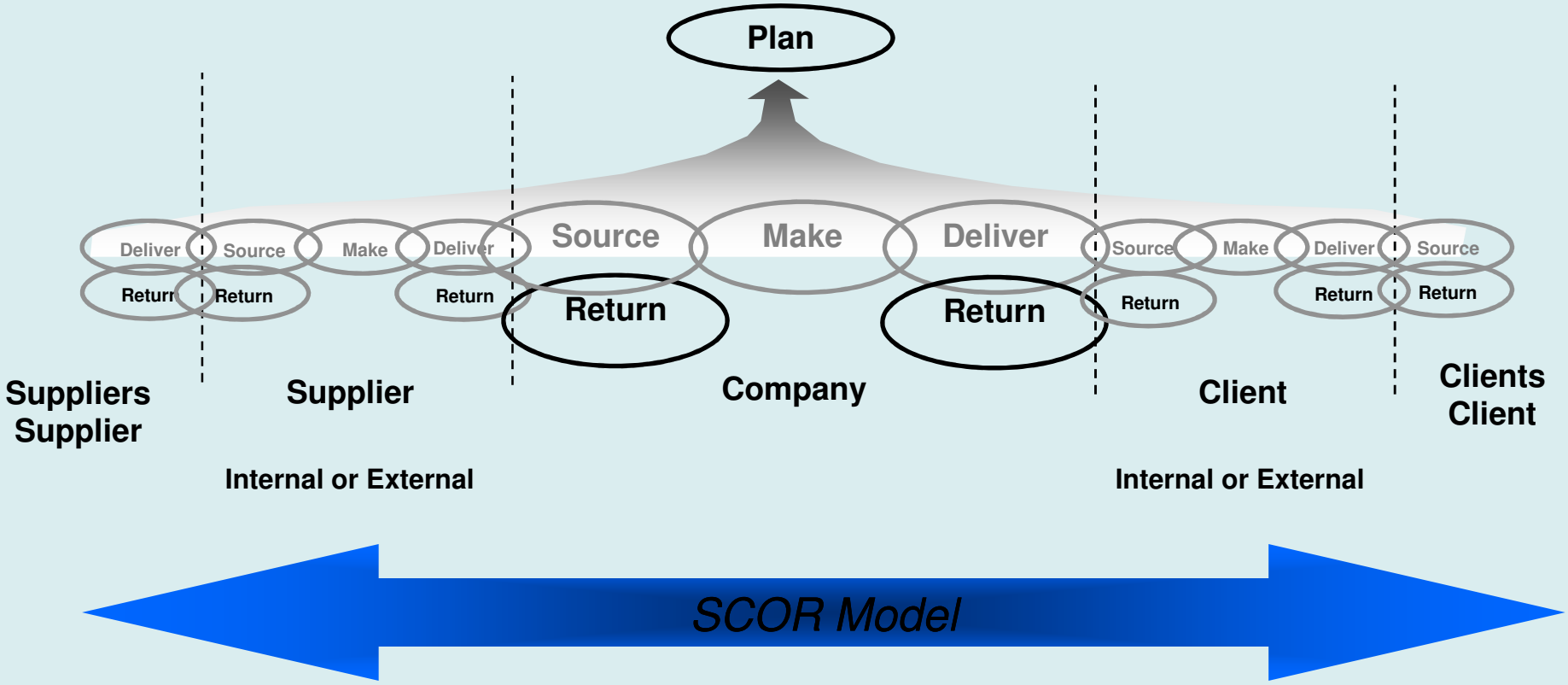
base in many companies, there may be limits to which the process should be pursued. Single sourcing, where one supplier is responsible for the supply of a specific item or service, maybe advantageous from a cost and quality management perspective, but is dangerous in terms of resilience.

iii) Design principles for supply chain resilience A number of principles have emerged which should be considered when (re) engineering supply chains to improve resilience:

• Choose supply chain strategies that keep several options open.

Re-examine the ‘efficiency vs. redundancy’ trade off.

