CTSC

CERTIFIED IN TRANSFORMATION
FOR SUPPLY CHAIN

MODULE 1: SUPPLY CHAIN TRANSFORMATION OVERVIEW

APICS

ASCM

Module 1 Overview

Supply Chain Transformation Overview

- **Section A:** Supply Chain Transformations
- **Section B:** Value Proposition, Methodologies, and Organizational Design
- **Section C:** Drivers of Supply Chain Transformation

CTSC CERTIFIED IN TRANSFORMATION FOR SUPPLY CHAIN

SECTION A: SUPPLY CHAIN TRANSFORMATIONS

APICS

ascm

Section A Learning Objectives

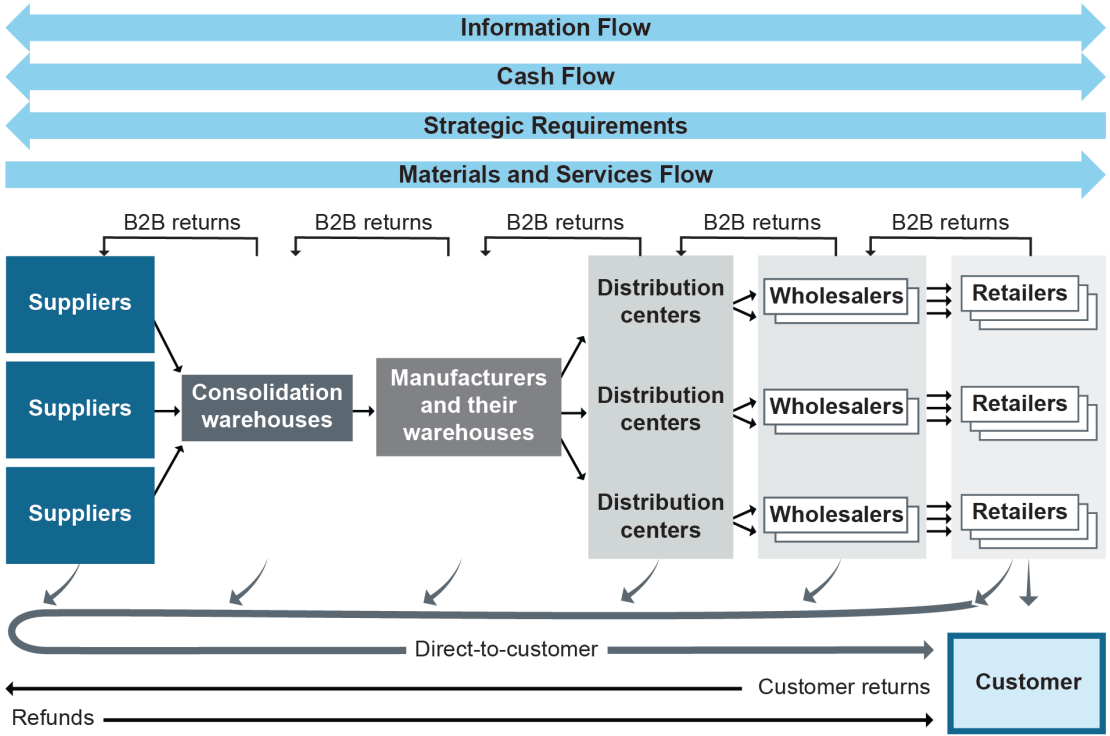
- Be aware of what is meant by supply chains (types, number, cross-functional nature, complexity).
- Relate how different market types and organizational or business unit strategies require complementary supply chain strategies.
- Understand the need for a positive supply chain transformation leadership style.

What Do We Mean When We Say Supply Chains?

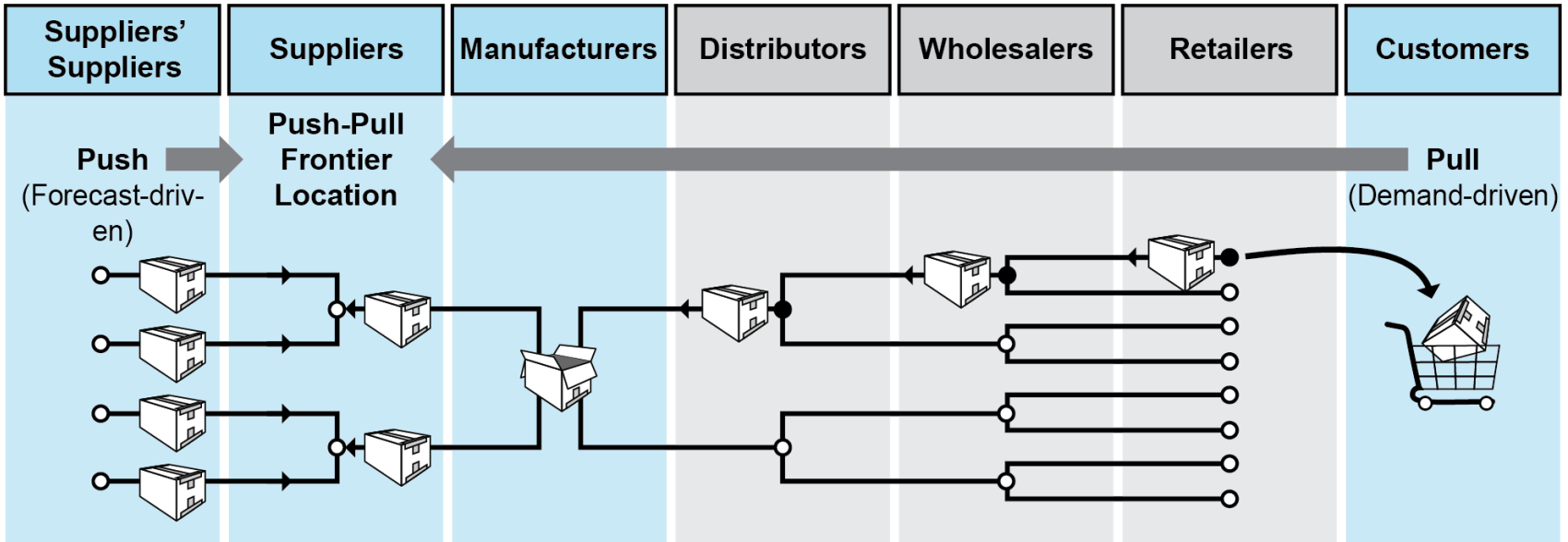
- Goal: Get everyone to see the supply chain as a strategic asset.
- Transformation is a tough sell:
  - Don’t assume that others see the value of supply chain integration.
  - Demystify complexity.
  - Get buy-in: time and persistence.

Supply Chain as an End-to-End Process

- Horizontal end-to-end process.
  - Between echelons.
  - But flows through vertical functional areas.
- Relationship management between partner organizations is critical.

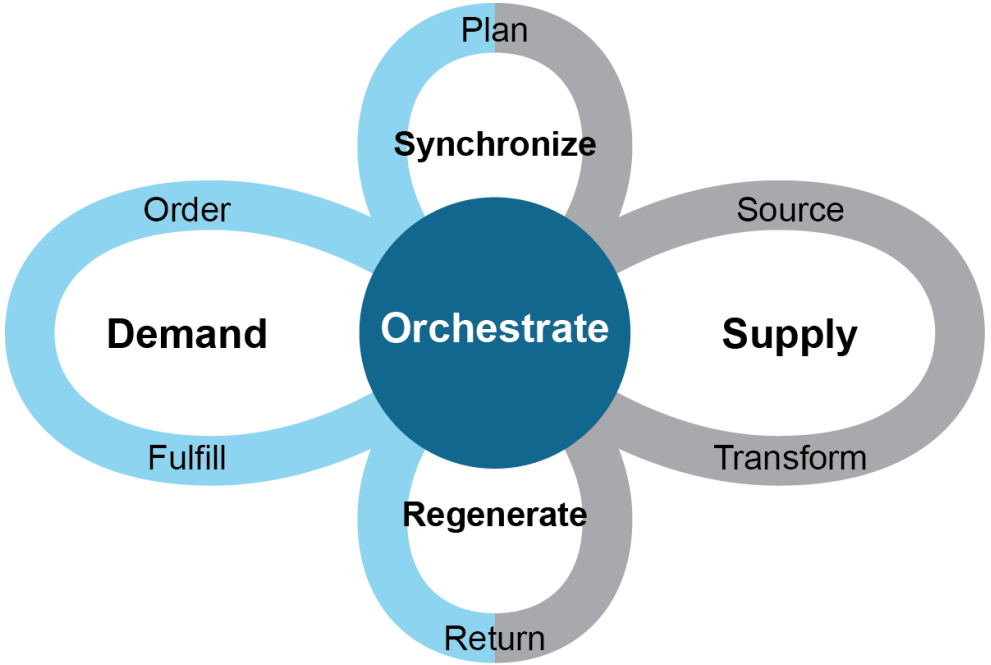


Forward Supply Chain With Push/Pull Frontier Example



SCOR DS Processes

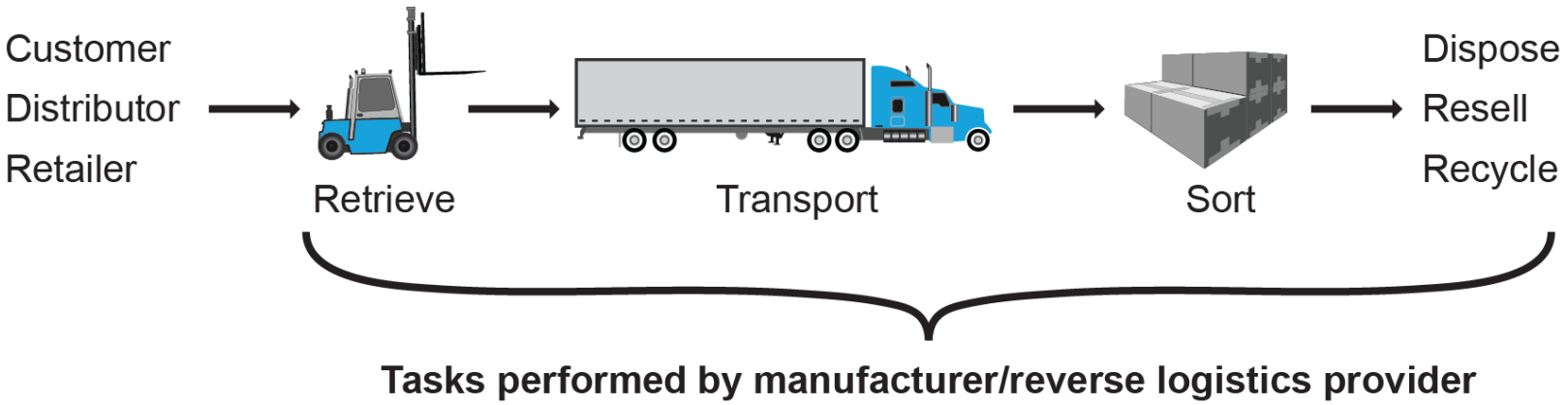
- Linear supply chain depictions have limits. (Some experts prefer “supply networks.”)
- SCOR DS uses a double infinity symbol to show how the processes are never-ending.



Source: Copyright ASCM. Used with permission.

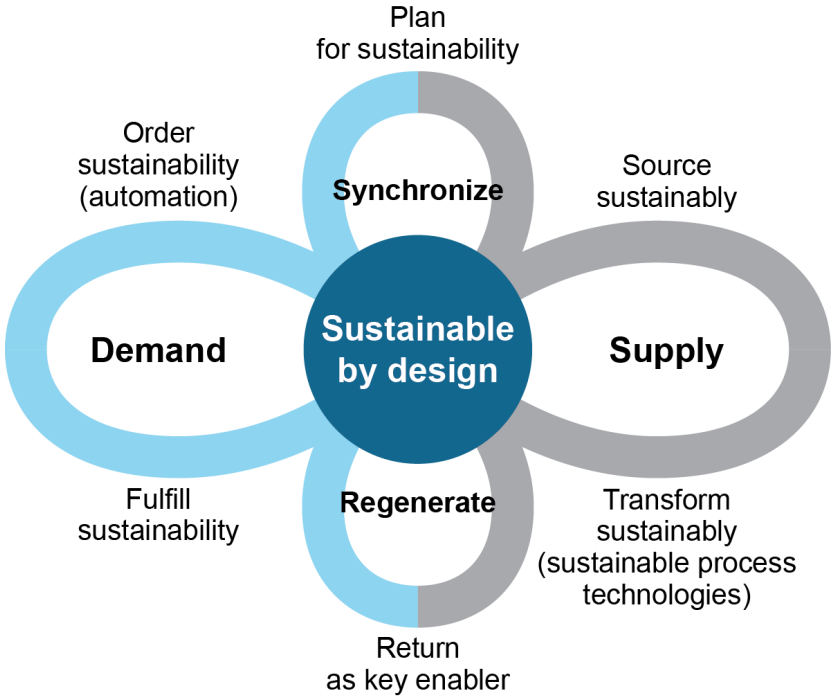
Reverse Supply Chains

Significant cost, because returns come from many places but in relatively small amounts versus forward supply chain.



Circular or Green Supply Chains

- Economic system to minimize waste and maximize resources
- Regenerative process
  - Design for durability, repair, reuse, remanufacturing, refurbishing, recycling
- Opposite of linear economy



Source: Inspired by SCOR DS model.

Digital Supply Chains

- Use of digital technology (e.g., internet of things) and digital content to improve supply chain performance.
- Instead of one upstream and one downstream echelon, it becomes a flexible matrix.
  - Radically improved information sharing, visibility, decision making, and responsiveness.

Agile Supply Chains

- Emphasize flexibility and responsiveness
- Adapt rapidly to changing markets or customer requirements and demands
- Able to return to normal operations quickly and/or adapt to new environment

Omni-Channel Supply Chains

Omni-channel network (*ASCM Supply Chain Dictionary,* 17th edition):

- A cross-channel sales approach in which all sales channels are aligned and fulfillment processes are integrated to provide consumers with a seamless shopping experience in alignment with the company's brand.

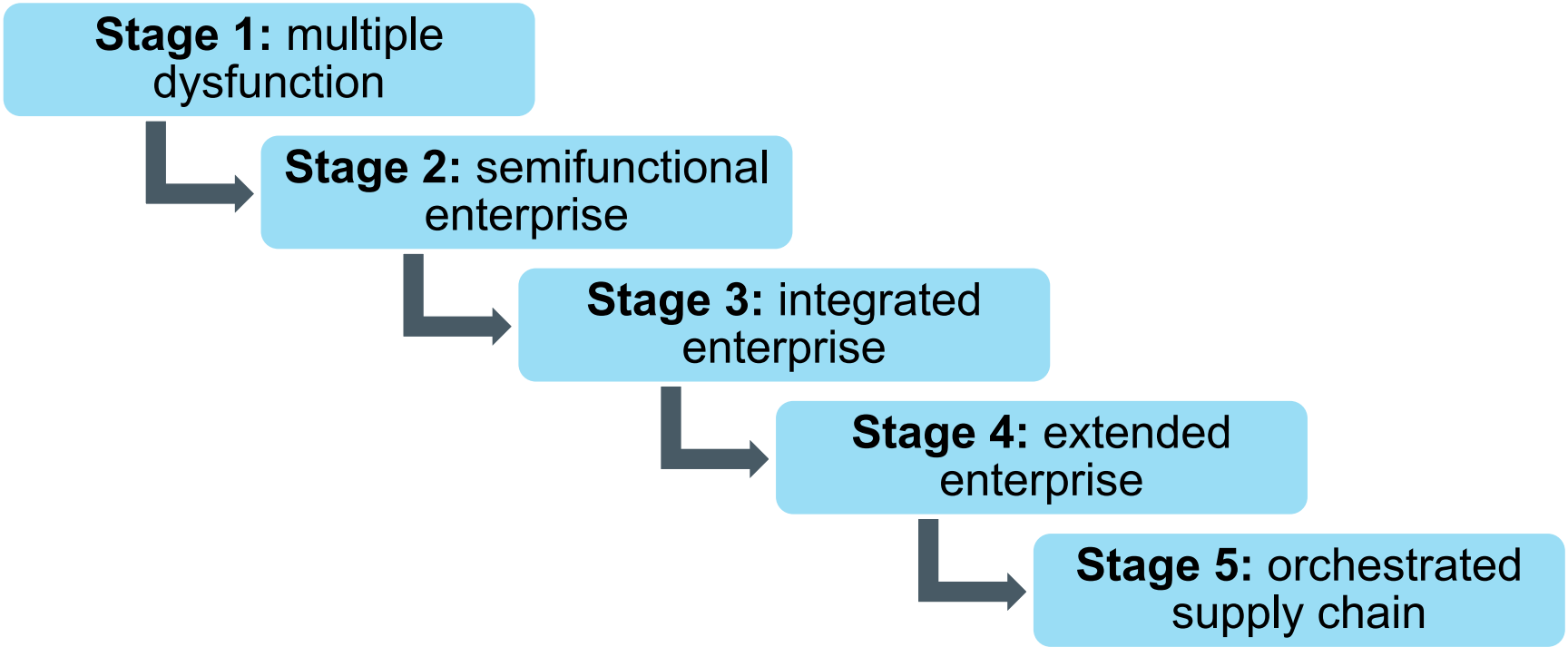
Supply Chain Specialization: New Products, MRO, and Services

- MRO: high variability in parts needed but with high availability
- New product introduction (NPI): time to market, time to volume
- Service supply chains
  - Intangible products: information and other flows, relationships, queues
  - Retail competitiveness with Amazon

