

# Sourcing Products and Services

Course: Production Management and Logistic Systems [10592713]

Economia e management (Latina Campus)

AA 2024-2025 | Prof. Alessandro Pietrogiacomì



SAPIENZA  
UNIVERSITÀ DI ROMA

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# Sourcing Products and Services

## Section A Introduction

### Section A Key Processes:

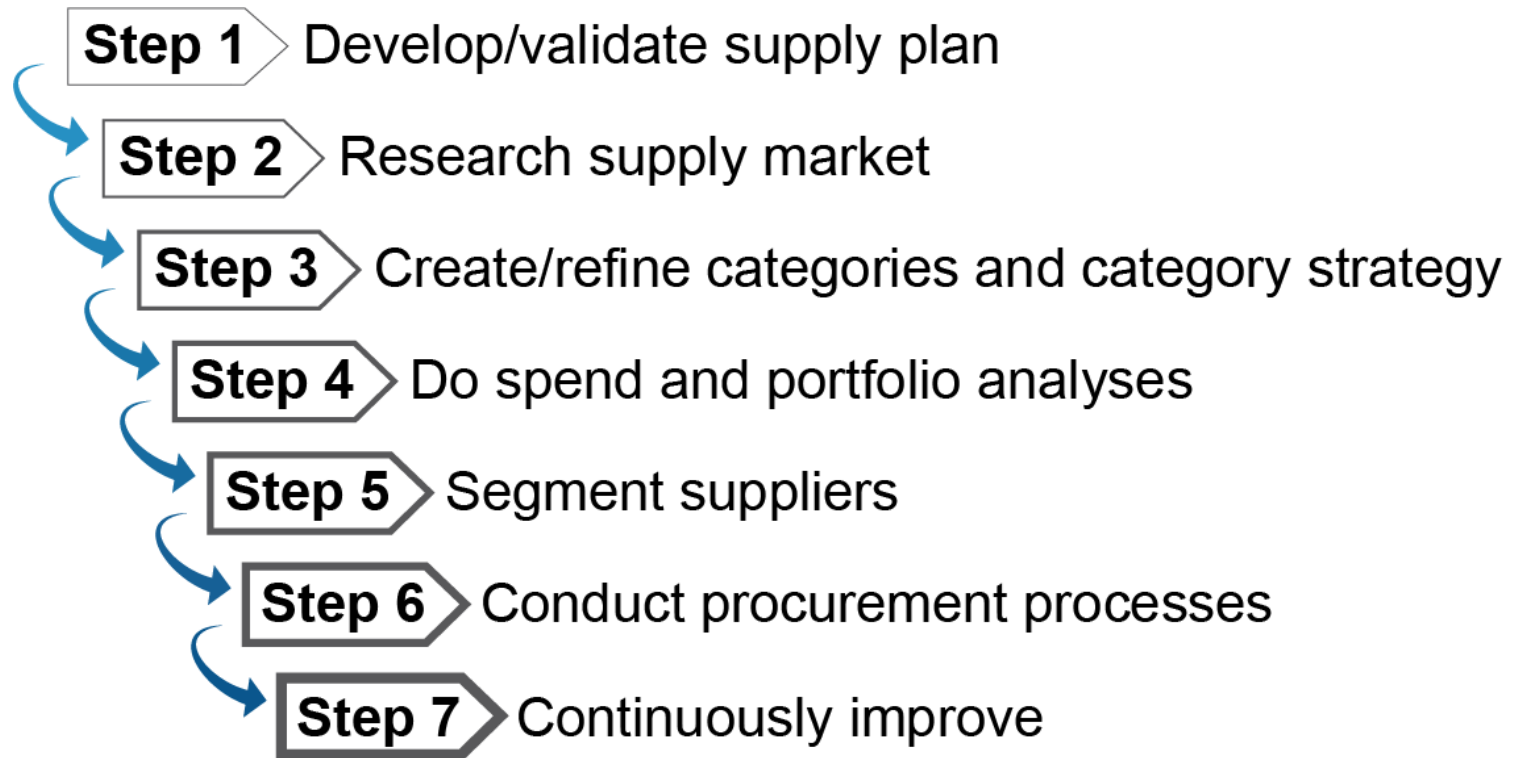
- Aligning sourcing activities to demand
  - Perform make-or-buy analysis.
    - Manufacturing capabilities
    - Core competencies
    - Total cost of ownership (TCO)
  - Define sourcing requirements and timing.