SCOR it is structured on 5 distinct management processes



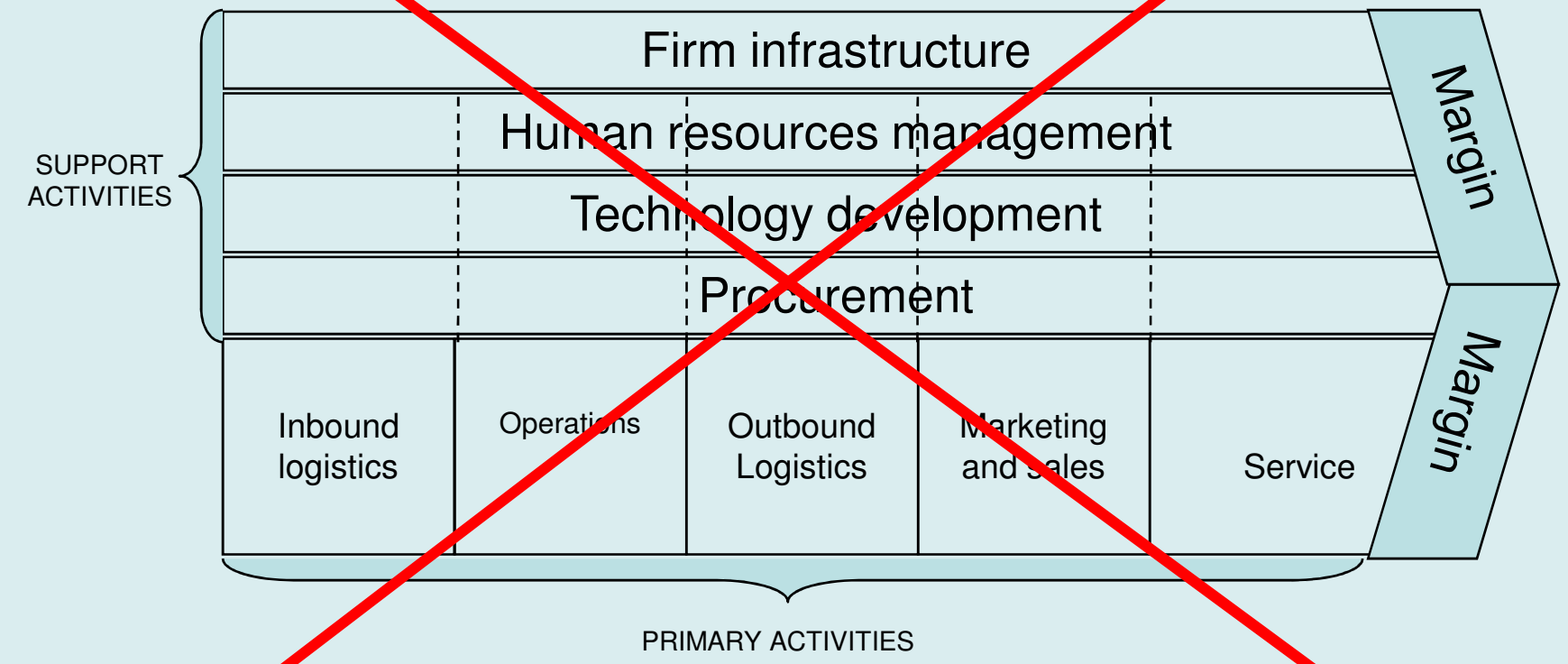
SCOR Model

Framework of Main Approach

Processes **Measurement**

Best Practices **Technologies**

The Value Chain



Our proposal: rethink the direction of the process flow, from the source -> customers to customers -> linked processes

The Customer Orientation

These definition assume that the supply chain anticipates customer demand and customers receive products from off the self.

The direction of physical flow in Porter's value chain is clearly pointed toward the customer. The push orientation, product and materials move toward the final market, driven by forecast demand. The customers initiate supply chain decisions, configuring products and initiating orders that *pull* products through the chain.

Push versus Pull

The push concept produces to demand forecast in order to meet projected sales targets. It requires inventory at the point of sale, due to lead times required to produce and distribute products to the market. A push system is exppensive due to inventory costs and the danger of missed sales by not having the right product available. It does not respond rapidly to market changes.

Pull strategies treat orders individually. The supply chain only operates on the basis of orders received.