Levels of Complexity

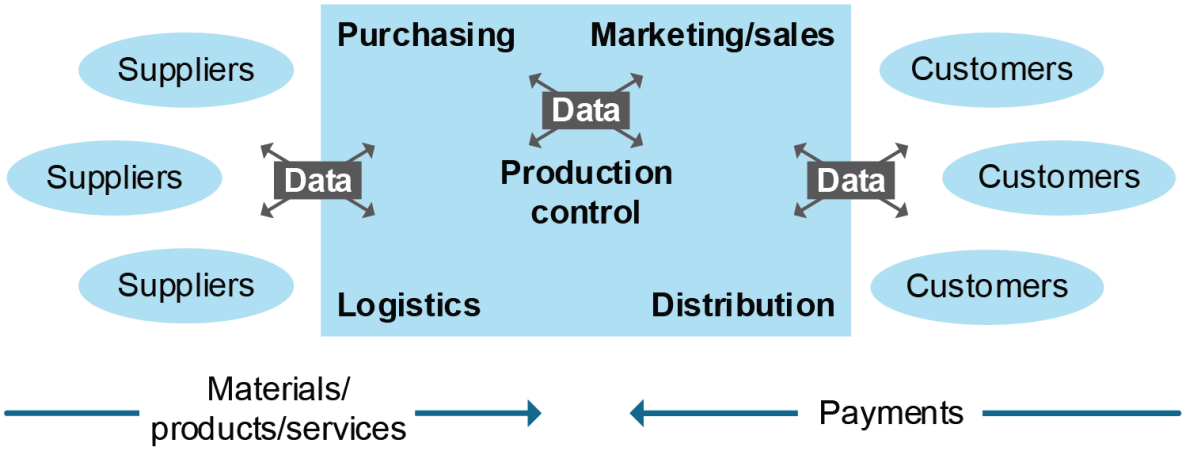
- Necessary complexity
  - Only as complex as it needs to be
  - Complexity that provides a competitive advantage
- Unnecessary complexity (hard-to-remove performance blockers)
  - Drives cost
  - Stifles innovation
  - Slows response to market changes or new competitor entrants

Levels of Maturity



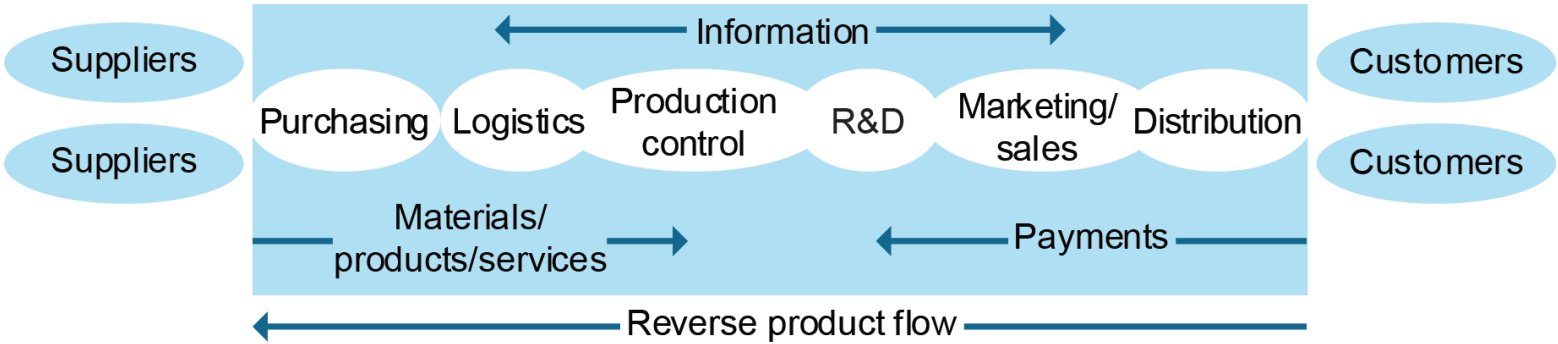
Stage 1: Multiple Dysfunction

- Lacks clear, coordinated information flows or relationships among partners, internal definitions or goals, or external links (except transactions)



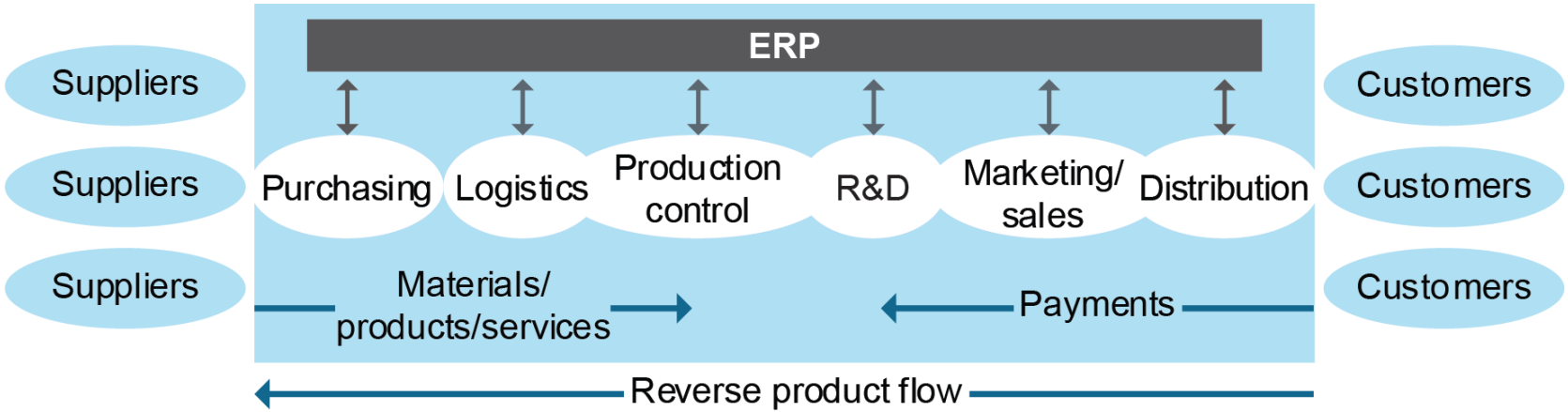
Stage 2: Semifunctional Enterprise

- Improved information flow
- Defined functional areas work sequentially without collaborating on effective ways to create value
- No supplier or customer partnerships



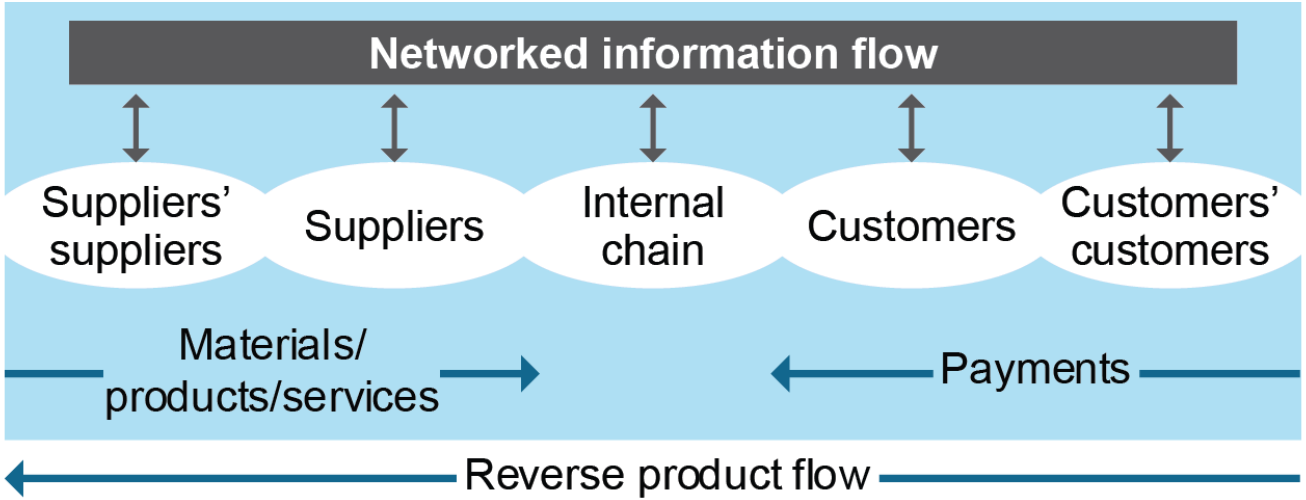
Stage 3: Integrated Enterprise

- Better cross-functional integration of ERP software, cross-functional communication, training
- Centrally located and easily accessible databases and files



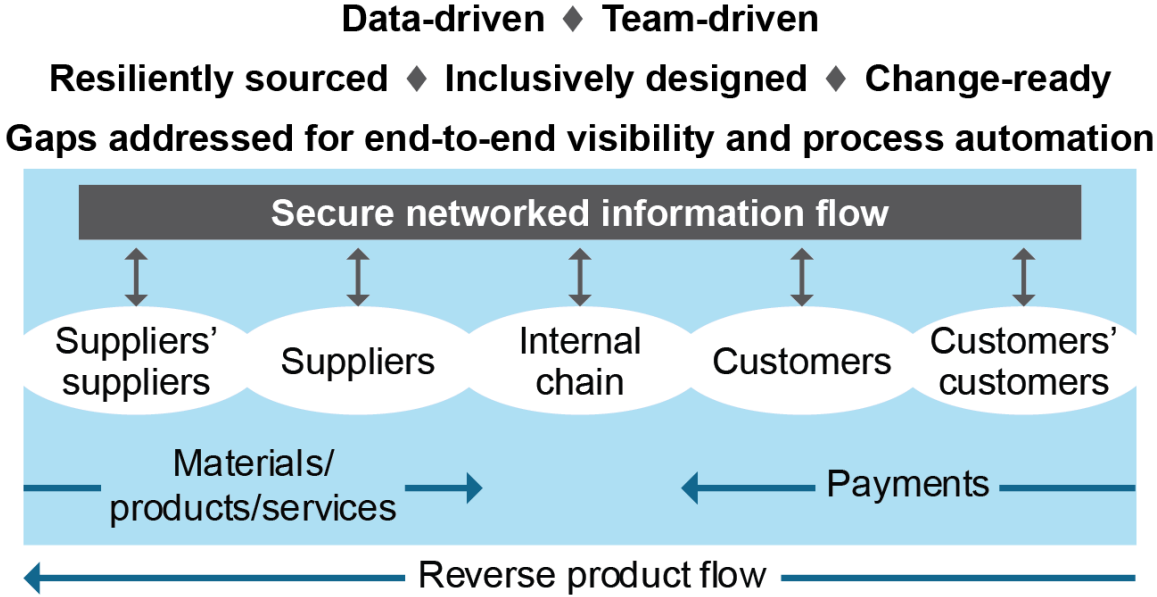
Stage 4: Extended Enterprise

- Extends at least one business process beyond the corporate boundary



Stage 5: Orchestrated Supply Chain

- Supply chain digital transformation or Industry 4.0
- Relative to competitors
  - Actual competitive advantage?
  - Close gaps
- People are ready



Topic 2: Understand the Supply Chain Maturity Stages

Understand Current and Desired Supply Chain Maturity

- Must be at level 3 or higher to get to what is called a digital supply chain transformation/Industry 4.0 initiative.
- Different aspects of a supply chain could be at different maturity stages.
  - Different plan, source, transform, maturity levels
  - Different business units at different maturity levels
  - Different technological maturity levels

Distribution Channel Maturity Levels

	Description	Customer Expectations and Experience
Single channel	Single point of contact with customer.	Customers expect simple, direct experience.
Multi-channel	Technical and functional silos (stores, other retailers, online, app) operate independently (no information sharing).	Customers choose channel but get conflicting promotions, lead times, or information. Channels are unaware of other channel use.
Cross-channel	Functional silos remain but no technical silos. (Each channel gets unified view of customer.)	Channels each can still offer different promotions (e.g., bundled services). Customer's interactions are known to each channel.
Omni-channel	Functional silos broken down with joint strategies and coordination based on unified view of customer.	Whichever channel customer chooses, they experience same brand identity. (Channel is less visible.)

Supply Chain Maturity as a Foundation for Strategy

Use maturity as an input to supply chain strategy.

Reveal gaps in connectivity and visibility goals.

Continually monitor supply chain maturity.

Reassess after reorganizations, mergers, acquisitions, or changes in external environment.

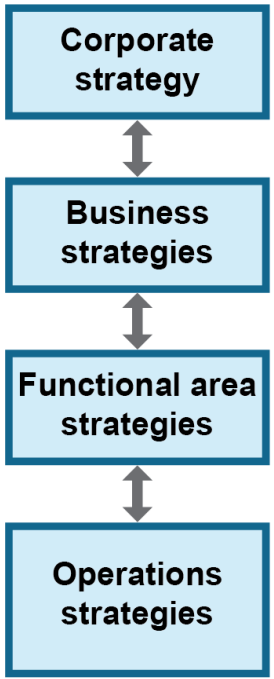
Defining Strategy and Related Plans

Strategy: Plan for using resources to achieve sustainable, long-term success.

Define success in competitive context—successful if outperforming competition.

Periodically review organizational or business unit strategies or after significant market change.

Levels of Strategy



Plan to improve competitiveness of the organization as a whole.

What business are we in?

Plan to improve competitiveness of individual lines of business.

How will we win in this market?

Plan to implement and support corporate (and business) strategies at functional level.

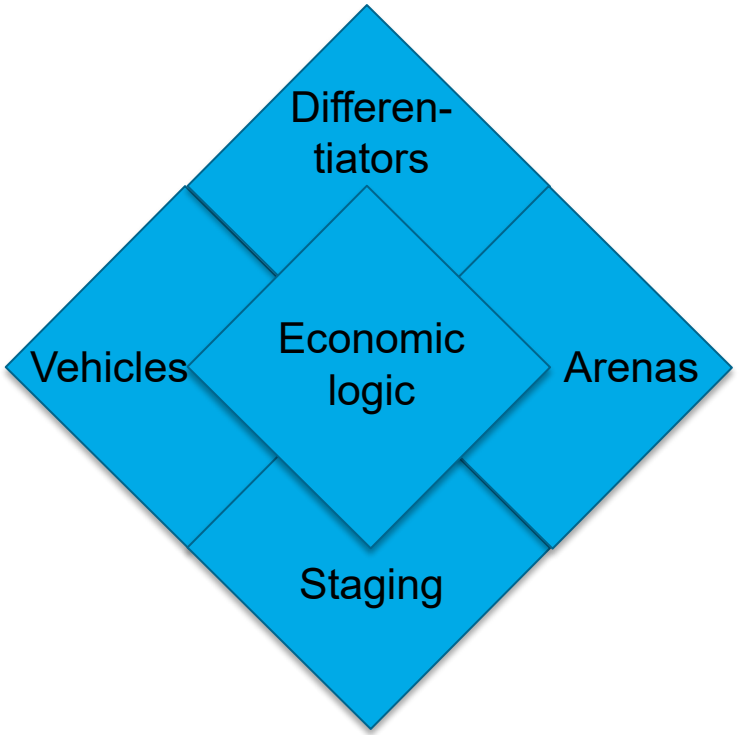
What do we need to do to support the business unit strategies?

Plan how the function will perform its work in a manner consistent with the direction and priorities described at the corporate, business, and functional area levels.

How should we do things to support the functional area strategies?

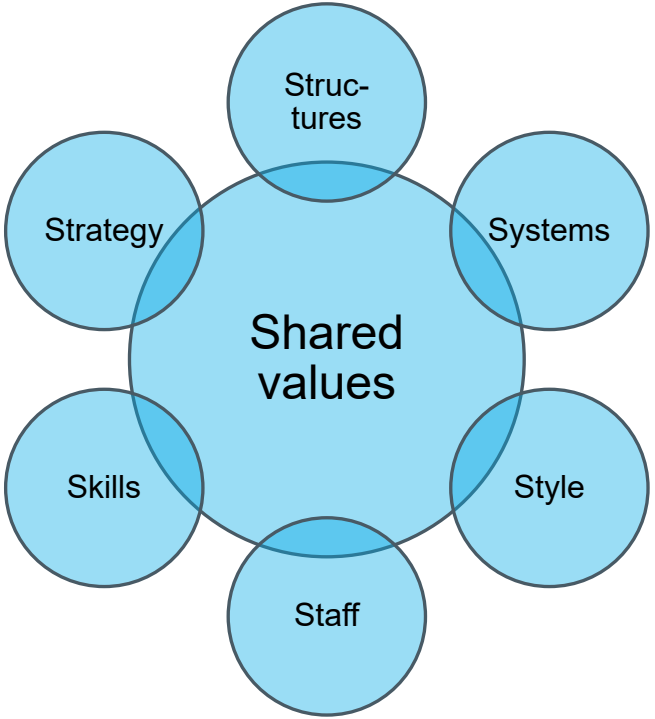
Developing Strategy: Strategy Diamond

- Checklist for essential strategy elements
- For
  - Higher levels of strategy
  - Supply chain strategy



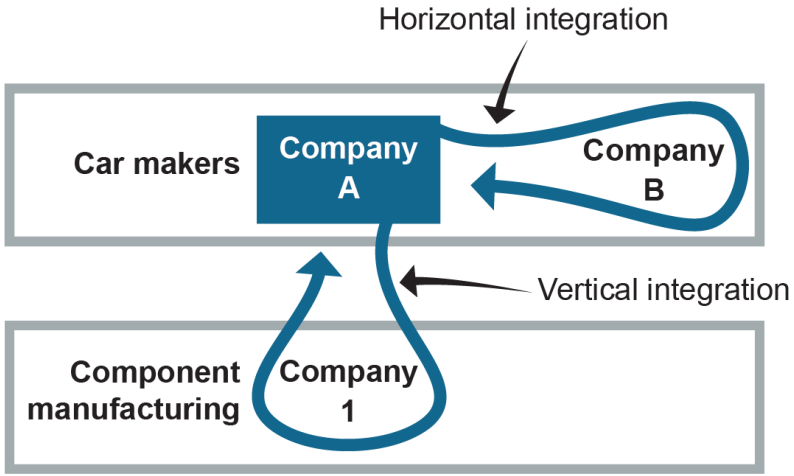
Developing Strategy Holistically: McKinsey 7-S Framework

Checklist to ensure that executives do not focus on one or just a few elements of strategy development.