### Section A Topics:

- Make-Versus-Buy, Outsourcing, and Offshoring
- Sourcing Requirements and Total Costs

# Make-Versus-Buy, Outsourcing, and Offshoring

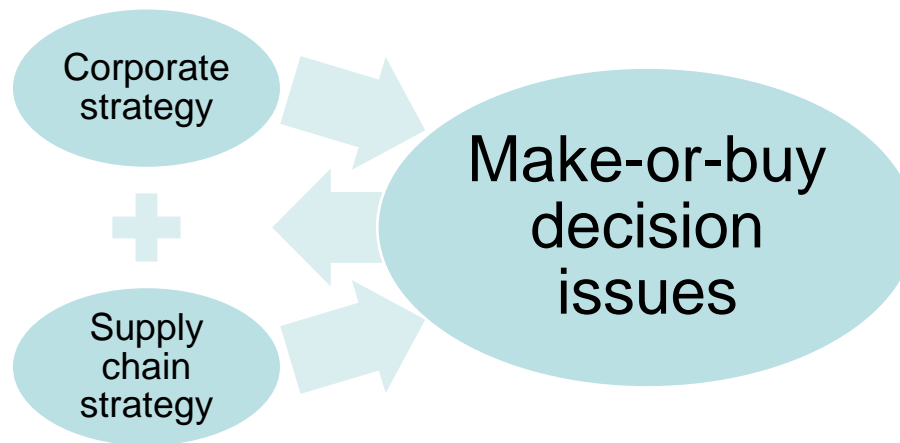
## Sourcing Process



# Make-Versus-Buy, Outsourcing, and Offshoring

## Make-versus-Buy Analysis

- Is the activity a core competency?
- What are the consequences of losing skills or knowledge?
- What is the landed cost or TCO?







# Make-Versus-Buy, Outsourcing, and Offshoring

## Make/Buy: Is Activity a Core Competency?

1. Does the organization already have the core competency? (Opinions may differ.)
2. Does the market need it?
3. What is the relationship between market need and enterprise capability?
4. Develop core competency to meet market need or outsource?