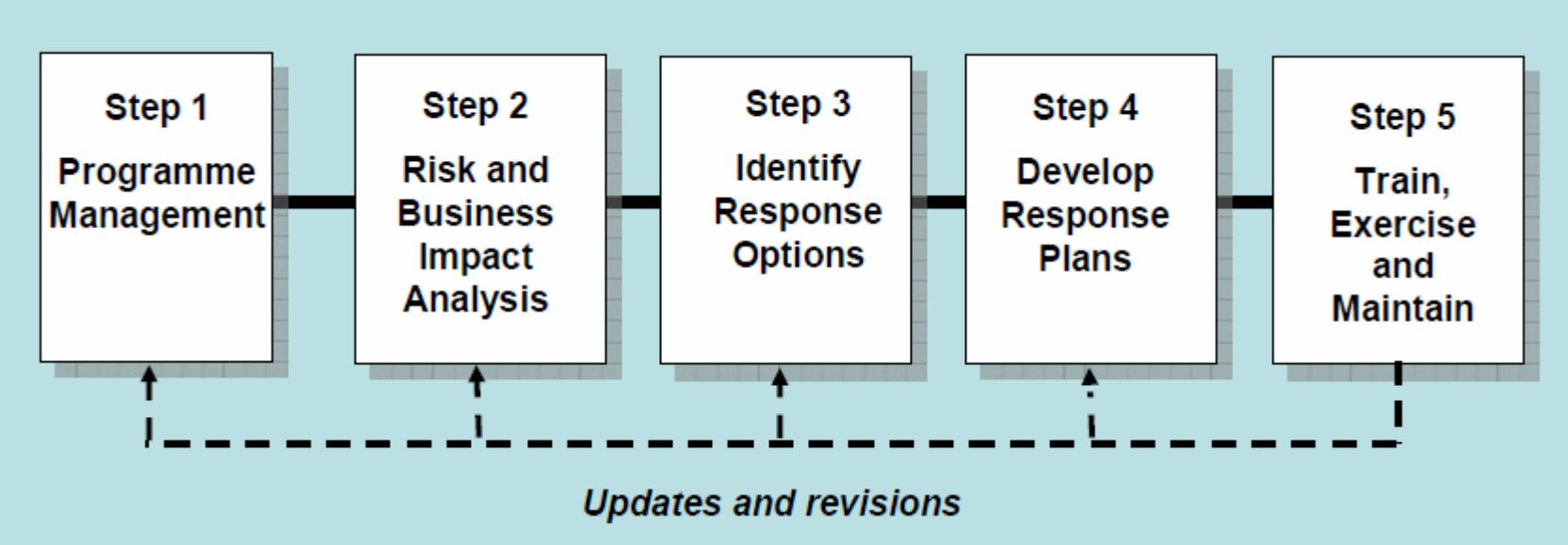
Inside-Out TO Outside-In

Aligning Outside-In and Inside-Out – How can the inside-in process perspective (customer management, supply chain) be balanced with an outside-in services view (Easy To Do Business With, one face to the customer).

Business Continuity Management (BCM) *is a management process with the goal of detecting serious risks that endanger the survival of an organisation early and to implement safeguards against these risks.*

Business continuity management consists of a planned and organised procedure for sustainably increasing the resilience of critical business processes of an organisation, reacting appropriately to events resulting in damages, and enabling the resumption of business activities as quickly as possible.