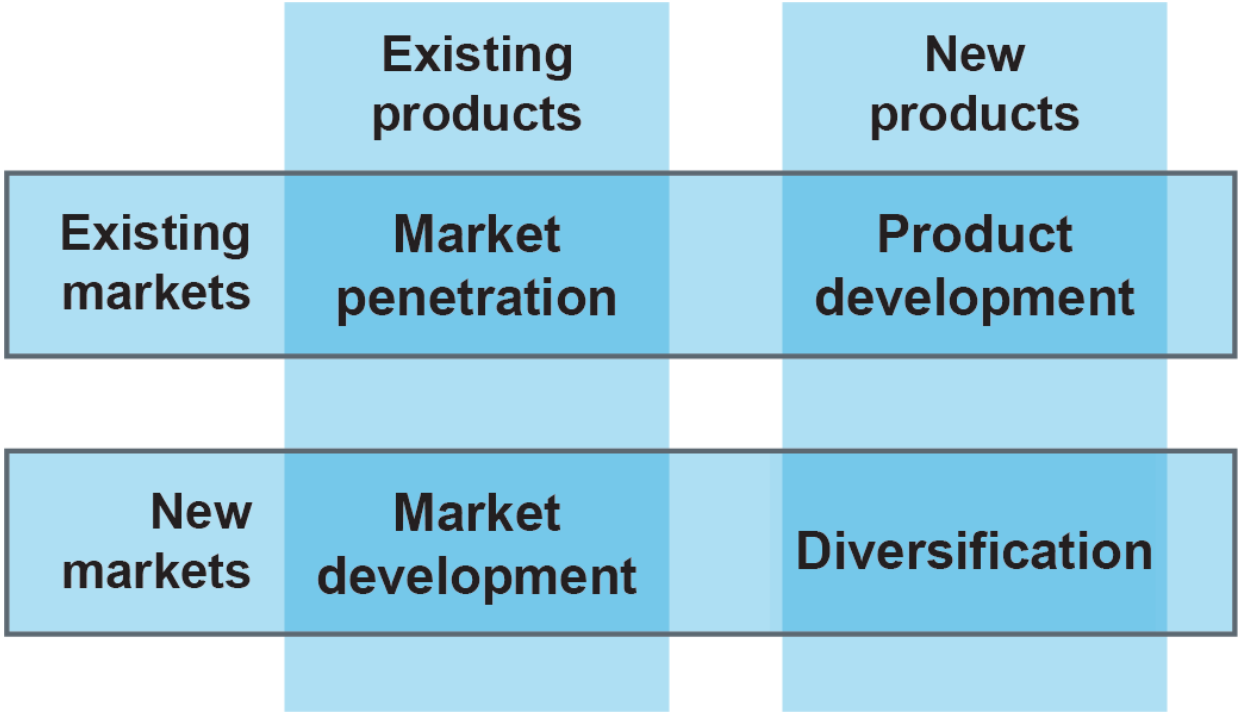


Horizontal and Vertical Integration

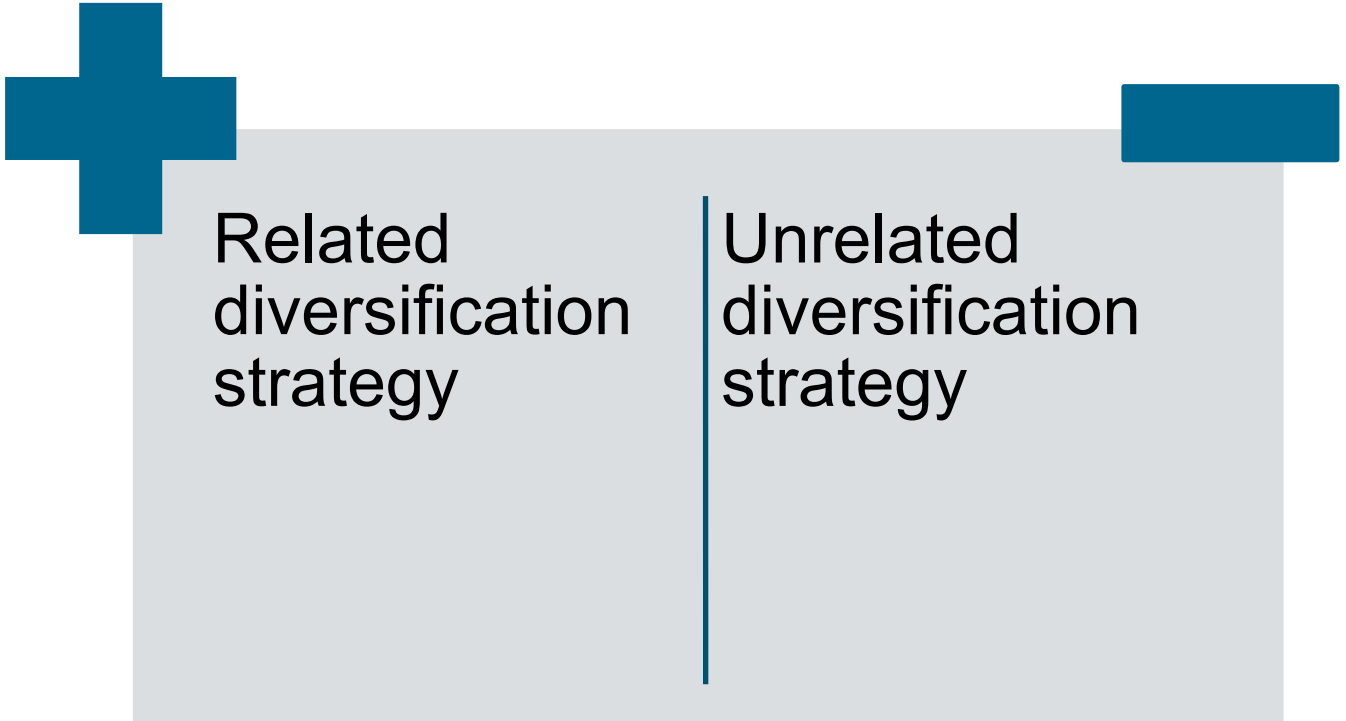
- The horizontally integrated firm “produces or sells similar products in various geographical locations.” *(Dictionary)*
- Vertical integration can be toward suppliers or customers.



Ansoff Product-Market Growth Matrix (Growth Strategies)

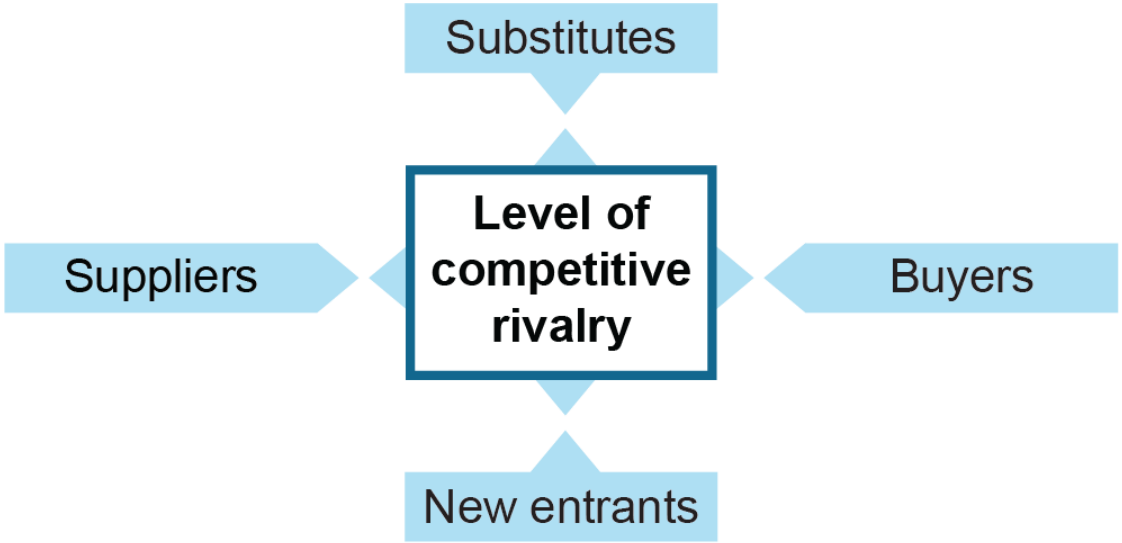


Assessing Diversification Opportunities

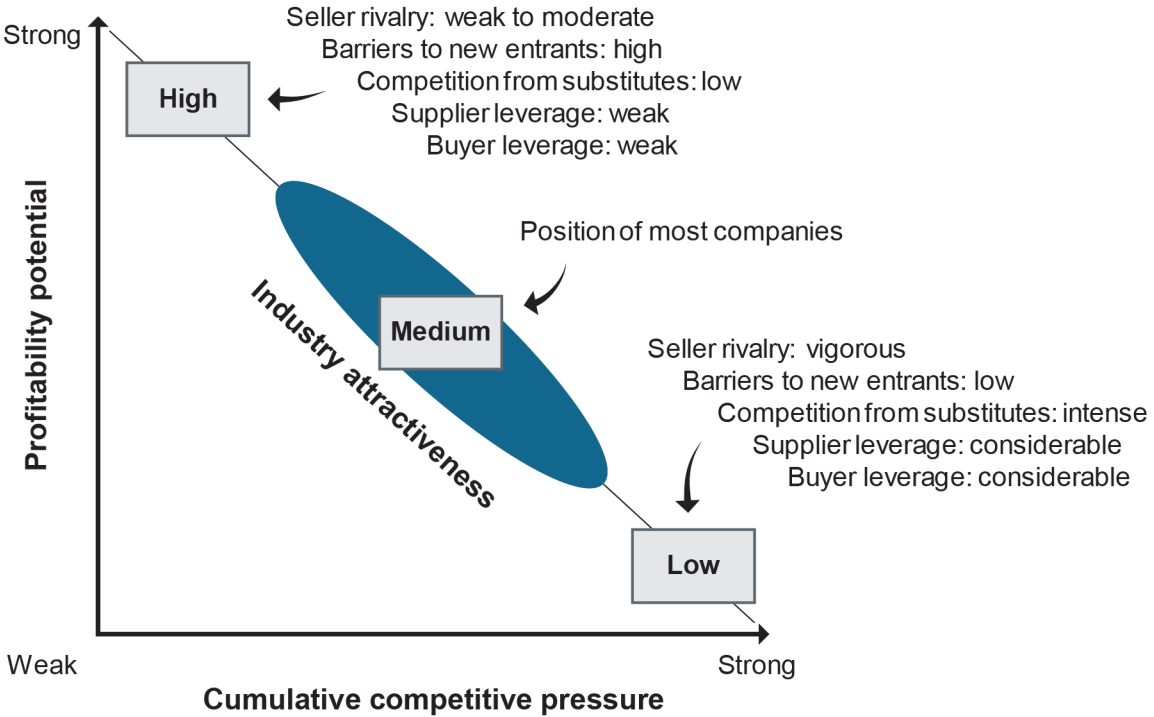


Five Forces Framework

- Rivalry among competitive sellers
- Potential new entrants
- Substitute products
- Bargaining power of suppliers and customers



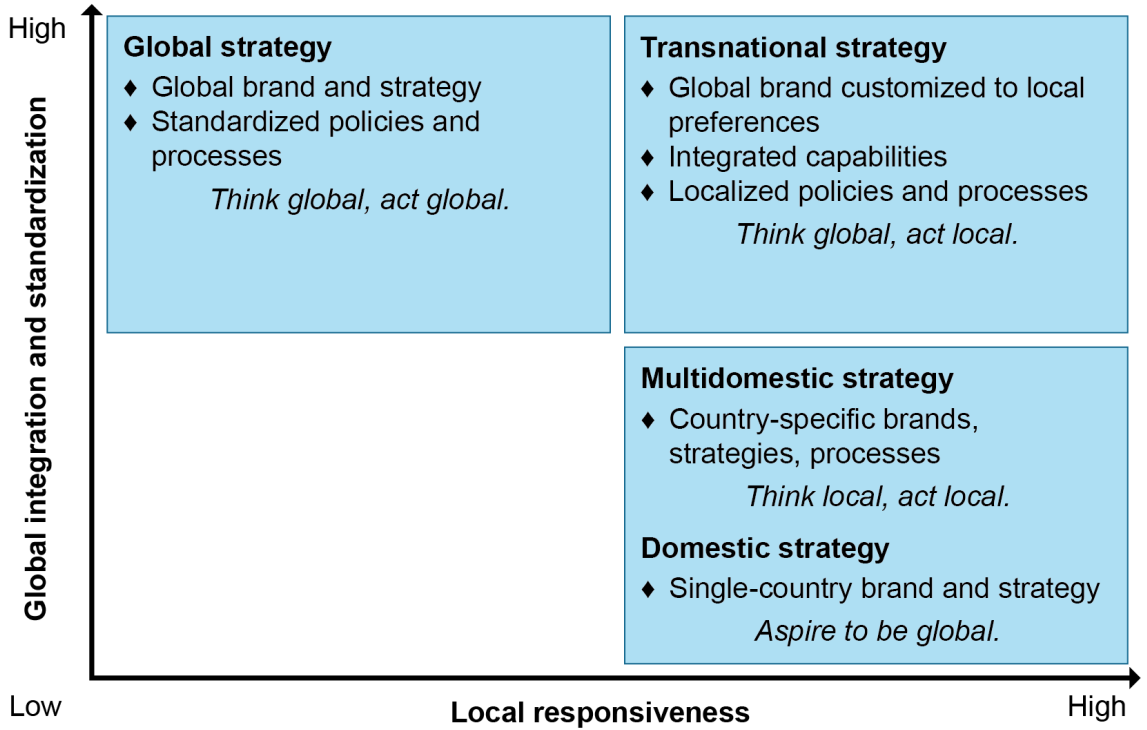
Industry Attractiveness



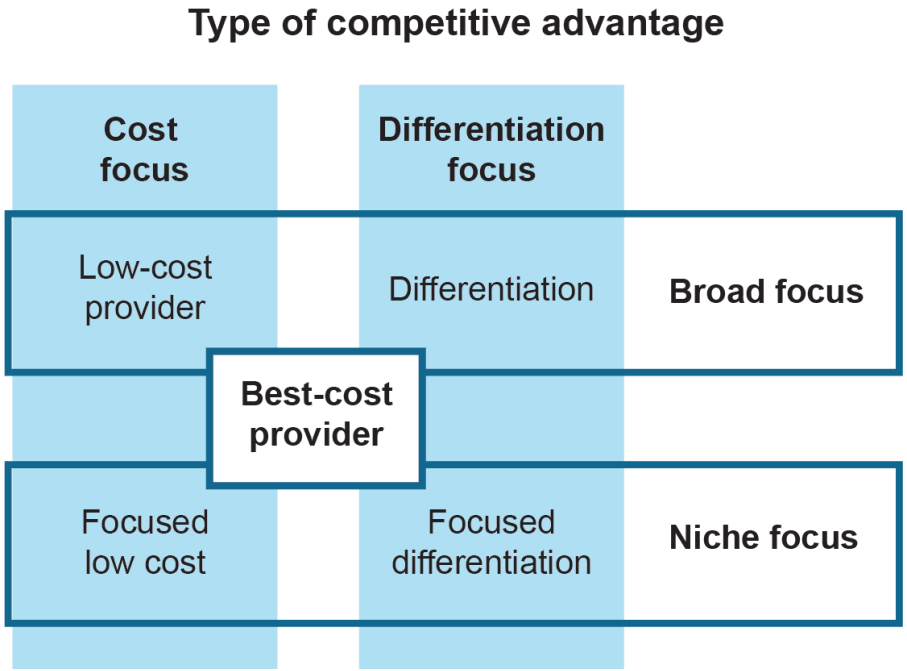
Global Expansion

- Provides access to new customers
- Lowers costs and improves competitive position
- Is a response to negative conditions in home country
- Profit sanctuaries (protected position in new market)
- Beachheads (enter hard markets first to gain experience)