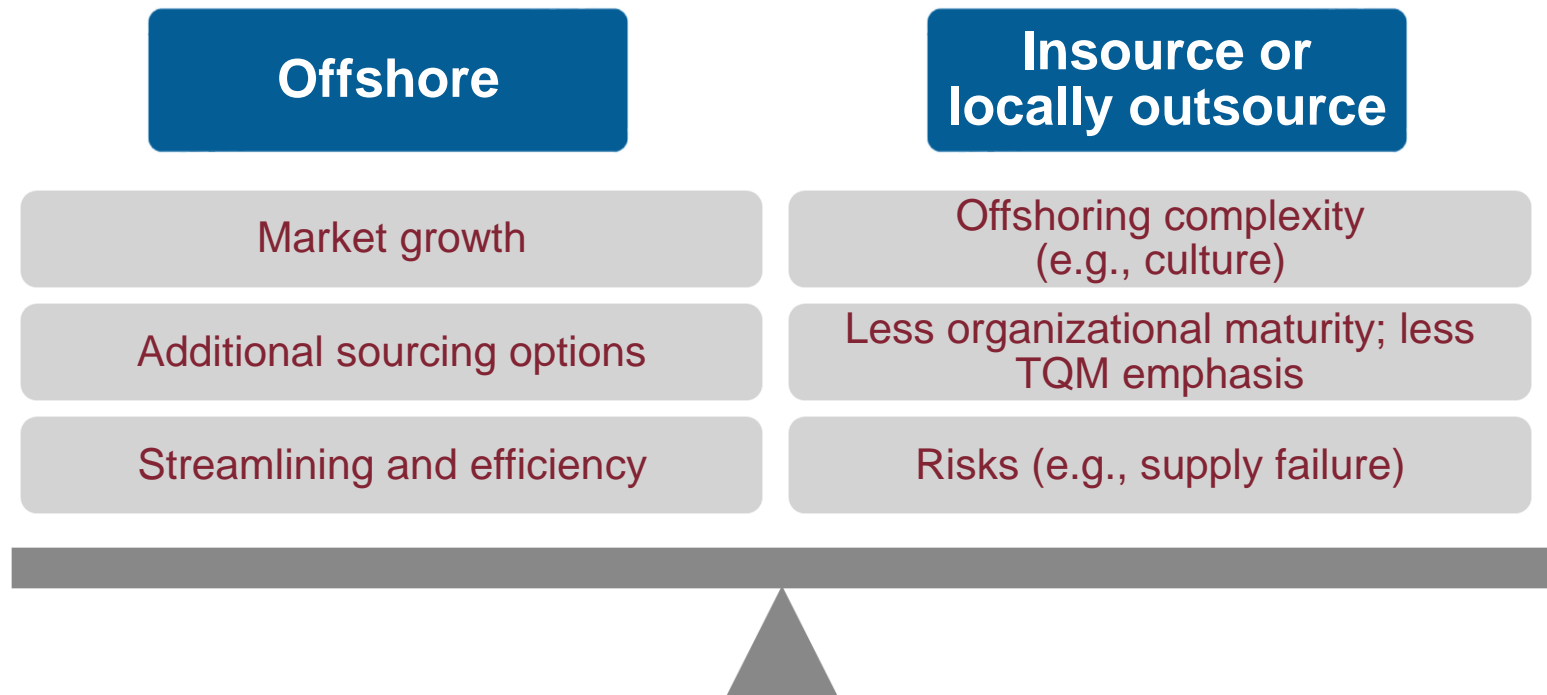
# Make-Versus-Buy, Outsourcing, and Offshoring

## Benefits of Contracting Out

-  Economies of scale
-  Risk reduction
-  Increased capital available for investment
-  Clearer focus
-  Access to new technologies
-  Faster development cycle times

# Make-Versus-Buy, Outsourcing, and Offshoring

## Offshoring: Cost Cutting and More...



# Make-Versus-Buy, Outsourcing, and Offshoring

## Comparing Manufacturing/Assembly Sites

### Advantages

- Low labor rates
- Lower material costs
- Lower benefits costs
- Favorable duty rates
- Lower taxes
- Smaller capital investment (if assets are transferred to foreign country)

### Risks

- Time zone costs/disruptions
- Worse transport costs/lead times
- Relationship management costs
- Political risks/instability
- Currency hedging
- Environmental/reverse logistics
- Safety stock, warehousing, or in-transit costs
- Damage, theft insurance