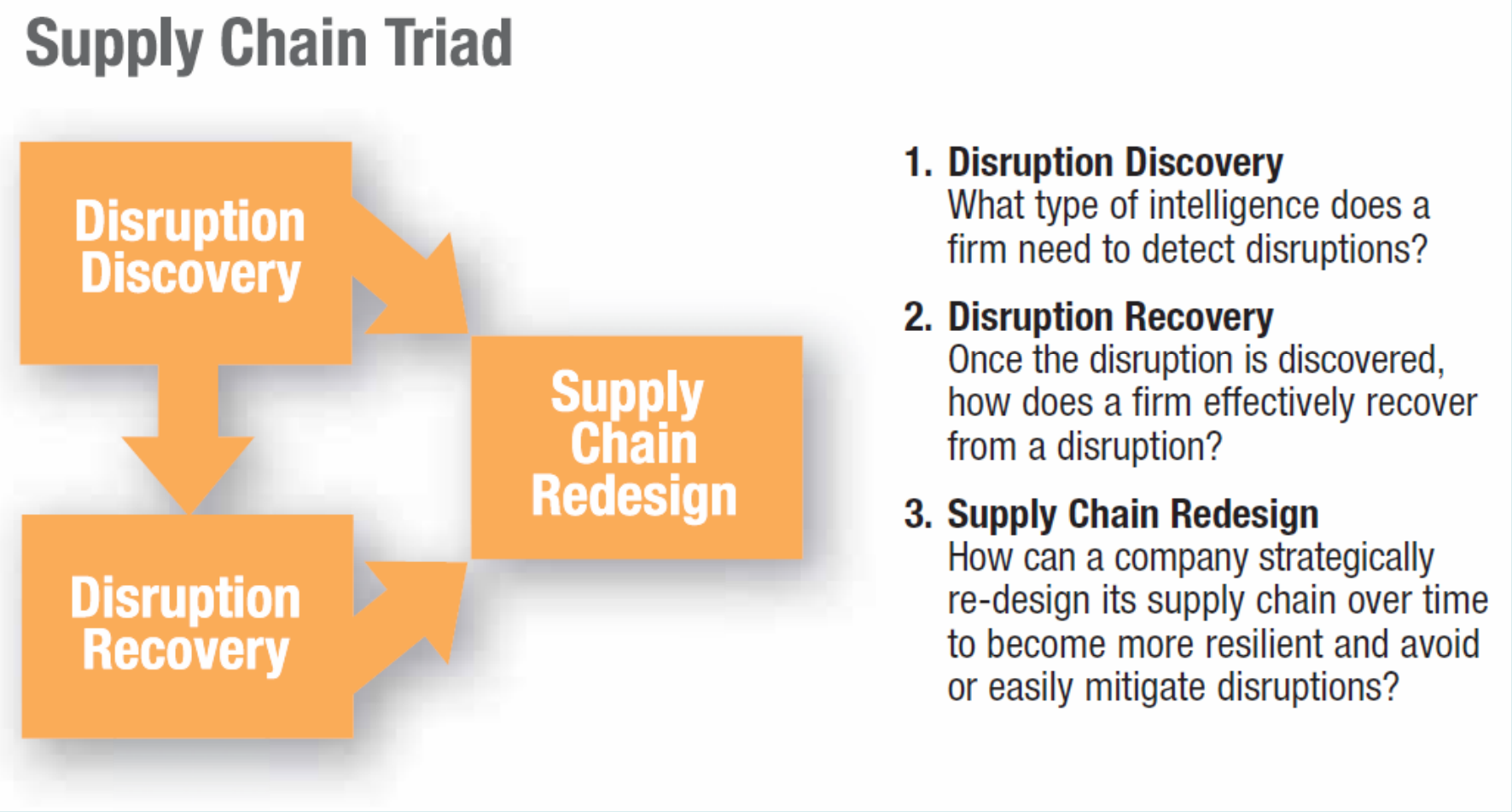
Business Continuity Management Process



Western Australian Government, Business Continuity Management Guidelines, 2009

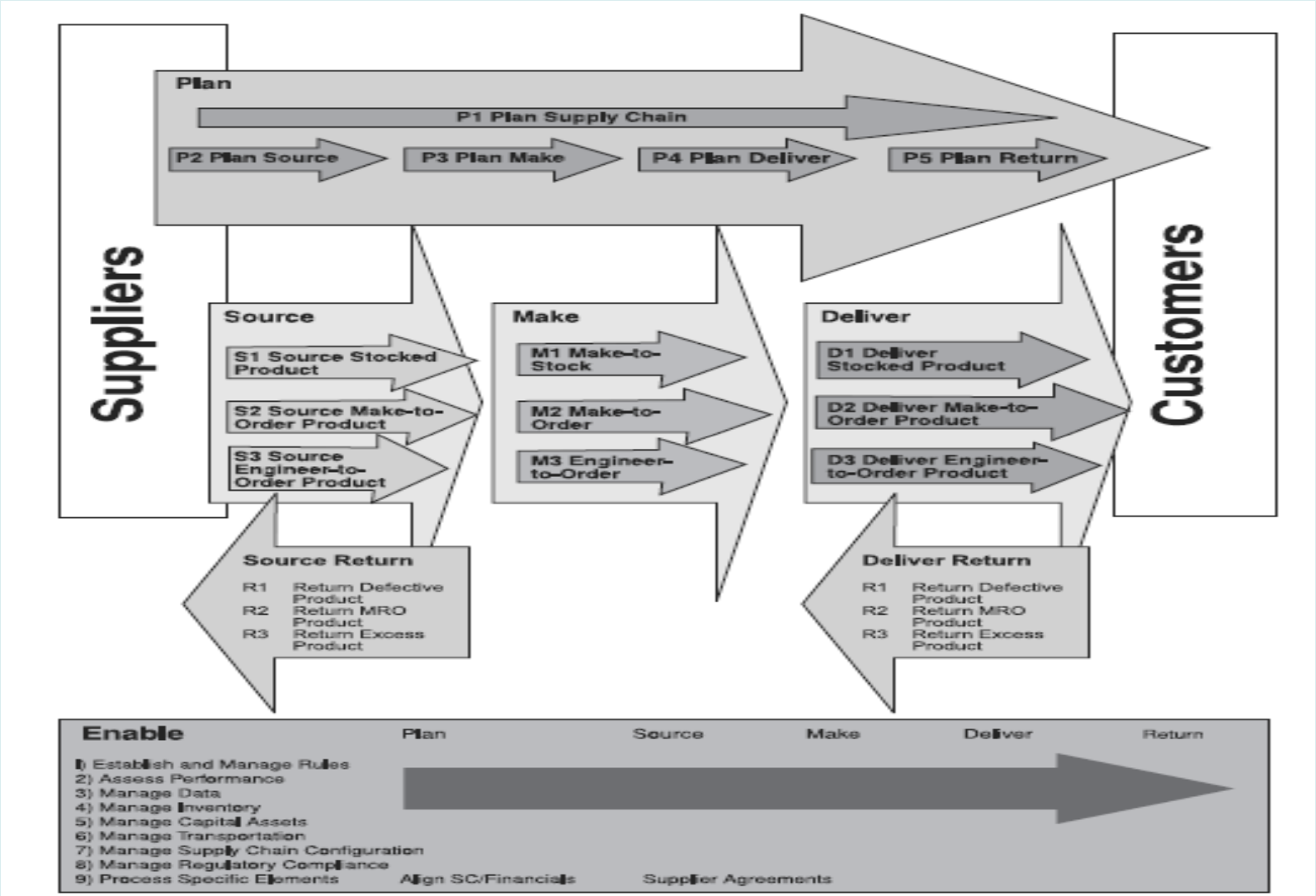
Our second proposal: compared to the Porter Model, the integration of the procurement processes in the value chain, before the outbound logistics.

Risk Management Framework.
Three key elements of supply chain disruption management.