International Strategies



Generic Organizational/Business Unit Strategies and Blue Ocean Strategies



Blue ocean strategies

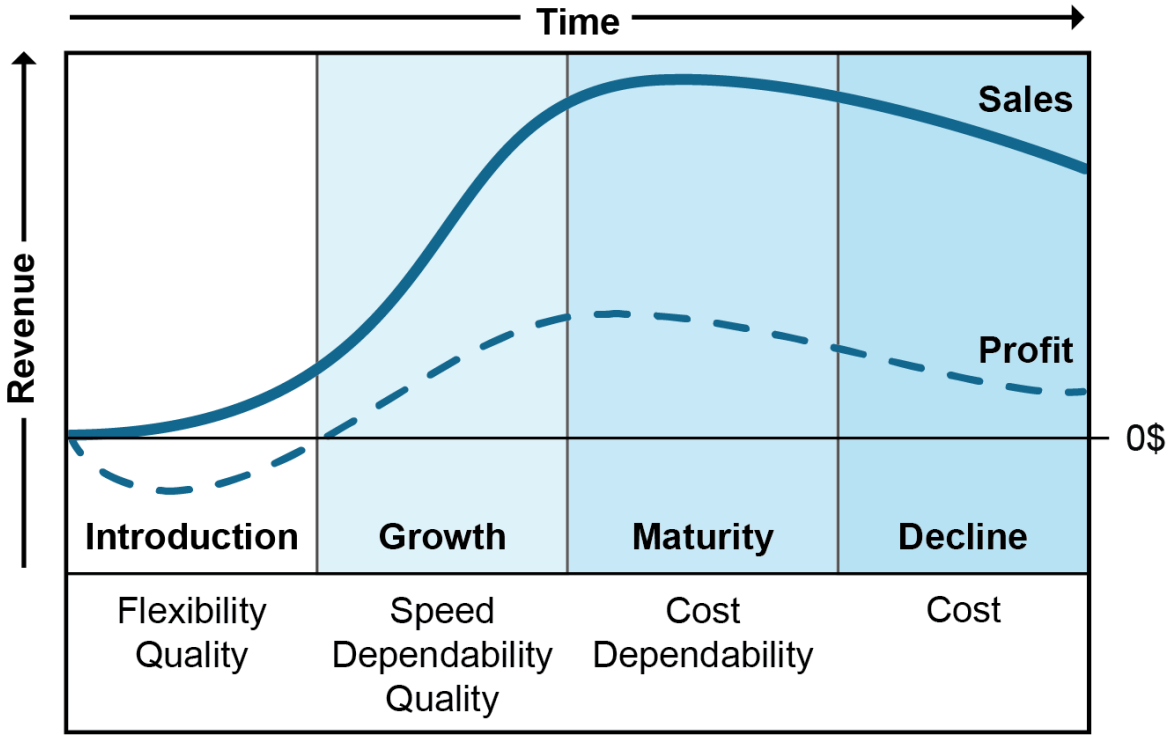
- Combined low cost and customer value strategy
- Challenge assumption: industry boundaries fixed
- Make competition irrelevant
- Canvas: what to keep/raise or eliminate to add value while controlling cost

Product-Service Portfolio Analysis Tools

- Rationalize or rebalance product-service portfolio by profitability
- Boston Consulting Group (BCG) Growth Share Matrix

	High Market Share	Low Market Share
High Growth	Stars: Invest further in these “stars” due to their high potential.	Question marks: If likely to become a “star,” reinvest; if not, divest.
Low Growth	Cash cows: Milk these lucrative products and get cash to reinvest.	Pet: Divest, reposition, or liquidate these “pets.”

Product Life-Cycle Analysis and Product Profiling



Order Qualifiers and Winners

- Order qualifiers
  - Minimum expectations (e.g., minimum level of quality)
  - But customer expectations are ever-increasing

- Order winners
  - Minimum requirements in some areas while exceeding the competition in others

Scanning the Market and Case Study

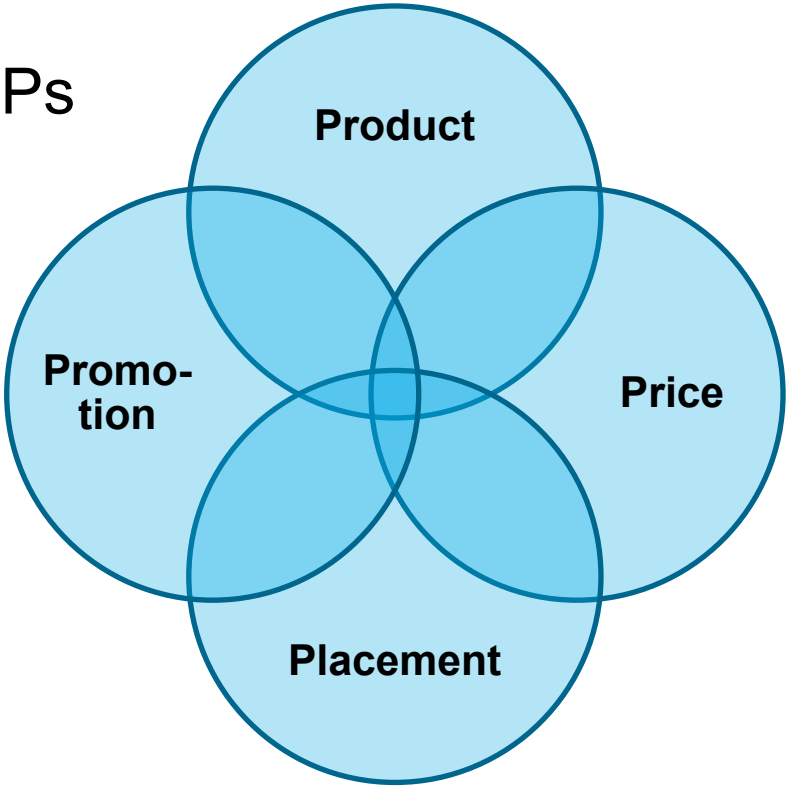
- Scan the market: PESTLE analysis (political, economic, social/ethical, technological, legislative, and environmental factors)

- Case study: Sample, Inc., a petroleum and chemical products organization with a focus on cash-to-cash cycle time improvement
  - Distributes, repackages, and manages private labels and generics in chemical products, automotive oil, and petroleum products
  - Distributor and global retailer customers with long relationships
  - Bulk purchases from suppliers

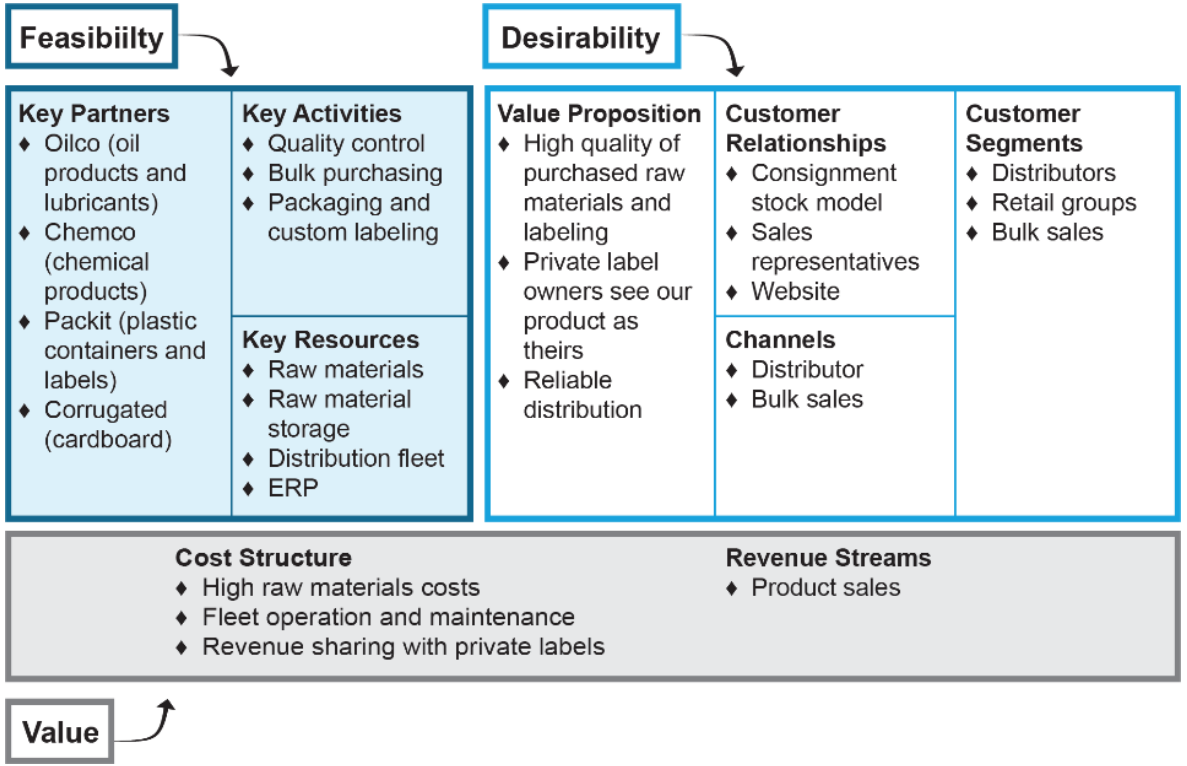
Analyzing Internal and External Factors

- Competitive profile matrix
- Business constraint analysis

- 4Ps



Business Model Operating Canvas



Internal and External Factors Evaluation Matrices

- Starting point for SWOT analysis
- Narrow down priorities

External Factors Evaluation Matrix for Case Study

	Critical Success Factor	Weight	Rating	Score	Result
Oppor-tunities	Expand private label network	0.1	4	0.4	1.14
	Emergency direct supplier shipments	0.2	1	0.2	
	Ability to ship from any DC	0.18	3	0.54	
Threats	High competition in generics	0.2	3	0.6	1.24
	Customer expectations (e.g., higher delivery frequency).	0.15	2	0.3	
	Oil price volatility	0.17	2	0.34	

Topic 3: Understand Organizational and Business Unit Strategies

SWOT Analysis (Sample, Inc., Example)	
Strengths	**Weaknesses**
• Dominant market share in private labels • Skilled and knowledgeable global staff • Committed suppliers for bulk purchasing • Well-developed supplier network • Owned fleet for local deliveries	• Very poor cash-to-cash cycle time • High raw material holding cost • Lack of collaboration with partners • Lack of sales and operations coordination
Opportunities	**Threats**
• Expand private label network • Emergency direct shipments to suppliers • Ability to ship from any DC • Milk runs to increase delivery frequency	• High competition in generics • Customers want high delivery frequency • Oil price volatility • Electric cars need fewer of our products

Supply Chain Strategy Development

Supply chain design prerequisite showing how to

- Synthesize a network from independent parts
- Create synergy by leveraging leadership and interorganizational relationship management
- Synchronize supply and demand.

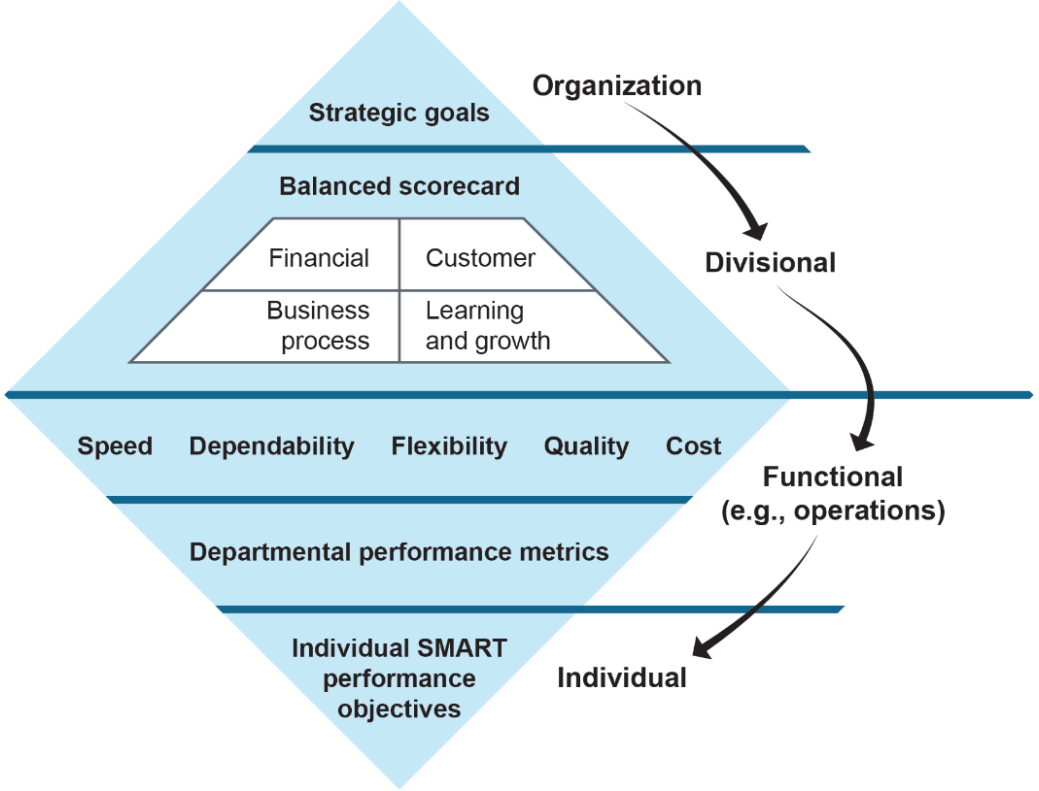
1. Understand as-is, scan market.
2. Describe to-be state.
3. Describe SC purpose.
4. Set goals and objectives for reliability, etc.
5. Specify priorities, parity areas.
6. Validate alignment.
7. Make implementation plan.
8. Manage risk.
9. Revise.

Supply Chain Strategy Maturity Components

- Supply chain customer service goals and competitive attributes
- Sales channels
- Value chain
- Operating model
- Asset footprint
  - Global model
  - Regional model
  - Country model

Integrated Measurement Model

- Carries strategic goals down into strategies and tactics of the organization
- KPI tree



Strategy Maps and Key Performance Indicators (KPIs)

Kaplan and Norton's Strategy Maps

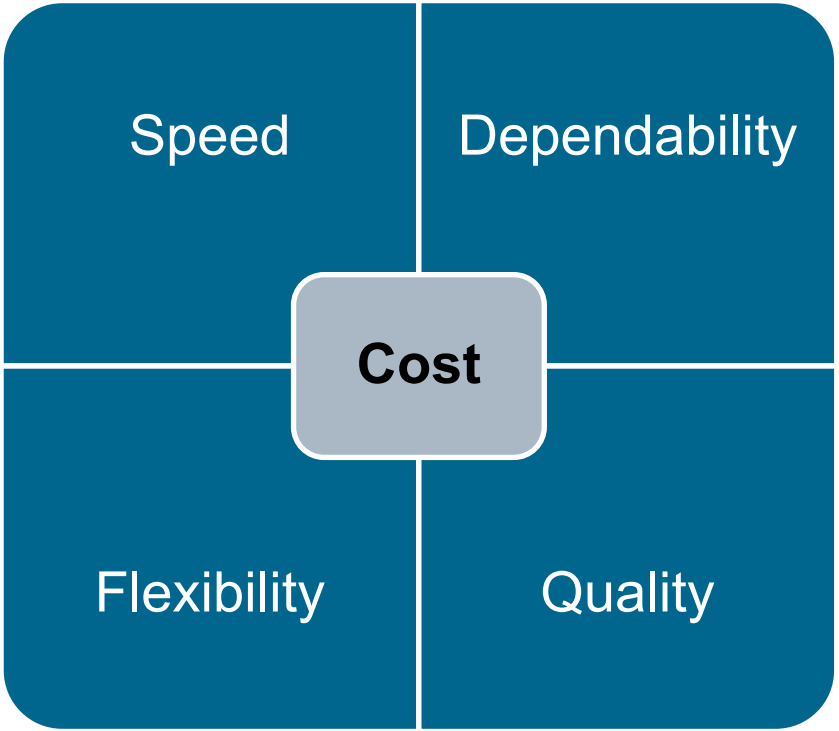
- Extension of balanced scorecard.
- Single page.
- Define mission, vision, and values.
- Define learning and growth, then internal business, then customer, then financial.
- Set priorities and goals.
- Interconnect processes.

KPIs

- Use a KPI tree logical framework (e.g., SCOR DS).
- Metrics should have a source of stable and accurate data with few outliers.
- The balanced scorecard can be used to set strategic KPIs.

Supply Chain Strategy Types

Describe strategy in terms of what supply chain services will be order qualifiers versus order winners.



SCOR DS Resilience Performance Attributes

Performance Attribute	Definition
Reliability (RL)	"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 delivering a product on time, in the right quantity, and at the right quality level."
Responsiveness (RS)	"The speed at which tasks are performed and the speed at which a supply chain provides products to the customer. Examples include cycle-time metrics."
Agility (AG)	"The ability to respond to external influences and marketplace changes to gain or maintain a competitive advantage."

SCOR DS Economic Performance Attributes

Performance Attribute	Definition
Costs (CO)	"The cost of operating the supply chain processes. This includes labor costs, material costs, and management and transportation costs."
Profit (PR)	"The Profit attribute describes the financial benefit realized when the revenue generated from the business activity exceeds the expenses, costs, and taxes involved in sustaining the activity."
Assets (AM)	"The ability to efficiently utilize assets. Assets' strategies in a supply chain include inventory reduction and insourcing rather than outsourcing."

SCOR DS Sustainability Performance Attributes

Performance Attribute	Definition
Environmental (EV)	"The Environmental attribute describes the ability to operate the supply chain with minimal environmental impact, including materials, water, and energy."
Social (SC)	"The Social attribute describes the ability to operate the supply chain aligned with the organization's social values, including diversity and inclusion, and training metrics."