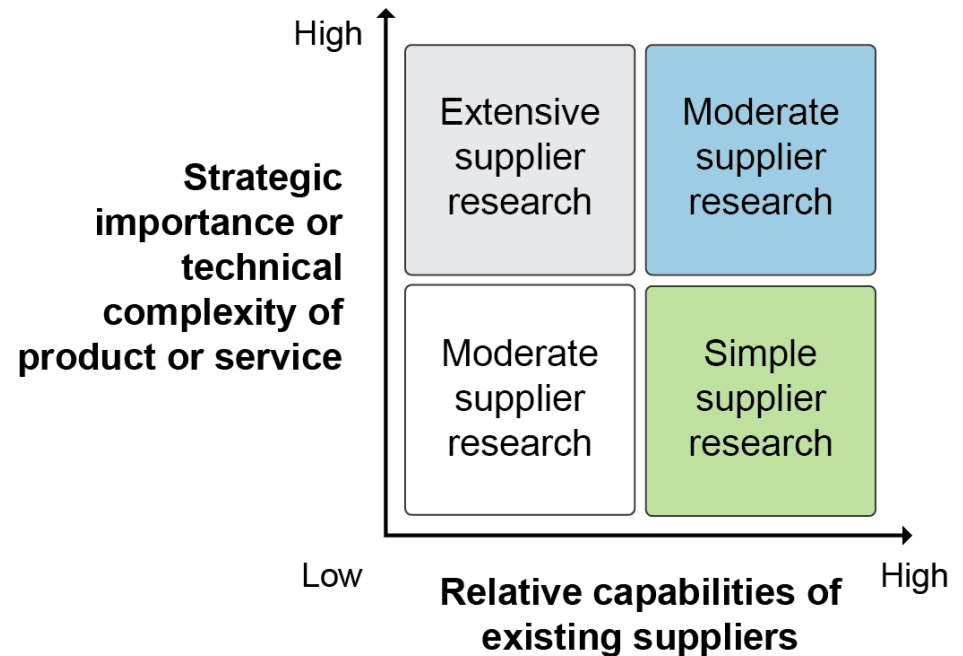


# Sourcing Requirements and Total Costs

## Sourcing Requirements and Timing

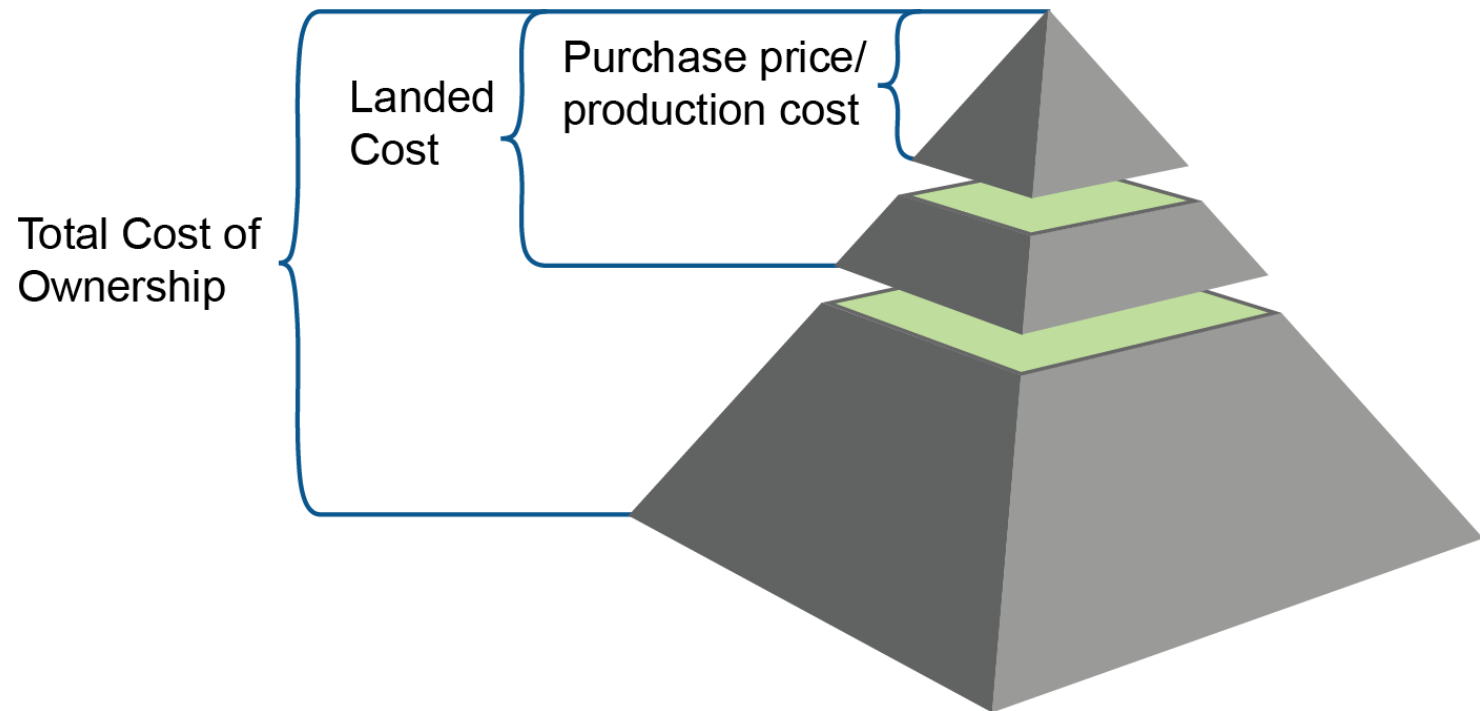
Sourcing and timing requirement categories:

- Cost and target price
- Quality culture, product quality
- Delivery performance
- Lead time
- Available capacity
- Design/collaboration ability
- Time to market
- Sustainability



# Sourcing Requirements and Total Costs

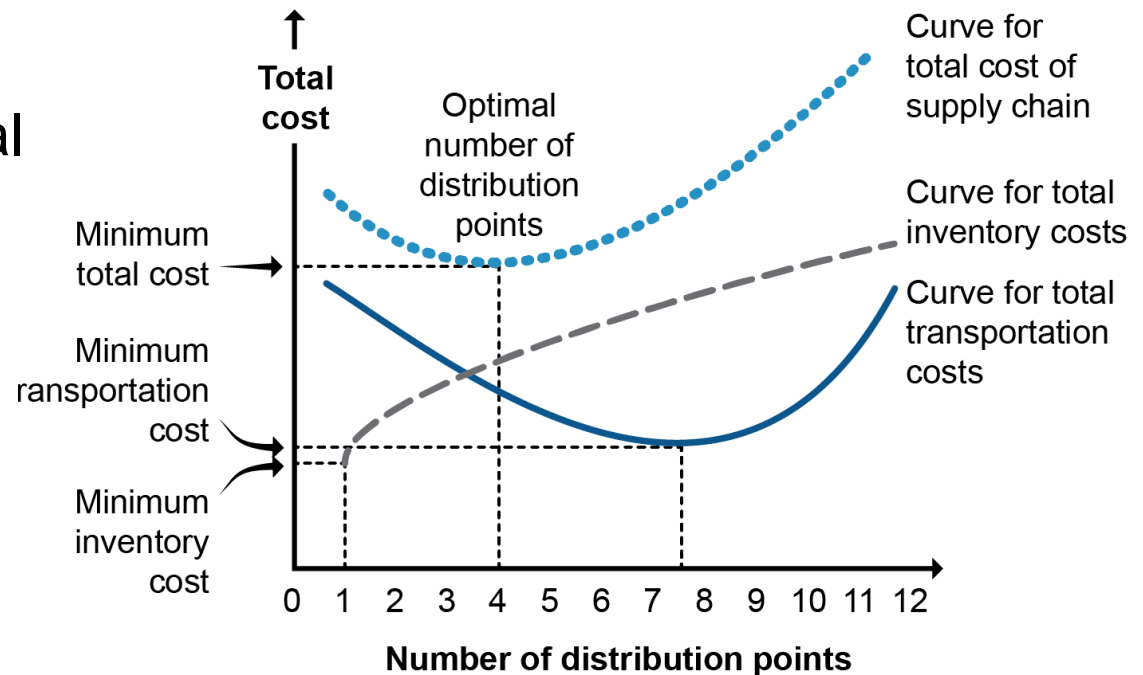
## Relationship Between Cost Terminology



# Sourcing Requirements and Total Costs

## Total Cost of Ownership (TCO)

- Main insight: Acquisition cost is often a very small portion of TCO.
- Reassess incremental costs over time.
- Costs to include:
  - Landed costs
  - Process change costs
  - Ongoing costs
- Should-cost estimate