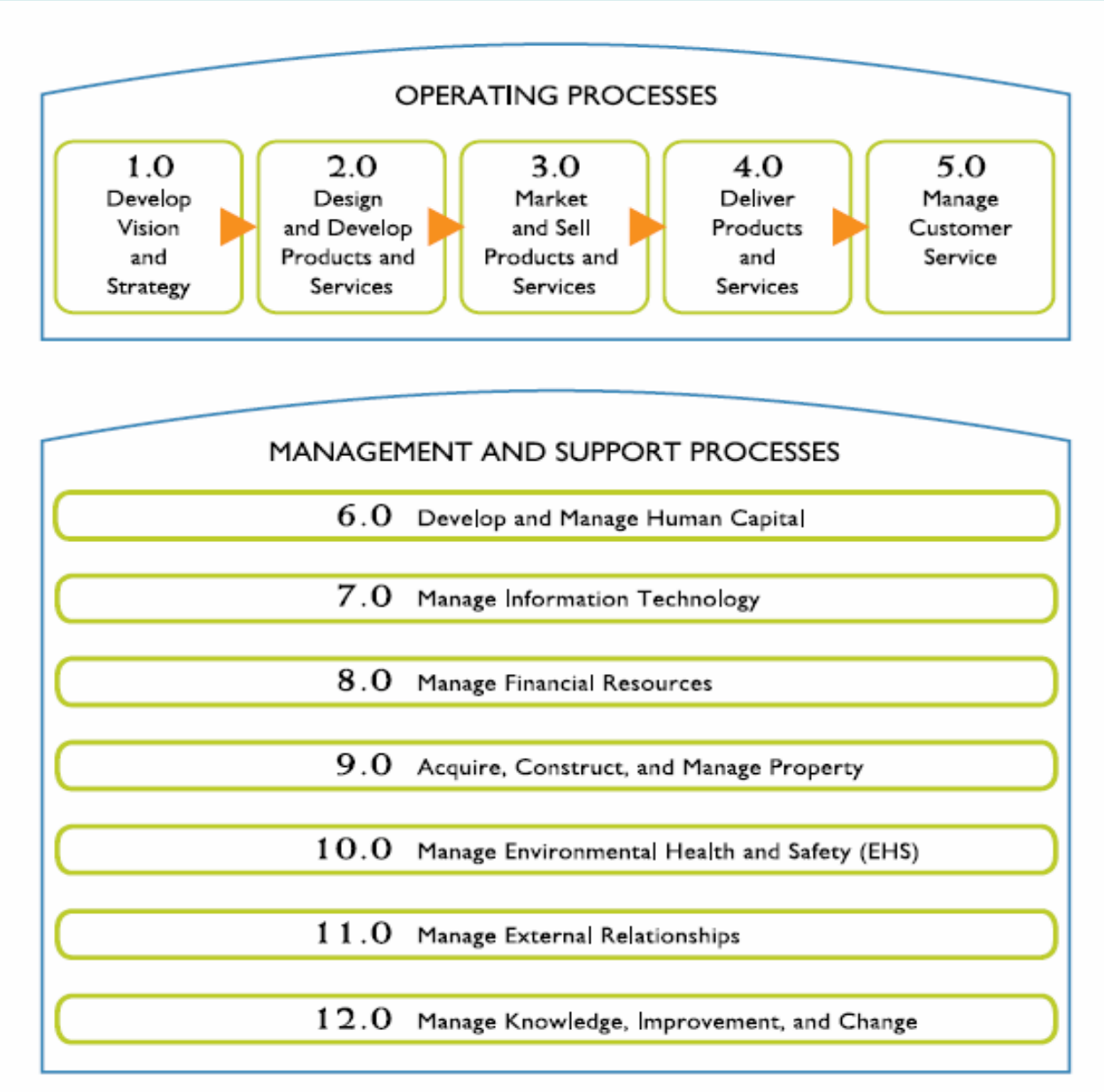


Source: Rob Handfield, Sascom

Figure SCOR Level two process types

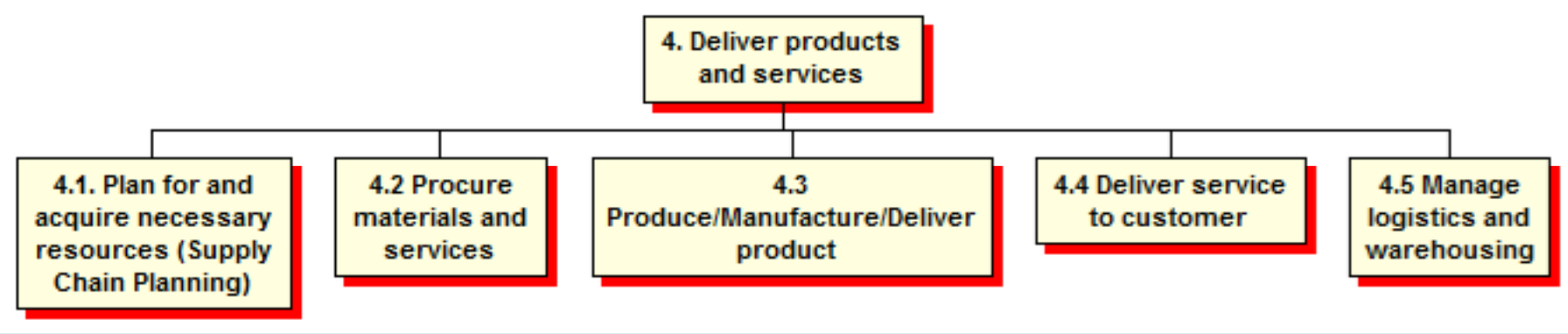


Source: Supply Chain Council Model

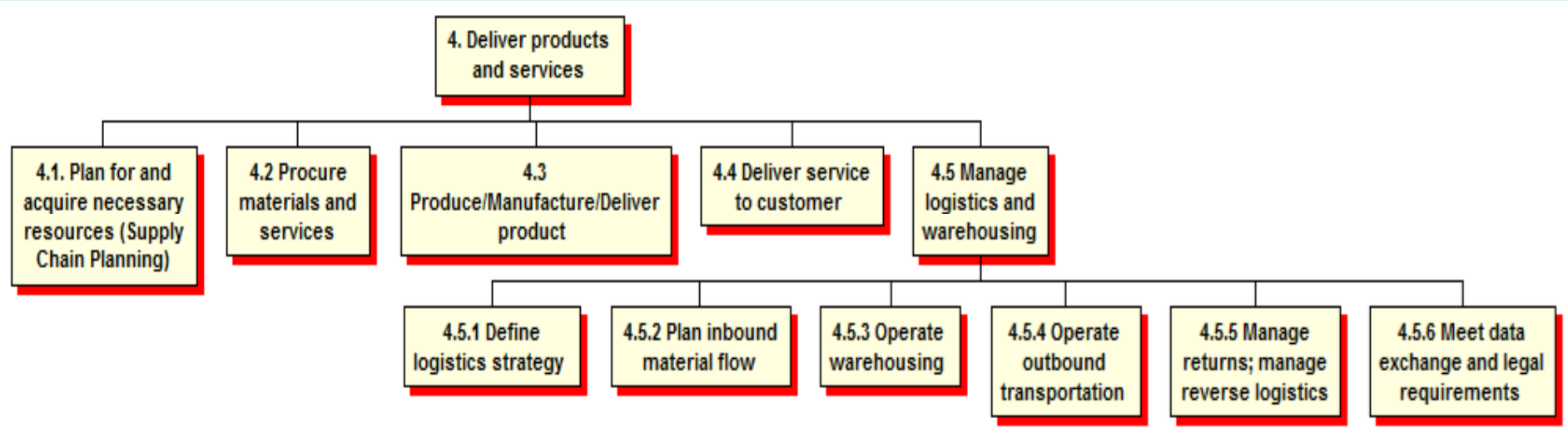

OPERATING PROCESSES
1.0 Develop Vision and Strategy
2.0 Design and Develop Products and Services
3.0 Market and Sell Products and Services
4.0 Deliver Products and Services
5.0 Manage Customer Service
MANAGEMENT AND SUPPORT PROCESSES
6.0 Develop and Manage Human Capital
7.0 Manage Information Technology