Other Ways to Set Supply Chain Strategy

- Innovation
- Customer experience
- Quality
- Cost
- Supply chain integration strategy
- Resilient supply chain strategy
- Project-driven supply chain strategy

The Case for Transformation

Key Enablers of Transformation

Transformation requires two key enablers:

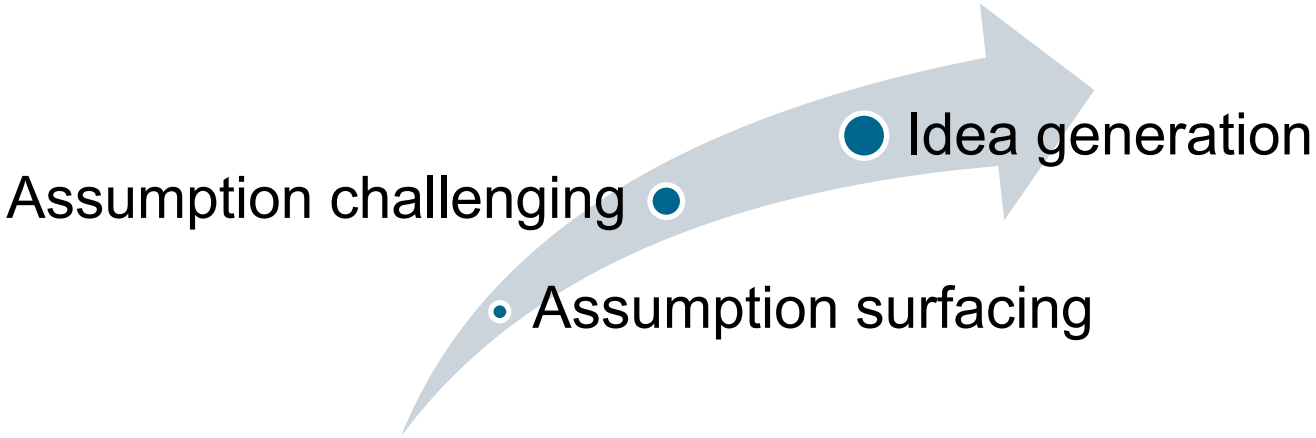
- Begin with the end in mind (or find your true north).
- Reverse-engineer capabilities.

What Is the Problem We Are Trying to Solve?

- Defining the problem to solve is a critical step in transformation.
- It's important not to group multiple problems together.

Assumption Surfacing/Challenging and Idea Generation

- Assumptions: Invisible business rules that persist even after invalid.
- For example, assumption that a single supply chain will suffice can result in ideas on fixing it, not seeing need for several supply chains.

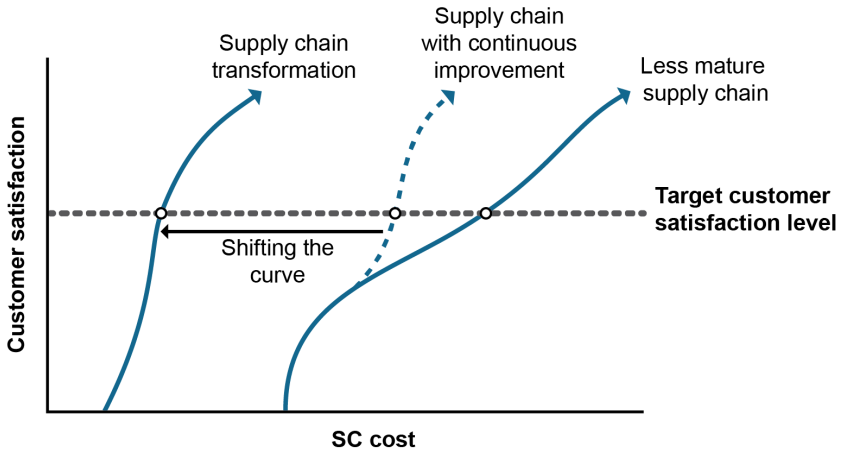


Determine Goals, What Needs to Change, and Impact

- Given a problem:
  - Define goals.
  - Determine what needs to change.
  - Get a sense of potential impact of change.
- Goals are what solution should provide.

- Example:
  - Problem: Our shipping takes too long and is too expensive for our customers.
  - Solution: E-commerce platform and fulfillment center restructuring to enable goal—offering second-day free shipping, which should fix problem.

Why Do We Solve Problems Through Transformation?



Source: Adapted from David B. Kurz and Muragan Anandarajan, *Digital Supply Chain Leadership*.

- Breakthrough improvement realized by abandoning old mentalities and learning new capabilities.
  - Current business model fit for future
  - Entirely new markets and capabilities

Transformation Process Road Map

1. Create the rationale and urgency for supply chain transformation.
2. Prepare for supply chain transformation.
3. Execute the supply chain transformation.
4. Review the supply chain transformation.

Supply Chain Transformation Leadership Skills

Exercise Power Wisely

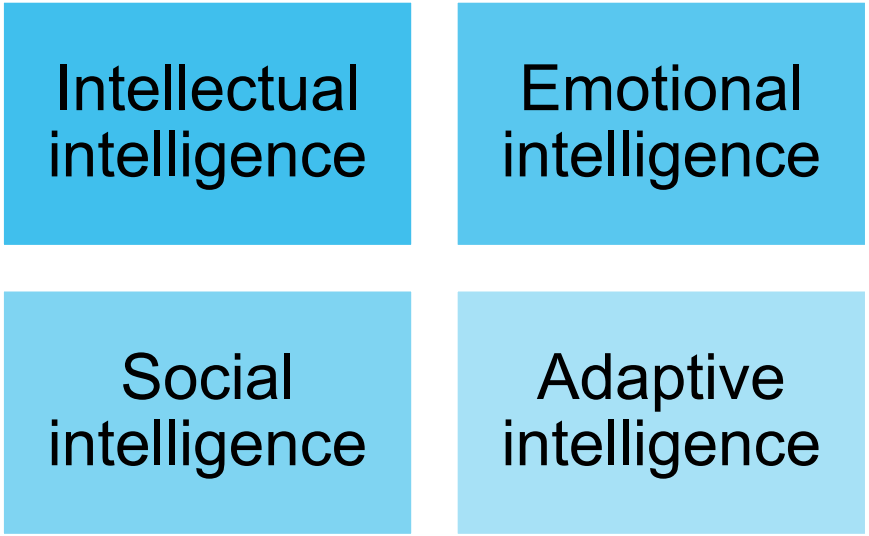
- Use positive power dynamics.
  - Collaborating, coordinating, negotiating, inspiring, appreciating, rewarding
- Avoid negative tactics.
  - Complaining, demanding, bullying, manipulating, contesting

Leadership Skills

- Communication
- Integrity and political awareness
- Consulting and collaboration
- Critical thinking, business sense, negotiation, and analytical skills
- Project, change, and conflict management; negotiation
- “Fail fast, learn fast” and tenacity

Transformational Leadership Style

- Transformational leadership: visionary (individual decision making and thinking)
- Versus other styles
  - Coaching (consensus and thinking)
  - Traditional (consensus and doing)



Understand Organizational Culture to Enable Transformation: Culture Assessment Tool

A great culture can be a significant competitive advantage.

	Internally Focused	Externally Focused
Indirect Control	Team focused culture that is good at cooperating in harmony, being internally cohesive, and creating synergy. %: _____	Entrepreneurial culture that innovates well, copes well with change, is flexible, and promotes growth. %: _____
Direct Control	Hierarchical culture that promotes stability and control by promoting standardized systems and measures. %: _____	Results-oriented culture that operates rationally by setting objectives and channeling energy into action. %: _____

Evangelist (Champion)

The evangelist should have

- Leadership skills
- Transformational leadership

The best candidate:

- Financial understanding and accountability
- Integrated measurement model mindset
- Organizational learning mindset
- Job experience in different positions
- Project management
- Teaching/coaching

Active Executive Sponsor

- Accountable for success or failure
- Reviews plans and recommended changes
- Facilitates transformation
- Removes blockers
- Backs up evangelist in selling the transformation
- Prepares the organization for change

Program Director and Design Team

- The program director may be the evangelist or another individual.
- The design team:
  - Analyzes supply chain gaps.
  - Makes change recommendations.

The best members will have:

- Problem-solving experience.
- Task discipline.
- Compatible personalities.
- Access to data.

CTSC

CERTIFIED IN TRANSFORMATION FOR SUPPLY CHAIN

SECTION B: VALUE PROPOSITION, METHODOLOGIES, AND ORGANIZATIONAL DESIGN

APICS

ascm

Section B Learning Objectives

- Develop supply chain transformation value propositions.
- Explore and recommend research models, frameworks, and benchmarking tools.
- Explore and recommend cost and service optimization road maps.
- Develop a business context summary.
- Understand organizational design.

Customer Value Propositions

- Low-cost strategy: Lowest price, reliably, on time, in full…
- Customer with high demand variability: Agile supply chain, timely response from flexible capacity.
- Project-driven customers: Deliver to site neither early nor late, in full, with full compliance, ETO with acceptable lead time.
- Customer-supplier long-term collaboration: Mutual gain from consistent quality, pricing, delivery timing, supply.
- Customers needing innovative or emergency capacity: Rapidly develop new types of capacity; propose and design innovation.

Value Propositions for Suppliers and Others

Supplier Value Propositions

- Take time to understand supplier expectations and their operating models for lasting savings.
- Value proposition: Commit to judging each supplier on desired core competencies.

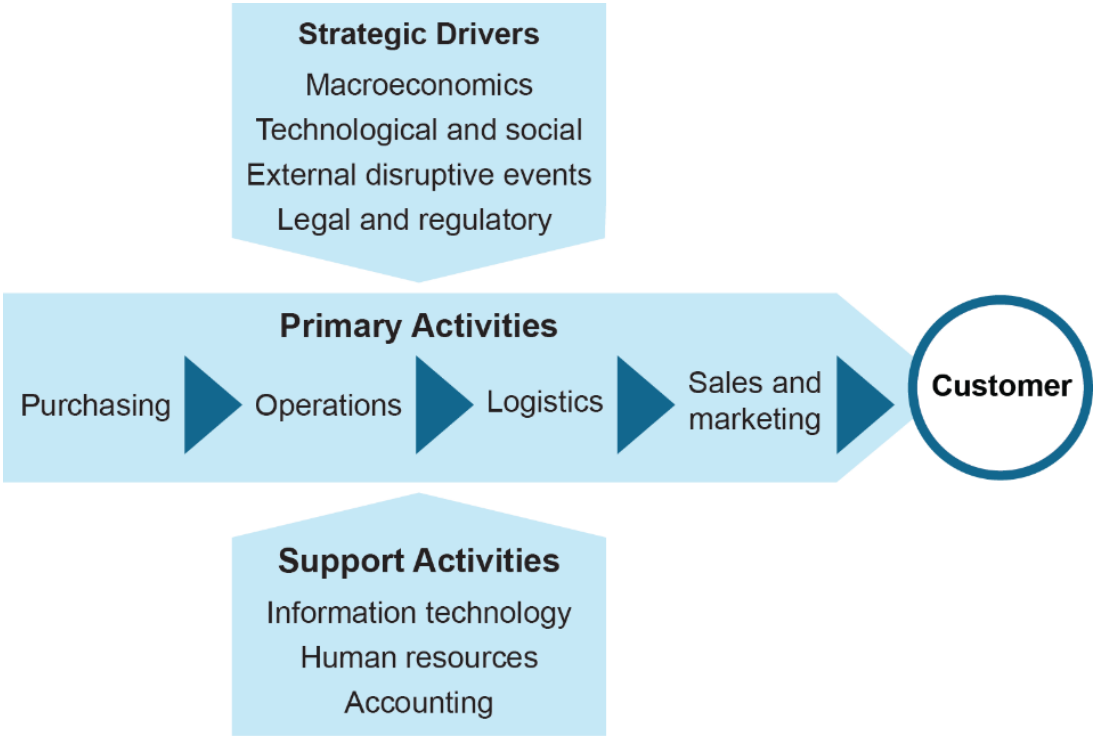
Other Value Propositions

- For example, SCOR DS: Transform linear supply chains into orchestrated supply chains (network of never-ending processes)

Source: ASCM, "Introduction to Supply Chain Management Using SCOR." Available from SCOR-DS website. Used with permission.

Value Chain Analysis

- Reduce operating costs.
- Increase revenues.
- Increase innovation.
- Improve long-term equity.



Understanding Your Supply Chain Network and Nodes

- Prior to network optimization, understand current state of supply chain network and nodes.
- Can help rationalize locations.

SCOR Professional Training: Participant Workbook, Version 2.5. Chicago: ACSM, 2020.

Interconnectivity

- Created by supply chain partners' supply chain information systems technologies (ERP, APS, WMS, TMS, POS, IOT, etc.).
- Better interconnectivity benefits:
  - Each party in chain will discover what data grant real benefits.
  - Automate product design feedback loop.
  - Resources can be better used.
  - Eliminate unwanted redundancy.

Balanced Scorecard

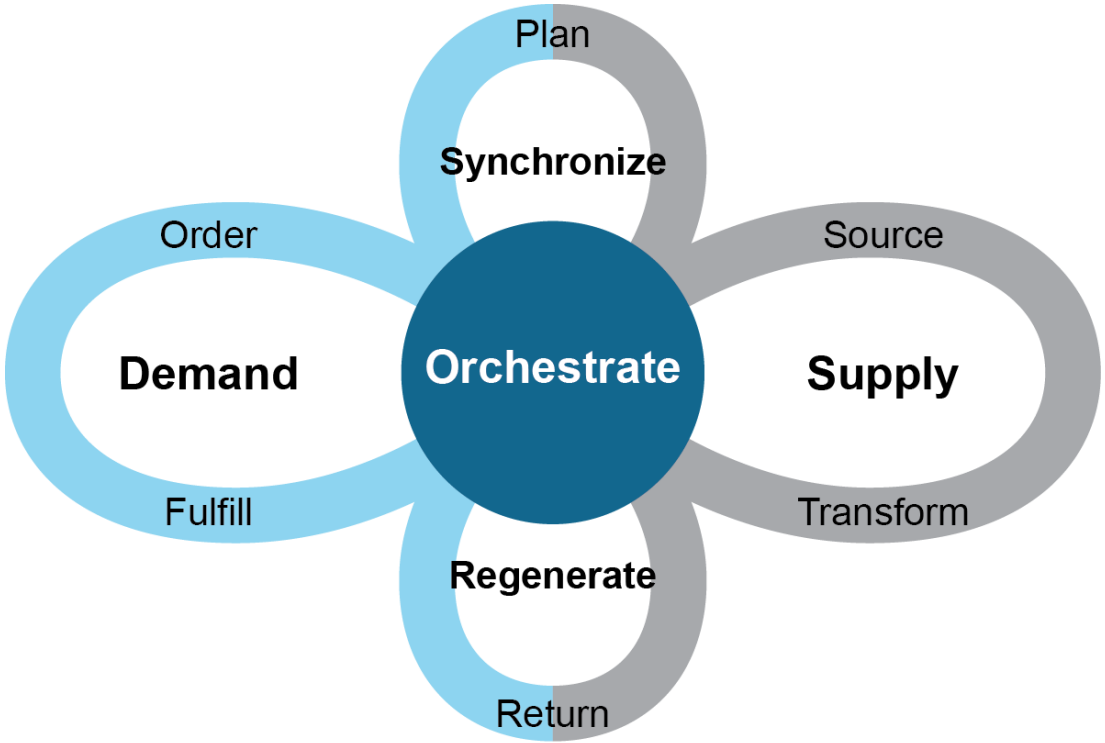
Goal	Measure	Target	Actual
Customer Perspective			
Meet customer delivery promises.	Percentage of orders delivered in full to customer	99%	98%
Meet customer quality expectations.	Customer order perfect condition	99%	97%
Business Process Perspective			
Improve responsiveness to distributors.	Order fulfillment cycle time	2 days	6 days
Assuring quality failure condition of returned items.	Perfect return order fulfillment	95%	75%

Balanced Scorecard, continued

Goal	Measure	Target	Actual
Financial Perspective			
Streamline cash availability.	Cash-to-cash cycle time	0 days	52 days
Maximize supply chain efficiency.	Total supply chain management cost	<8.0% of revenue	9.1% of revenue
Innovation and Learning Perspective			
Quickly react to demand increases/decreases.	Supply chain agility	30 days	60 days
Keep staff highly trained.	Training	80 hours	50 hours

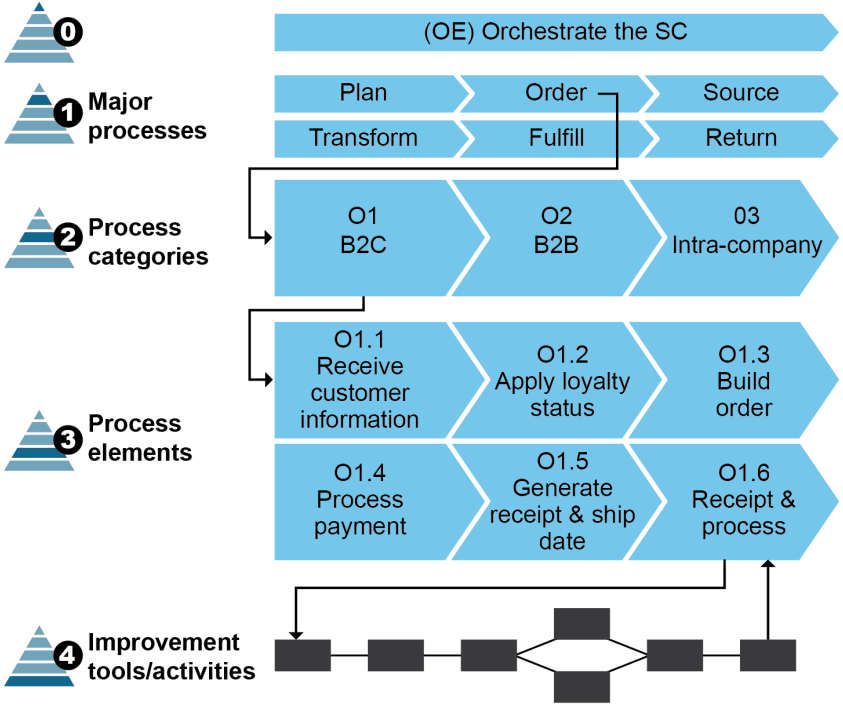
SCOR DS

- SCOR DS: Seven major management processes.
- Goal: Design supply chains that focus on satisfying customer demand.