- **Sourcing Products and Services**

## **Section B Introduction**

### **Section B Key Processes:**

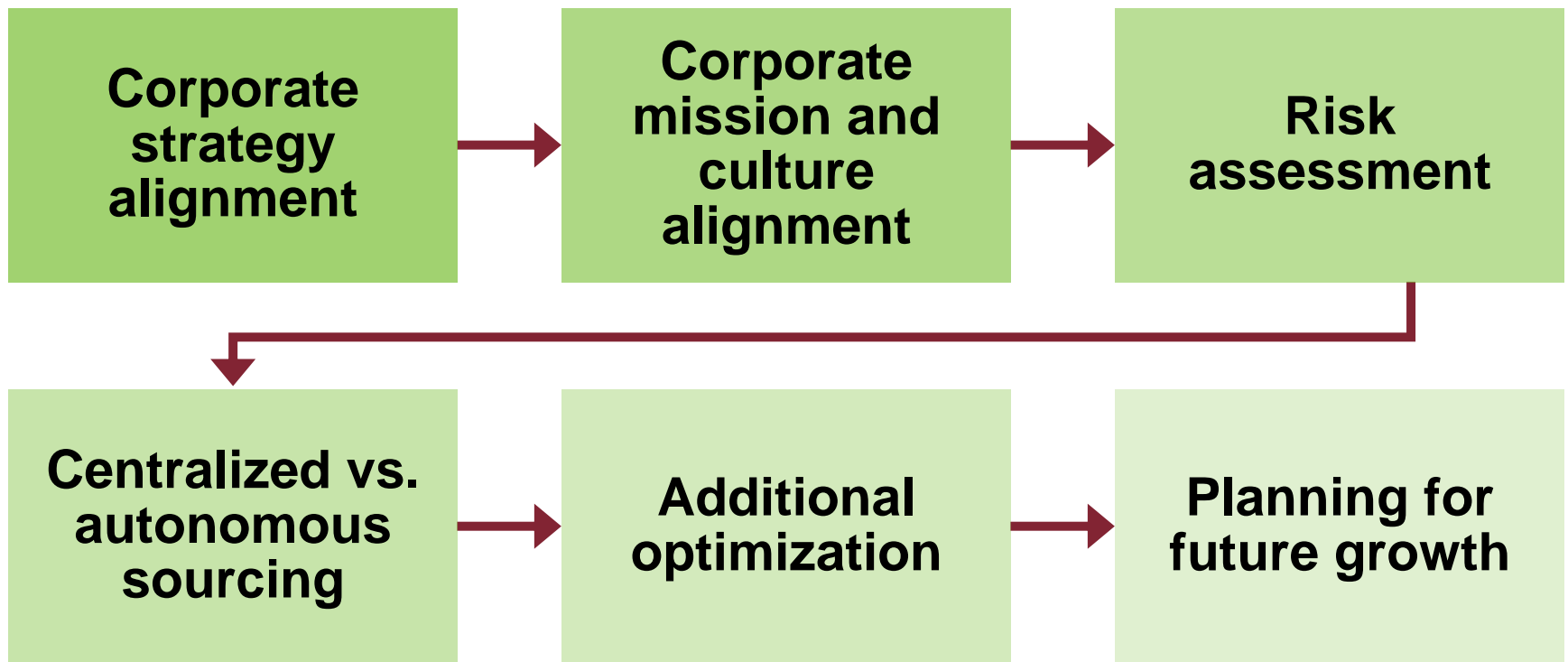
- Manage categories for sourcing of products and services.
  - Create segmented sourcing strategy.
  - Conduct supply base analysis.
  - Identify savings opportunities.
  - Rationalize or right-size supply base.

### **Section B Topics:**

- Supply Plans, Categories, and Segmentation
- Supply Base Analysis and Right-Sizing