8.0 Manage Financial Resources
9.0 Acquire, Construct, and Manage Property
10.0 Manage Environmental Health and Safety (EHS)
11.0 Manage External Relationships
12.0 Manage Knowledge, Improvement, and Change

Source: APQC

The deployment of process in subprocesses, activities and subactivities, using Microsoft Project (WBS)



The deployment of process in subprocesses, activities and subactivities, using Microsoft Project (WBS)



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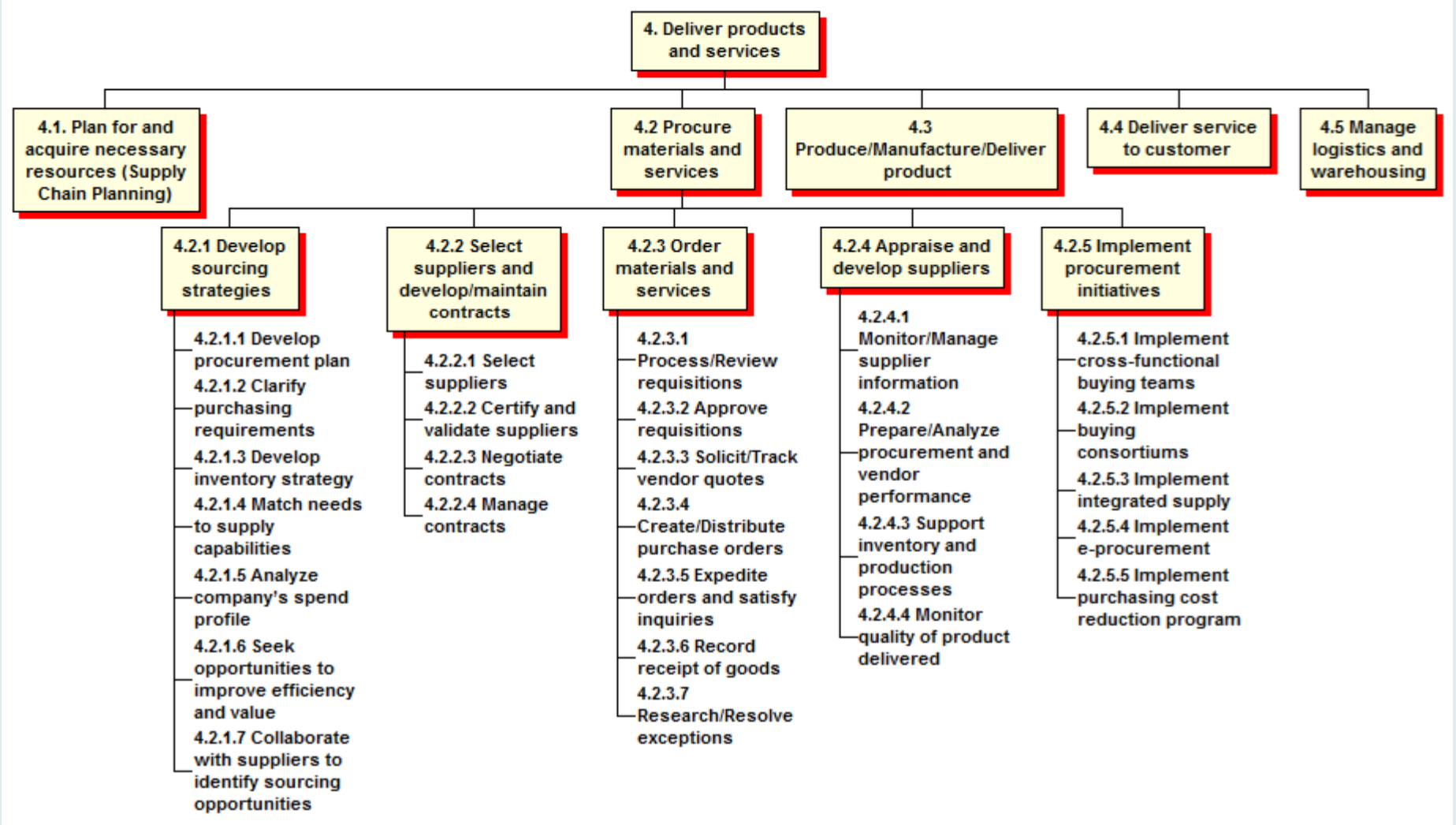