Source: Copyright ASCM. Used with permission.

SCOR DS, continued



Defines the operations strategy; process capabilities are set.

Defines the configuration of individual processes. The ability to execute is set. Focus is on process, inputs/outputs, skills, performance, best practices, and capabilities.

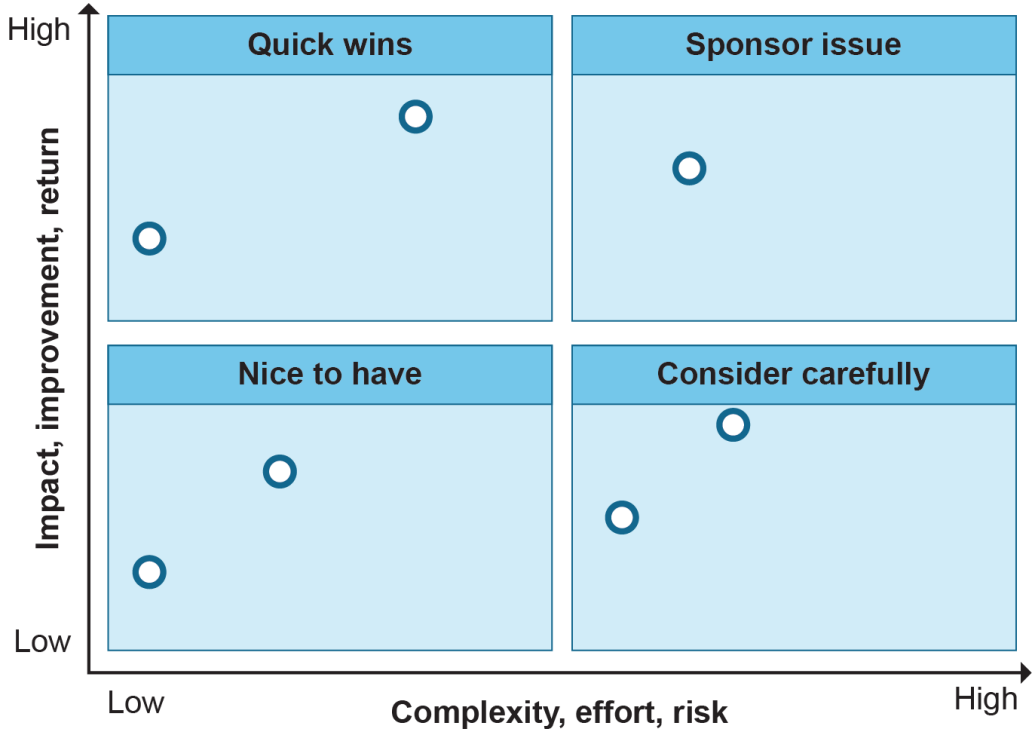
Use of kaizen, lean, TQM, six sigma, benchmarking.

Source: SCOR DS. Copyright ASCM. Used with permission.

- Performance: levels 1 to 3 in KPI tree
- Processes: standard descriptions for as-is and to-be
- Practices: unique configuration
- People: skills and experiences

SCOR DS Prioritization Matrix for Selecting Practices

- Quick wins: easier but have high ROI (low-hanging fruit)
- Sponsor issues: core of transformation
- Nice to have or consider carefully: avoid unless deemed necessary



SCOR DS Performance Metrics

Resilience

Reliability

- Perfect Customer Order Fulfillment
- Perfect Supplier Order Fulfillment
- Perfect Return Order Fulfillment

Responsiveness

- Customer Order Fulfillment Cycle Time

Agility

- Supply Chain Agility

Economic

Costs

- Total Supply Chain Management Cost
- Cost of Goods Sold (COGS)

Profit

- Earnings Before Interest and Taxes (EBIT) as a Percent of Revenue
- Effective Tax Rate

Assets

- Cash-to-Cash Cycle Time
- Return on Fixed Assets
- Return on Working Capital

Sustainability

Environmental

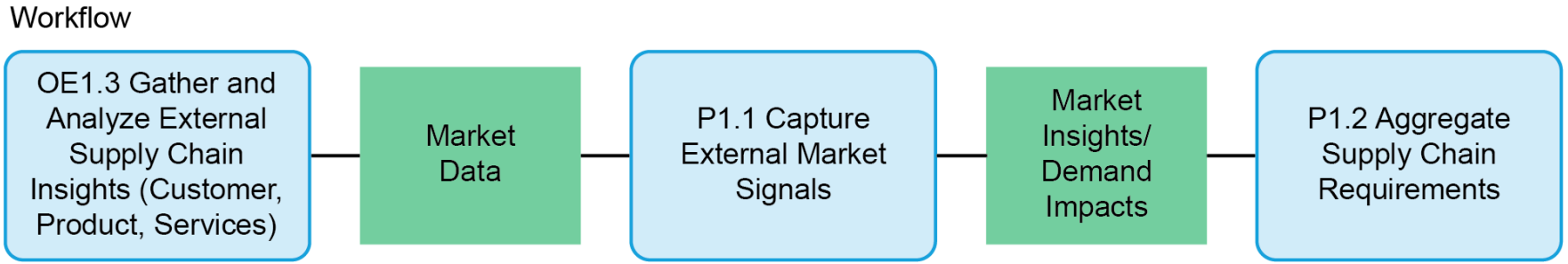
- Materials Used
- Energy Consumed
- Water Consumed
- GHG Emissions
- Waste Generated

Social

- Diversity and Inclusion
- Wage Level
- Training

Learning How to Use SCOR DS for Transformations

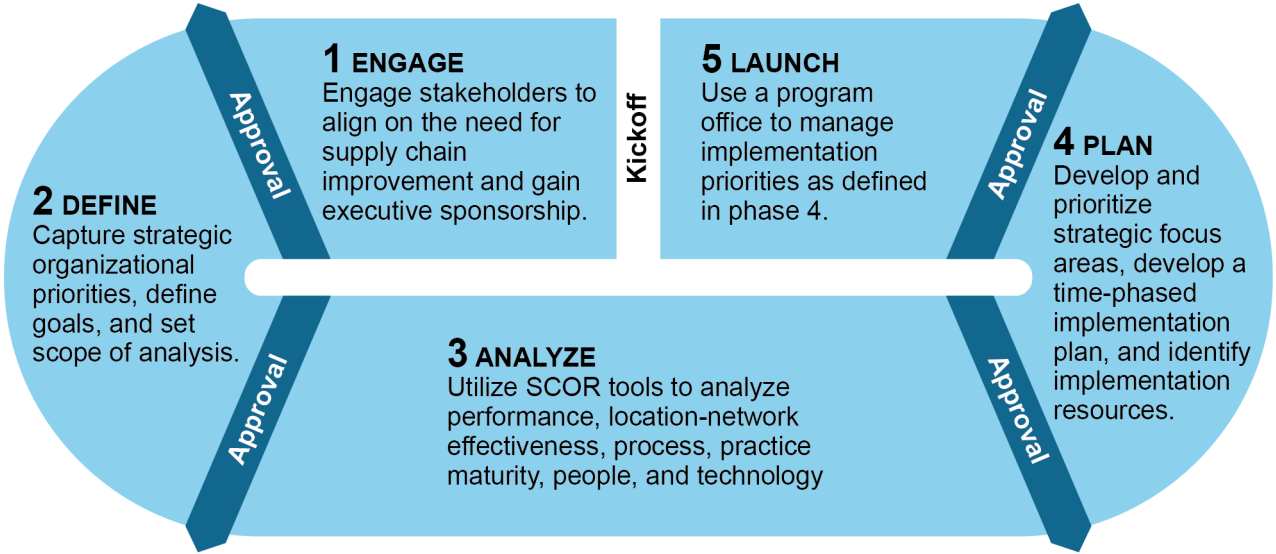
- Learn more at SCOR DS website (www.scor.ascm.org) and take tutorial.
- Study and adapt standard process workflows to needs.



Source: ASCM, "P1.1 Capture External Market Signals." Available from SCOR DS web site. Used with permission.

SCOR Racetrack

- Model for defining major phases of a transformation using SCOR DS
- Marathon
- Step 1: 6 days
- Step 2: 3 days
- Step 3: 12 days
- Step 4: 6 days
- Step 5: Proposal



Adapted from ASCM.

Benchmarking Tools: SCORmark and APQC

- SCORmark: Compare against 1,000 organizations and 2,000 supply chains.
- APQC supply chain planning benchmarks.

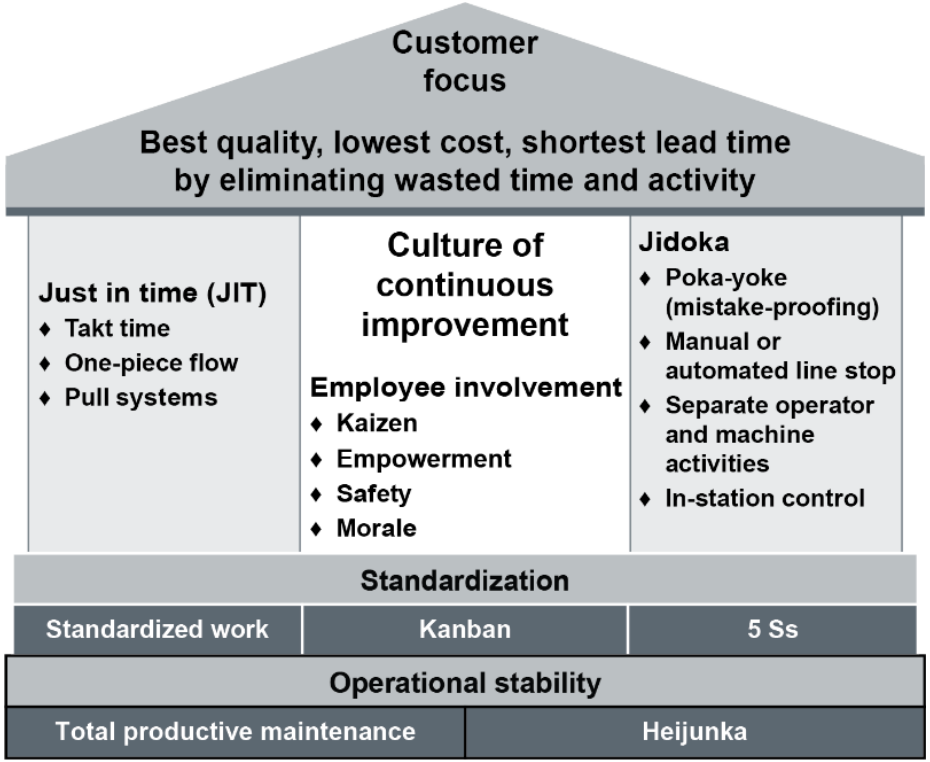
Attribute	Metrics	Target Performance	Your Organization	Parity (50%)	Advantage (70%)	Superior (90%)	Gap to Target
Reliability	Perfect customer order fulfillment	Advantage	70%	X 77%	85%	93%	15%
Responsiveness	Customer order fulfillment cycle time	Parity	6	9.1	7 X	4	3.1
Agility	Supply chain agility, strategic (days)	Parity	35	X 30	25	20	-5
Cost	Total supply chain management cost (% of revenue)	Advantage	8%	8.70% X	5%	2.40%	-3%
Profitability	EBIT (as a % of revenue)	Parity	16%	14%	X 17%	20%	2%
Assets	Cash-to-cash cycle time (days)	Superior	52	55.4 X	30.5	0	-52
Environmental	Waste generated (metric tons)	Parity	14.3	X 13.4	11.2	9.2	-0.9
Social	Training (hours per year)	Advantage	80	X 82.1	91.5	100.1	11.5

X Your organization

Source: Adapted from SCOR-Professional Training. Used with permission. Values are for example only.

Topic 3: Explore Cost and Service Optimization Road Maps

Lean



Source: APICS Lean Enterprise Workshop Series.

House of Lean Roof and Center

Roof: Lean Goals

- Focus on the customer.
- Produce the best quality.
- Value defined by internal/ external customers.
- Eliminate the eight wastes.
- Listen to workers/redesign or eliminate processes.

Center: Involvement/Improvement

- Culture of continuous improvement with a high degree of respect for people.
- Workers: valued assets.
  - Train.
  - Be fair.
  - Empower.

House of Lean Foundation

Standardization

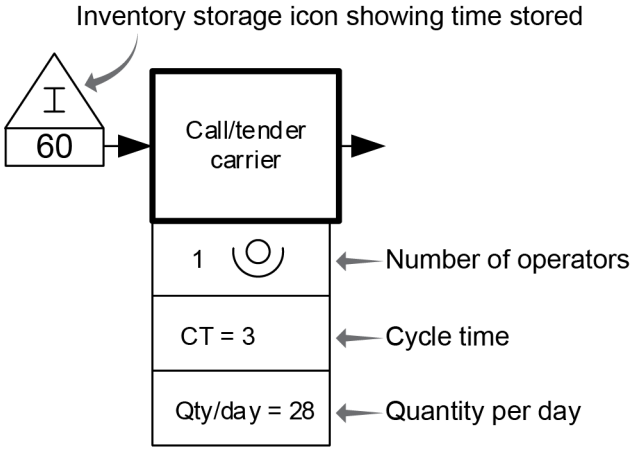
- Leveling
- Product mix
- Standardized work
- Reducing variability
- Not overburdening
- Kaizen

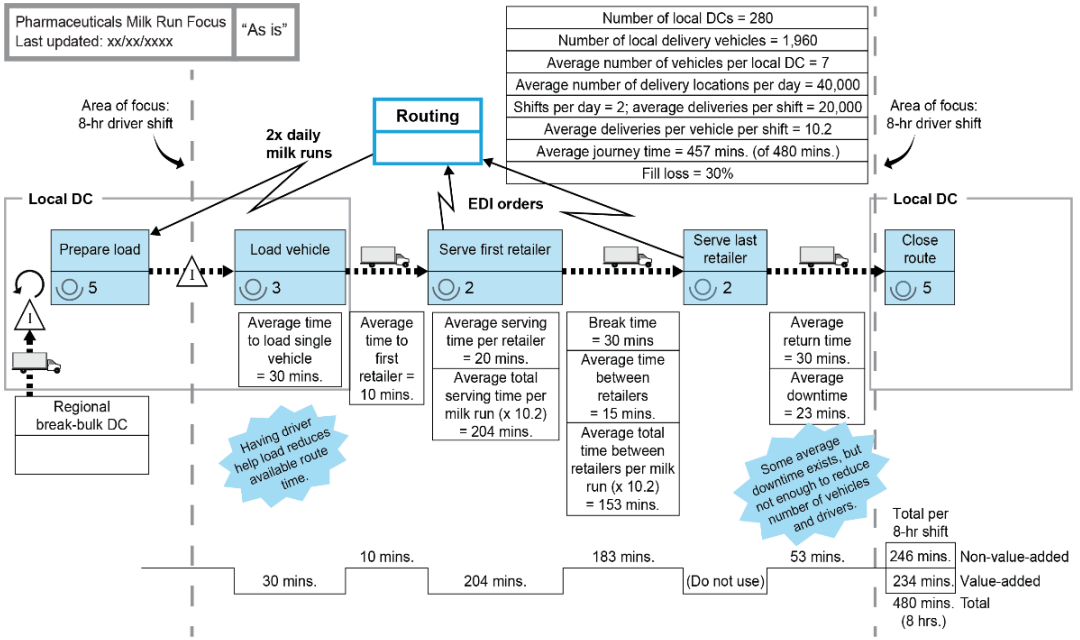
Stability

- Total productive maintenance (TPM): operator-oriented preventive maintenance. Preventive is the key (e.g., prevent costly line shutdowns).
- Five Ss:
  - Sort, simplify, scrub, standardize, and sustain

Value Stream Mapping (As-Is)

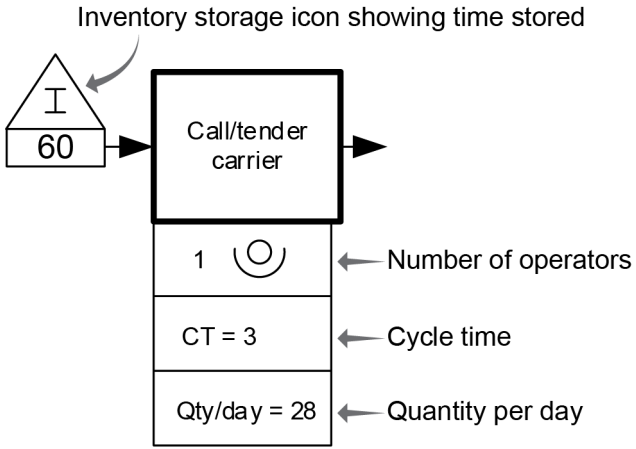
- Value stream mapping visualizes value stream.
- Value-added versus non-value-added time.