# Supply Plans, Categories, and Segmentation

## Supply Plan Validation and Refinement



# Supply Plans, Categories, and Segmentation

## Categories and Category Strategy

### Sourcing Categories

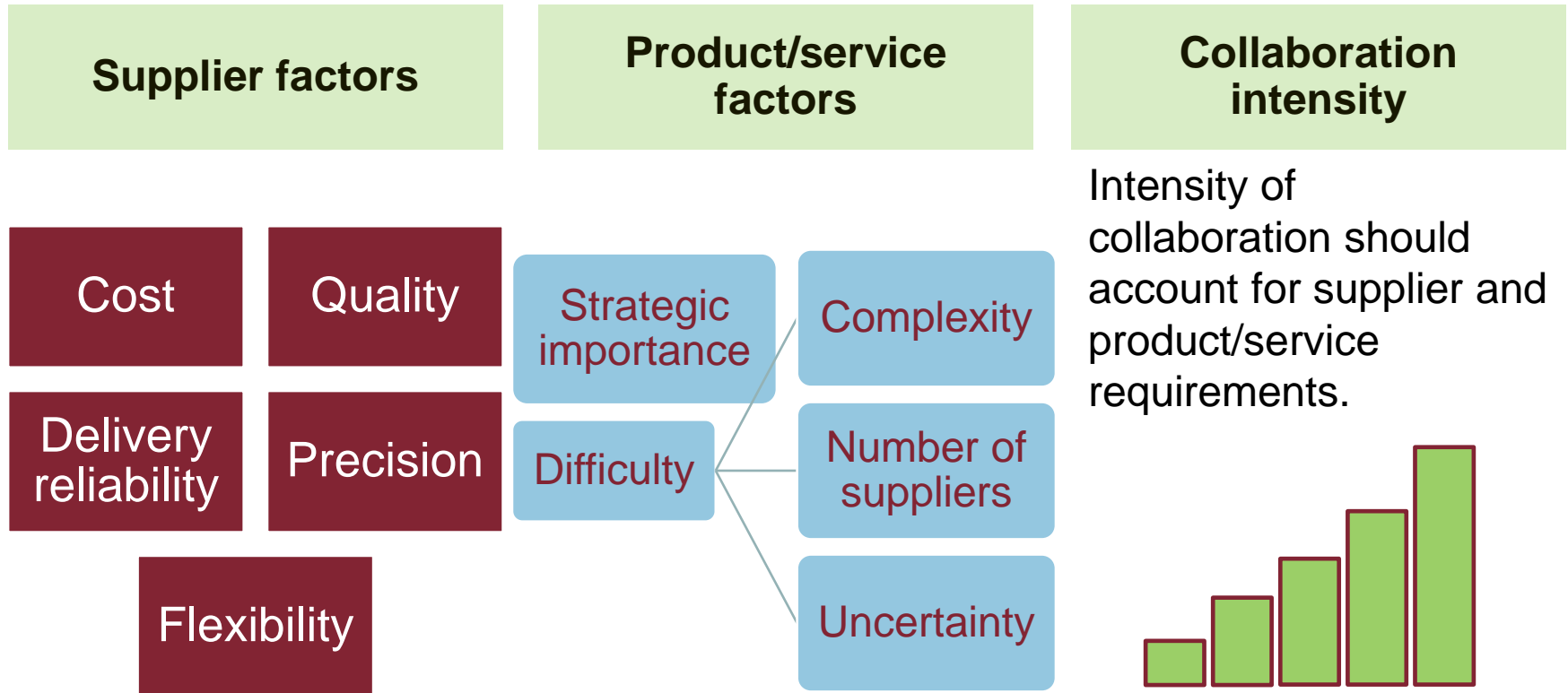
- Organization-specific group of purchased goods/services
- Should enable better supplier management and purchasing spend
- Segment suppliers for optimum relationship levels

### Category Strategy

- Category manager
- Classifying categories by
  - Total spend
  - Number of suppliers
- Portfolio analysis: how much you need supplier
- Supplier segmentation: how much they need you