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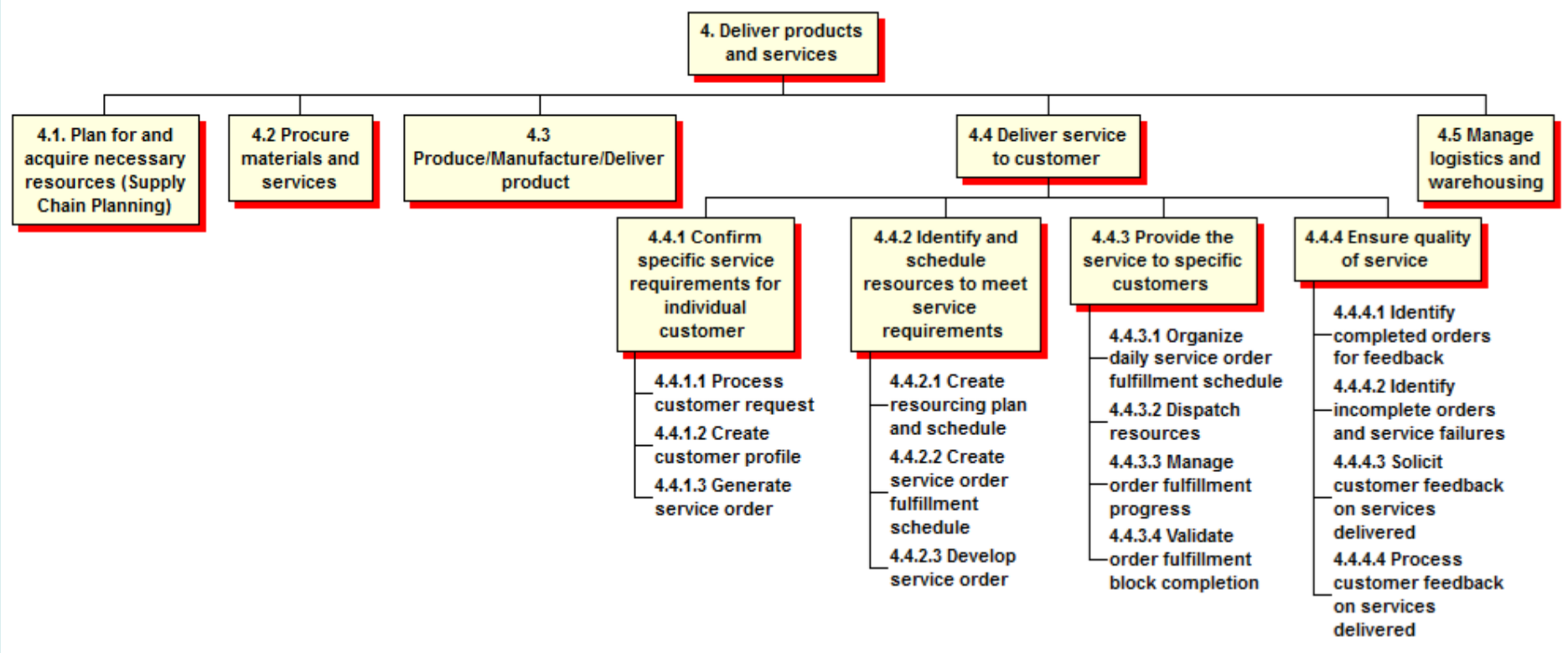