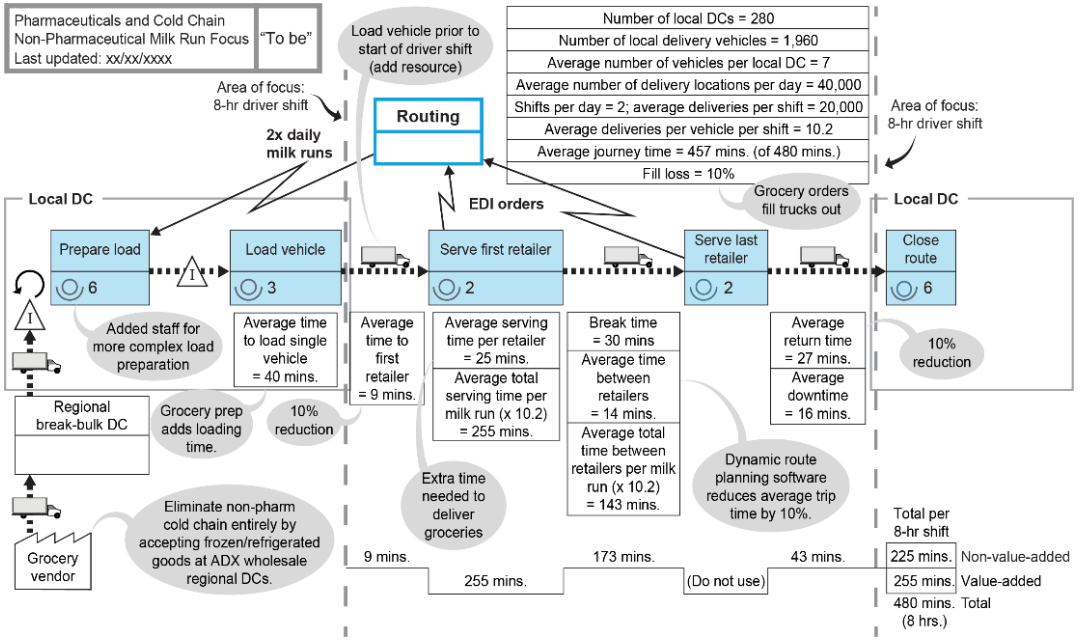




Value Stream Mapping (To-Be)

- Improved milk runs example





Pull Systems and Visual Management

Pull Systems

- Demand matched to supply: make only what customers use
- Asynchronous:
  - No timing associated with product routing
  - Replenishes part just supplied
- Synchronous: controlling systemwide velocity of process flow (takt time)

Visual Management

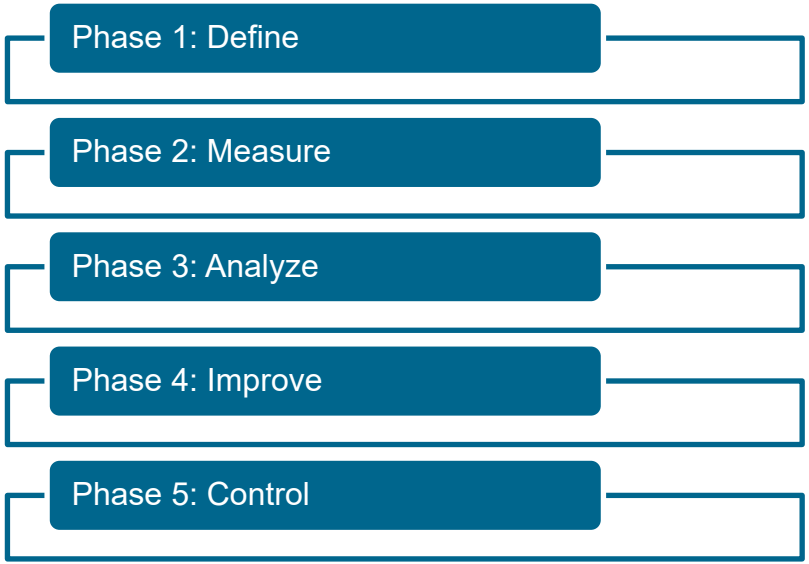
- Visual workplace
- Visual management triangle
- Clean workplace
- Visual system
- Visual communication
- Visual workplace reporting

Six Sigma

Objectives and Concepts

- Objectives: high customer satisfaction and low product return rates.
- Begin with customer's needs in mind.
- Variation: cause of defects.
- Output of any process is a function of its inputs.

DMAIC



Theory of Constraints (TOC)

- Any system: at least one element that limits maximum output
- Drum, buffer, rope:
  - Drum—pace set
  - Buffer—time or material
  - Rope—scheduler for pre-constraint processes that pulls orders through system

Five-step TOC process:

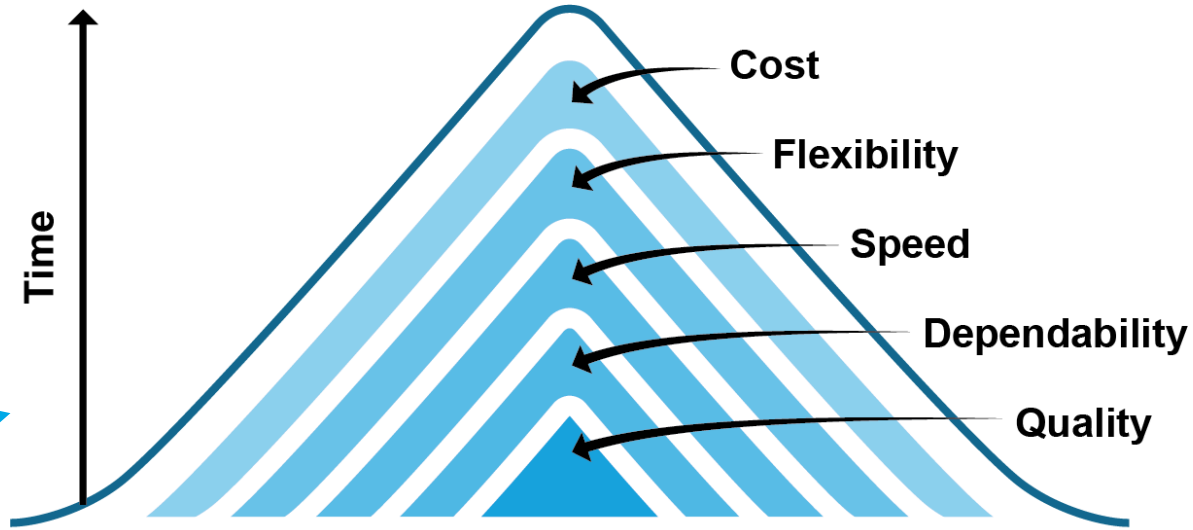
1. Identify the constraint.
2. Exploit the constraint.
3. Subordinate other processes to the constraint.
4. Elevate the constraint.
5. Repeat the cycle.

Total Quality Management

- Management approach to long-term success through customer satisfaction
- Participation of all members of organization
- Improving processes, goods, services, and the culture
- Quality: ideal, product-based, user-based, manufacturing-based, value-based; defined by customer requirements and perceptions

Core Concepts of TQM

- Primary objective: Ensure organization's long-term success through customer satisfaction.
- Sand cone theory.



Root Cause Analysis

- "Analytical methods to determine the core problem(s) of an organization, process, product, market, and so forth." (*Dictionary*)
- Steps in root cause analysis:
  1. Describe the problem (including internal and external data analysis).
  2. Establish cause categories.
  3. Identify specific potential causes.
  4. Prioritize the causes.
- Use with 5 Whys: Ask "why" five times.

Agile Supply Chains

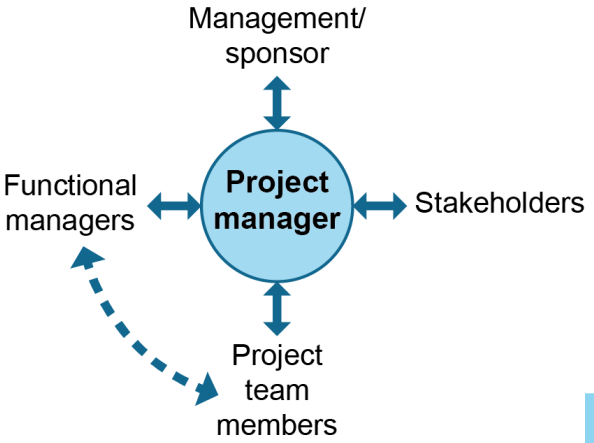
Agility Is a Priority if…	Collaboration Needed	Agile Logistics and Manufacturing
▪ Demand and product requirements are unstable and unpredictable. ▪ Product life cycles are short. ▪ Obsolescence is likely. ▪ Customers expect the latest product.	▪ Data sharing between echelons moves push-pull frontier back. ▪ Trigger by automated POS data sharing. ▪ Multi-echelon inventory visibility.	▪ Minimal finished goods. ▪ Minimal lead times. ▪ Direct factory delivery. ▪ Cross-echelon plans. ▪ High WIP inventory due to postponement. ▪ Finalization in later echelons.

Portfolio, Program, and Project Management

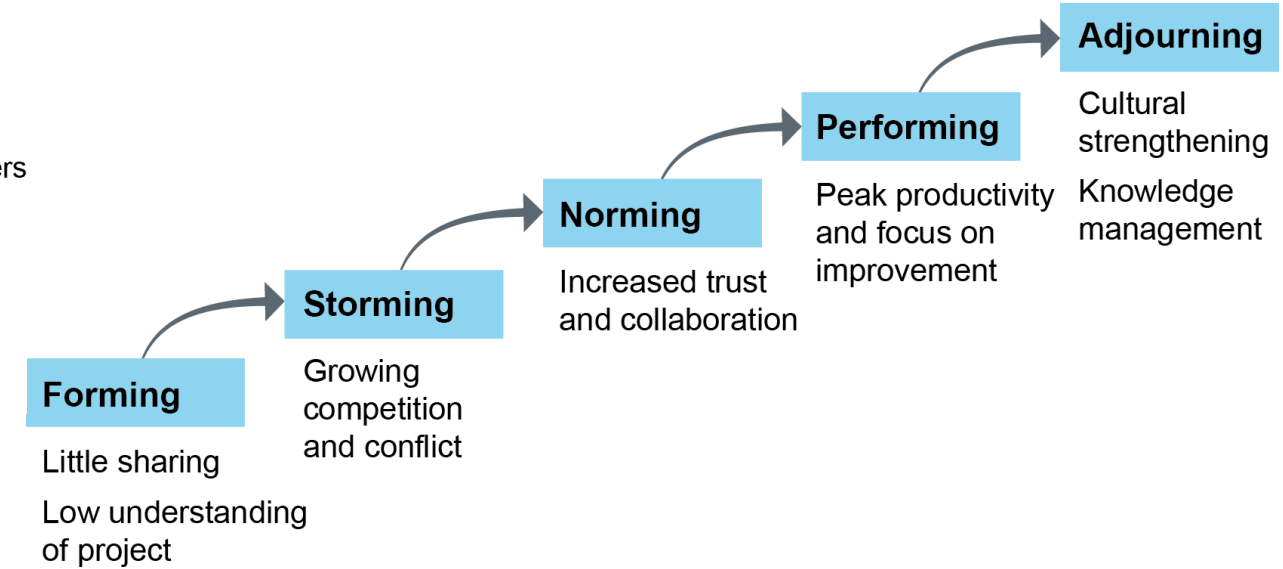
- Portfolio management
  - Program management
    - Project management
- Portfolio: collection of programs, projects, and operations managed together to meet strategic goals

- Types
  - Traditional (predictive)
  - Agile (requirements in flux late)
- Regardless of type, all projects need
  - A charter
  - Clear assignment of responsibilities.

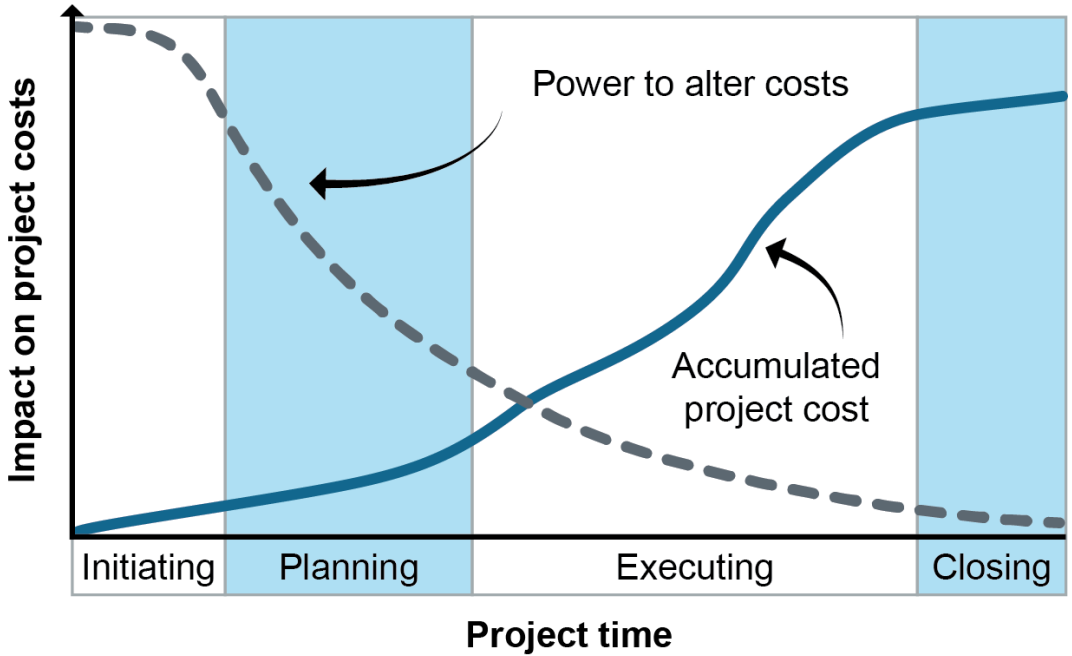
Project Management: Communication and Tuckman's Ladder



Communicate with team and functional area managers.



Traditional Project Management



Critical project baselines:

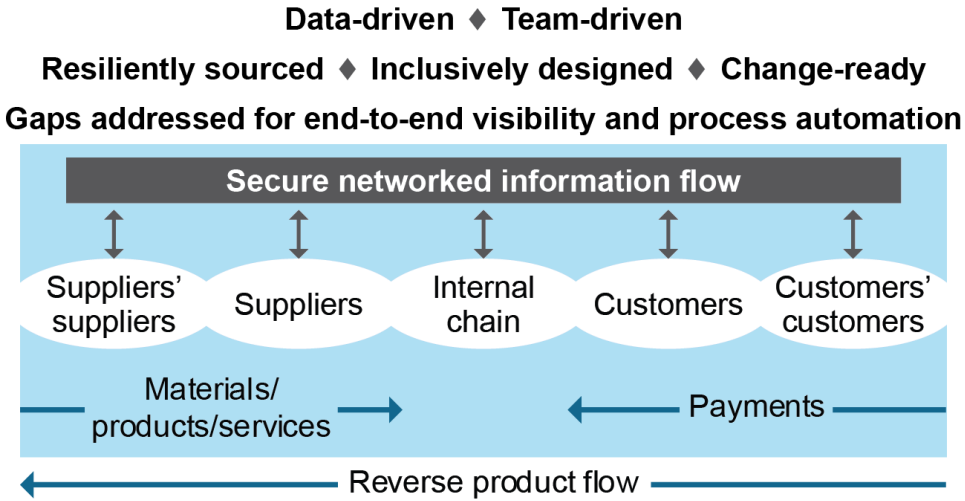
- Scope baseline
- Project schedule
- Project budget

Agile Project Management

- For projects that:
  - Have high degree of variability.
  - May require customer-driven changes at all stages, even late.
- Product owner represents customer needs.
- Scrum master (project manager) removes blockers.
  - Keeps teams focused on current work before starting too many new things.
  - Kanban board.