Benchmarking for the subprocess 4.1 Supply Chain Planning

SubProcess		Activity	Ierarhy	SubActivity	Analitical Hierarhic Process (AHP)	SCORECARD					MANUFACTURER	RETAILER
						0%	25%	50%	75%	100%		
4.1 Plan for and acquire necessary resources (Supply Chain Planning)			**0**		**0**							
		4.1.1 Develop production and materials strategies	0		**0**							
				4.1.1.1 Define manufacturing goals	0						*	*
				4.1.1.2 Define labor and materials policies	0						*	*
				4.1.1.3 Define outsourcing policies	0						*	*
				4.1.1.4 Define manufacturing capital expense policies	0						*	*
				4.1.1.5 Define capacities	0						*	*
				4.1.1.6 Define production network and supply constraints	0						*	*
		4.1.2 Plan sales and operations	0		**0**							
				4.1.2.1 Prepare for sales and operations planning (S&OP) meeting	0						*	*
				4.1.2.2 Balance demand and supply plans	0						*	*
		4.1.3 Manage demand for products and services	0		**0**							
				4.1.3.1 Develop baseline forecasts	0						*	*
				4.1.3.2 Collaborate with customers	0						*	*
				4.1.3.3 Develop consensus forecast	0						*	*
				4.1.3.4 Allocate available to promise	0						*	*
				4.1.3.5 Monitor activity against forecast and revise forecast	0						*	*
				4.1.3.6 Evaluate and revise forecasting approach	0						*	*
				4.1.3.7 Measure forecast accuracy	0						*	*
		4.1.4 Create materials plan	0		**0**							
				4.1.4.1 Create unconstrained plan	0						*	*
				4.1.4.2 Collaborate with supplier and contract manufacturers	0						*	*
				4.1.4.3 Identify critical materials and supplier capacity	0						*	*
				4.1.4.4 Monitor material specifications	0						*	*
				4.1.4.5 Generate constrained plan	0						*	*
		4.1.5 Create and manage master production schedule	0		**0**							
				4.1.5.1 Generate site level plan	0						*	*
				4.1.5.2 Manage work-in-progress inventory	0						*	*
				4.1.5.3 Collaborate with suppliers	0						*	*
				4.1.5.4 Generate and execute site schedule	0						*	*

SubProcess	Activity	Ierarhy	SubActivity	Analitical Hierarhic Process (AHP)	SCORECARD					MANUFACTURER	RETAILER
					0%	25%	50%	75%	100%		
4.1 Plan for and acquire necessary resources (Supply Chain Planning)		**0**		**0**							
	4.1.1 Develop production and materials strategies	0		**0**							
			4.1.1.1 Define manufacturing goals	0						*	*
	4.1.6 Plan distribution requirements	0		**0**							
			4.1.6.1 Maintain distribution center master data	0						*	*
			4.1.6.2 Determine finished goods inventory requirements at destination	0						*	*
			4.1.6.3 Calculate requirements at destination	0						*	*
			4.1.6.4 Calculate consolidation at source	0						*	*
			4.1.6.5 Manage collaborative replenishment planning	0						*	*
			4.1.6.6 Manage requirements for partners	0						*	*
			4.1.6.7 Calculate destination dispatch plan	0						*	*
			4.1.6.8 Manage dispatch plan attainment	0						*	*
			4.1.6.9 Calculate destination load plans	0						*	*
			4.1.6.10 Manage partner load plan	0						*	*
			4.1.6.11 Manage the cost of supply	0						*	*
			4.1.6.12 Manage capacity utilization	0						*	*
	4.1.7 Establish distribution planning constraints	0		**0**							
			4.1.7.1 Establish distribution center layout constraints	0						*	*
			4.1.7.2 Establish inventory management constraints	0						*	*
			4.1.7.3 Establish transportation management constraints	0						*	*
	4.1.8 Review distribution planning policies	0		**0**							
			4.1.8.1 Review distribution network	0						*	*
			4.1.8.2 Establish sourcing relationships	0						*	*
			4.1.8.3 Establish dynamic deployment policies	0						*	*
	4.1.9 Assess distribution planning performance	0		**0**							
			4.1.9.1 Establish appropriate performance indicators (metrics)	0						*	*
			4.1.9.2 Establish monitoring frequency	0						*	*
			4.1.9.3 Calculate performance measures	0						*	*
			4.1.9.4 Identify performance trends	0						*	*
			4.1.9.5 Analyze performance benchmark gaps	0						*	*
			4.1.9.6 Prepare appropriate reports	0						*	*
			4.1.9.7 Develop performance improvement plan	0						*	*
	4.1.10 Develop quality standards and procedures	0		**0**							
			4.1.10.1 Establish quality targets	0						*	*
			4.1.10.2 Develop standard testing procedures	0						*	*
			4.1.10.3 Communicate quality specifications	0						*	*

The White House
Washington
January 23, 2012

"Through the National Strategy for *Global Supply Chain Security*, we seek to strengthen global supply chains in order to protect *the welfare and interest of the American people and secure our Nation*s economic prosperity."

Barak Obama

The *National Strategy for Global Supply Chain Security (the Strategy), articulate the United States Government's policy to strengthen the global supply chain in order to protect the welfare and interests of the American people and secure Nation's economic prosperity.*

The focus in this Strategy is the worldwide network of transportation, postal, and shipping pathways, assets, and infrastructures by which goods are moved from the point of manufacture until they reach an end consumer, as well as supporting communications infrastructure and systems.

The Strategy includes two goals:

Goal 1: Promote the Secure and Efficient Movement of Goods

Goal 2: Foster a Resilient Supply Chain

Thank you for your attention!