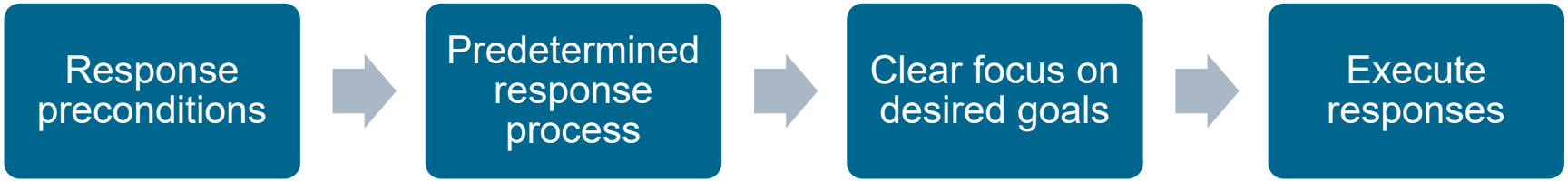
Risk Management and Supply Chain Security

- Transformation resilience: risk management maturity
- Security (physical, cyber): key enabler of partner trust

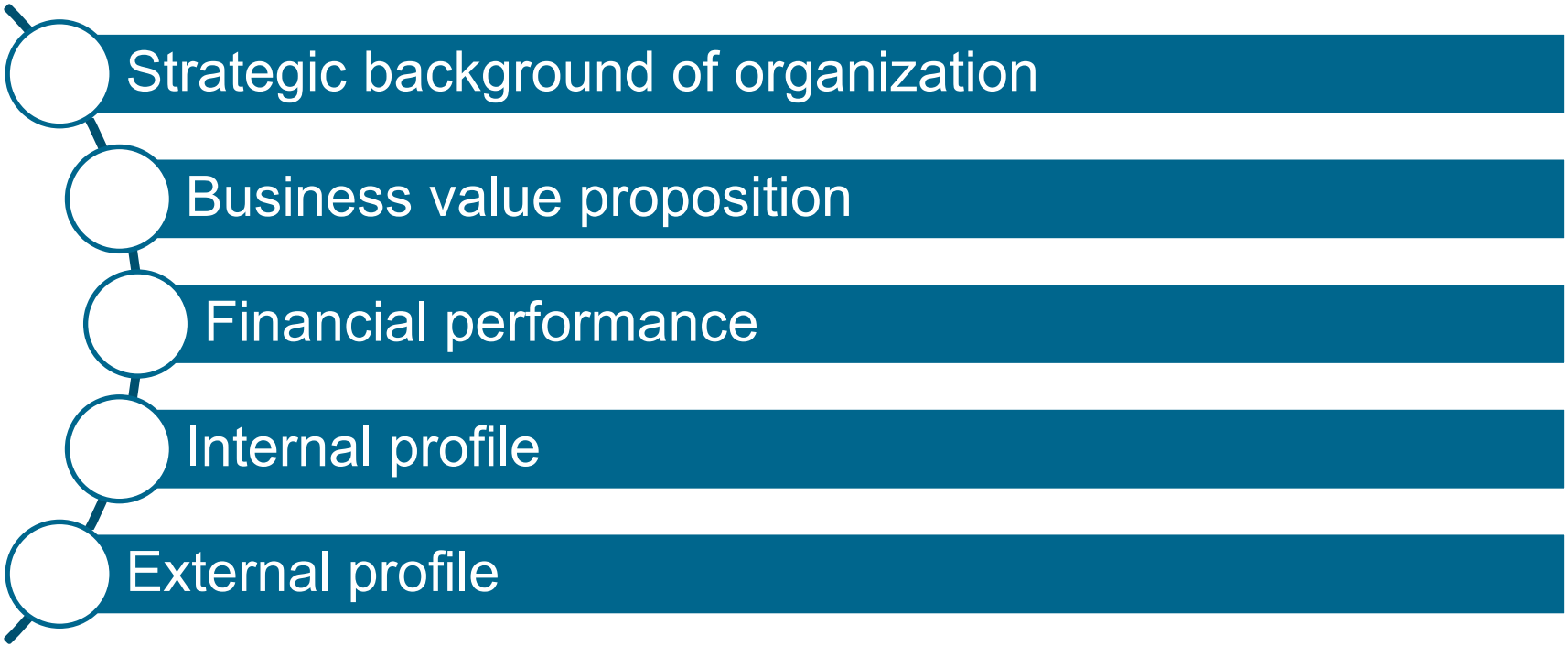


Resilient Supply Chains

- Global lean supply chains: highly efficient but assume that disruptions are rare.
- However, VUCA (volatility, uncertainty, complexity, ambiguity) is increasing.
- Resilient supply chains: agile and reliable.
- Must start with supply chain design for resilience.



Business Context Summary



Strategic Background and Profiles

Strategic Background

- Business description (organization, business units, monetary size, competition)
- SWOT analysis
- Organizational value proposition
- Critical success factors
- Critical business issues

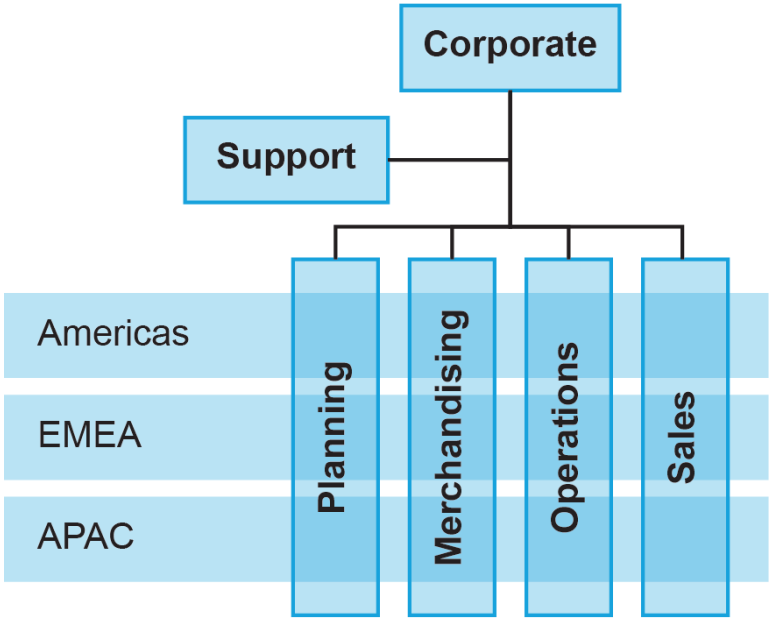
Financial Profile

- As-is state of
  - Income statement items of income, cash position, and profit
  - Balance sheet items of assets and liabilities (includes inventory)

External Profile

- Major customers
  - Revenue reporting groups have readily available data
- Major suppliers
  - Categories with bulk of spend

Organizational Structure and Hierarchy

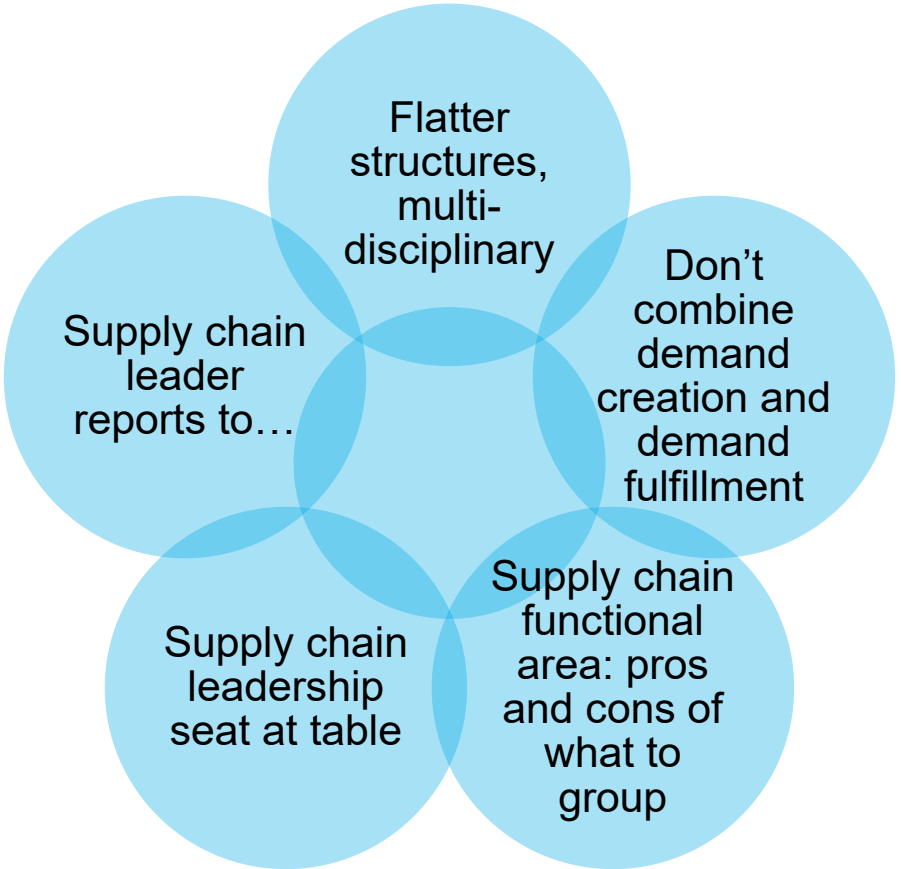


APICS, "SCOR-Professional Training," Version 2.5.
APICS copyright 2020. Used with permission.

- Functional organizational structures
  - Centralized
  - Decentralized
  - Hybrid
- Matrix structure
  - Dual lines of control

Internal Organizational Structure Transformations

- Organizational structure changes may be needed for transformation success.
- Centralized, decentralized, hybrid, or matrix.
- Network structure or subculture (innovative, entrepreneurial).



Talent Assessment and Alignment

- For business context summary, provide
  - General characterization of organization's talent assessment and alignment processes
  - Staff capabilities (strengths, gaps).
- During a transformation
  - Logical drivers for headcount requirements and skill mix (base on operationalized supply chain segment requirements)
  - Talent gap and assigning technical and business skills by role
  - Leader standard work (LSW)

Collaboration and Performance Management

- RACI
- RAPID
  - Input
  - Recommend
  - Agree
  - Decide
  - Perform
- Performance management
  - How it is done

Engine test	PM	Eng	Perf analytics	VP, Eng	VP, Acct
Run	I	R	I	A	I
Analyze results	I	C	R	A	I
Report	R	C	C	I	A
Follow up	R	C	I	I	A

R = Responsible for task completion
C = Consulted (provides input on the work)
A = Accountable for outcome
I = Informed of progress

CTSC

CERTIFIED IN TRANSFORMATION
FOR SUPPLY CHAIN

SECTION C: DRIVERS OF SUPPLY CHAIN TRANSFORMATION

APICS

ascm

Section C Learning Objectives

- Recognize customer, culture, and capability drivers.
- Understand need to operationalize customer segmentation.
- Understand capabilities/limitations of culture.
- Build or leverage organization's rapid transformation network.
- Discover current and needed levels of analytics capabilities.
- Benchmark performance attributes.

Operationalizing Market and Customer Segmentation

Customer Segmentation

- Industry sector
- Customer type
- Customer size
- Geographic location
- Profitability

Common Operational Segments

- Low-cost strategy customers
- Customers with high demand variability
- Project-driven customers (e.g., construction industry
- Customer-supplier long-term collaboration segment
- Customers needing innovative or emergency capacity

Culture and Capabilities

Culture as Strategic Capability Driver

- Values and beliefs match goals of organization.
- Unspoken assumptions are most dangerous element of culture.
  - Iceberg metaphor
  - For example, not-invented-here syndrome

Positive Culture

- Positive principles, values, and behaviors
- Collaborative behavior
- Sharing and exploring ideas
- Bias for quick wins and overall implementation speed

Building a Rapid Transformation Network

Management needs to champion, support, and sustain the network to give it legitimacy. The network is not part of the hierarchy.

Hierarchical Structure Roles	Network Roles
• Running day-to-day affairs • Executing extensions of current strategy • Enabling continuous improvement • Focusing on management, metrics, procedure	• Innovating, brainstorming, and championing • Strategic changes that require speed and agility • Creating breakthrough improvement • Focusing more on leadership and creativity

Eight Accelerators and Organizational Subcultures

Kotter's Eight Accelerators

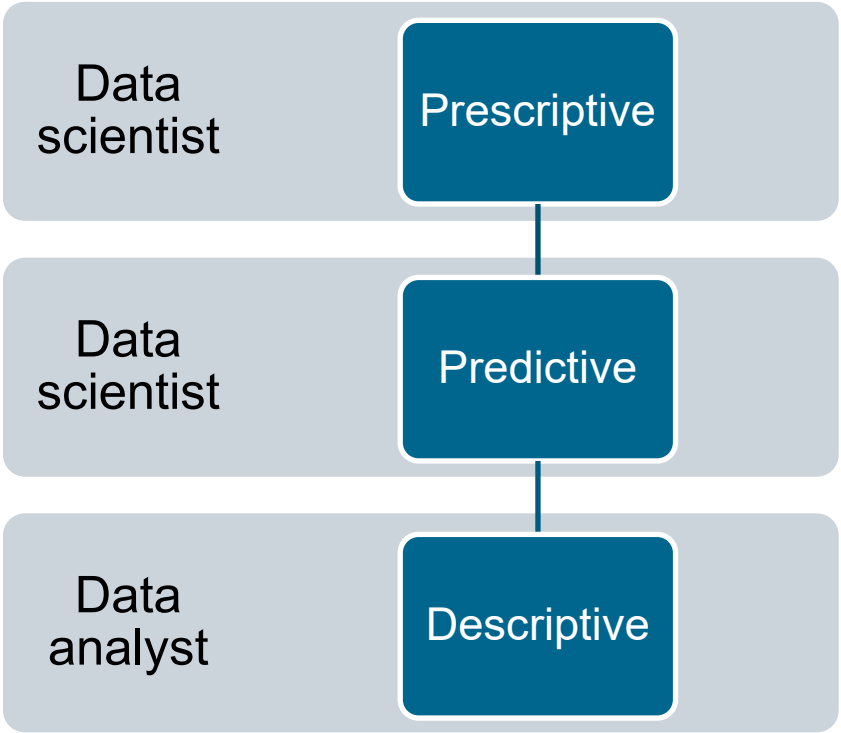
- Big opportunity and urgency
- Guiding coalition as change agents
- Vision and inspiration
- Legion of volunteers
- Obstacle and duplication avoidance
- Credibility through wins
- Self-sustaining network
- Institutionalize

Building Organizational Subcultures

- Subcultures to best serve each supply chain segment
  - Hierarchical
  - Rational
  - Group
  - Entrepreneurial
- Not every person in organization needs culture change.

Analytics Capabilities

- In demand by high supply chain maturity organizations
- Considerations
  - Begin with the end in mind.
  - Decision makers need more analytics maturity.



Conduct Supply Chain Segmentation: Supply Chain Definition Matrix

- Understand the number of supply chains needed.
- Sample, Inc., supply chain prioritization matrix:

	Revenue	Gross Margin %	Number of SKUs	Unit Volume	Strategic Value	Ranking (SUM)
Americas	3	2	2	2	3	**12**
EMEA	1	1	3	3	2	**10**
APAC	2	3	1	1	1	**8**

Conduct Supply Chain Segmentation, continued

Suppliers
- Oilco (oil products and lubricants)
- Chemco (coolants and cleaners)
- Packit (plastic containers and labels)
- Corrugated (cardboard boxes, fillers, and displays)

Sample, Inc., The Americas, Distributor Channel
- Headquarters (H1) on East Coast
- East Coast Operations (Central DC/ repackaging; Southern DC)
- West Coast Operations (Central DC/ repackaging, Northern DC)

Channel Partners
- None identified

West Coast Customers
- S-Mart (large global retailer; branded and private labels but no private-label lubricants)
- Auto Bros (aftermarket retail chain; private labels)
- Costking (memberships warehouse club; branded and private label but no branded chemicals)
- Carfix (aftermarket retail chain; branded only)

East Coast Customers
- Vehicle Proof (car service club; branded oil and private lubricants only)
- Night Drive (aftermarket retail chain; branded oil and chemicals only)
- The Mall (large global retailer; branded oil and private and branded lubricants only)
- Automotive Ecommerce (e-commerce reseller; branded and private oil, private chemicals, branded lubricants)

Conduct Supply Chain Segmentation, continued

- Right number of supply chains to have
- Right supply chain to design first

Supply Chain Segmentation		Customers							
		West Coast				East Coast			
Products		S-Mart	Auto Bros	Costking	Carfix	Vehlicle Proof	Night Drive	The Mall	Automotive Ecommerce
Automotive Oil	Private	X	X	X					X
	Branded	X		X	X	X	X	X	X
Cleaning Products	Private	X	X	X					X
	Branded	X			X		X		
Lubricants	Private		X	X		X		X	
	Branded	X		X	X			X	X

Conduct Supply Chain Segmentation, continued

Custom matrices can be developed, for example, desired responsiveness and sales volume per location

High responsiveness	Less-than-truckload (LTL) quantities are likely, so charge more for desired responsiveness.	Compete on responsiveness. Leverage truckloads (TLs), backhaul opportunities, and consolidation to contain costs.
Low responsiveness	Seek opportunities for milk runs with optimized routing.	Compete on low-cost efficient supply chain.
	Low volume per location	**High volume per location**

Benchmark Against Competitors and Best-in-Class Organizations

1. Determine critical performance.
2. Define metrics to be used and benchmarking framework.
3. Identify leading or benchmark targets.
4. Gather organization's own performance data.
5. Identify and analyze performance gaps.
6. Plan path forward.
7. Allocate resources, implement plans, and measure results.

Customer Satisfaction and Retention

- Not possible to quantify satisfaction levels
- Sample, Inc., uses customer survey for priorities:

Top 5 Customer Priorities in Order	Sample, Inc.	Competing Distributor
1. Replenishment frequency	5 (currently at parity)	5
2. Order completeness	3 (currently underperforming)	7
3. Reliable delivery windows	8 (currently superior)	2
4. Reverse logistics	4 (currently at parity)	4
5. Lead-time quoting accuracy	6 (currently at advantage)	4

Efficiency, Resilience, Effectiveness, and Costs

Efficiency, Resilience, and Effectiveness

- Overall effectiveness or profitability of supply chain strategy
- Tradeoffs between priorities:
  - For example, high efficiency tradeoff with high resilience
  - Tradeoffs are why seeking parity is important.

Supply Chain Costs

- Total supply chain management costs
- Operational efficiency: EBIT as a percent of revenue
- Organization with human resources as its primary cost driver could benchmark revenue per employee.

Growth

Superior supply chain performance leads to superior organizational performance.

	New Customer Revenue	New Customer Gross Margin	New Customer Unit Sales	Existing Customer Revenue	Existing Customer Gross Margin	Existing Customer Unit Sales
Family A NPI	+	+	+	+	+	+
Family A existing	+	+	+	–	–	–
Family B NPI	0	0	0	+	–	+
Family B existing	–	–	–	–	–	–

Develop Business Value Proposition(s)

- Final step of phase of developing a sense of urgency:
  - Evangelist/portfolio director needs to make specific improvement commitments to primary decision maker (e.g., CEO).
  - One or more business value propositions.
- Get out of operational comfort zone.
- Make time to oversee transformation and find staff.
- Conclude business value proposition with go/no-go gate.