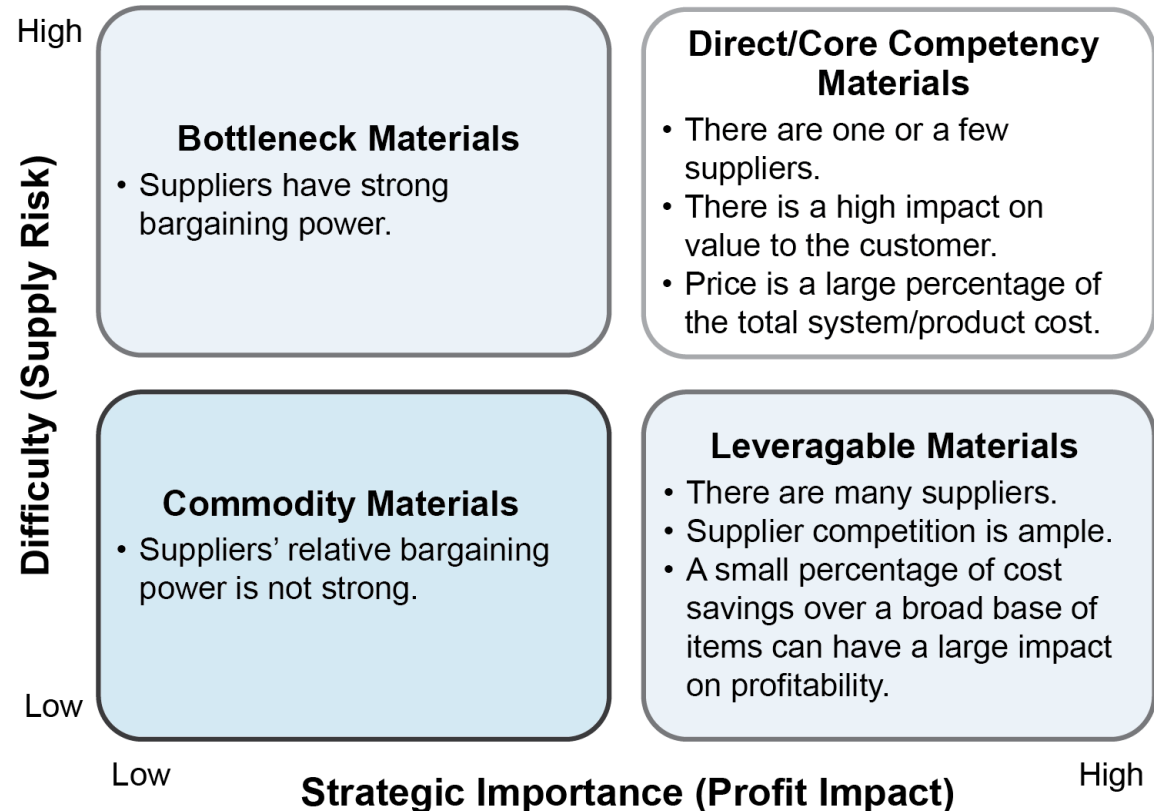
# Supply Plans, Categories, and Segmentation

## Strategic Importance and Related Factors



# Supply Plans, Categories, and Segmentation

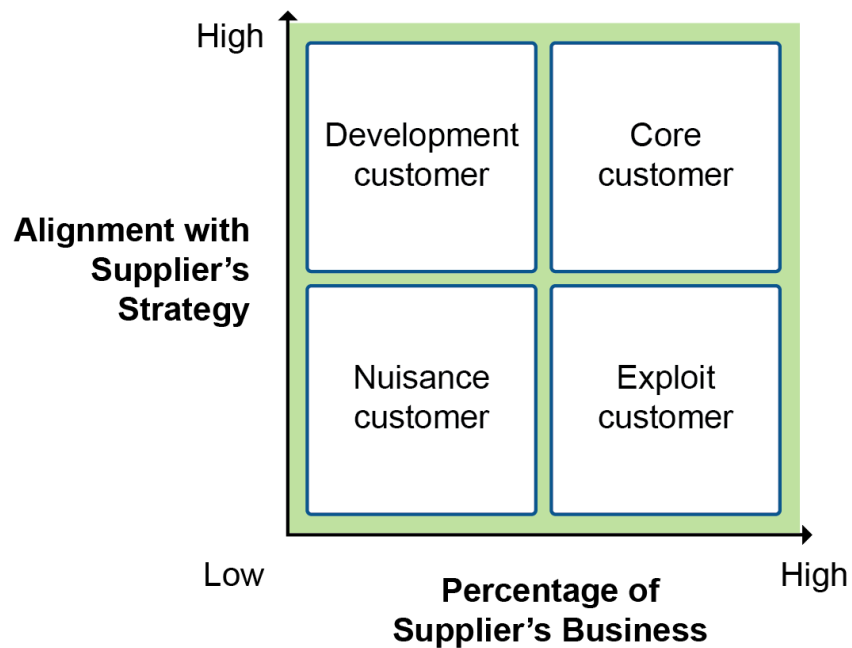
## Portfolio Analysis





# Supply Plans, Categories, and Segmentation

## Segmented Sourcing Strategy



Transactional



Preferred supplier



Strategic relationships



Ownership

# Supply Plans, Categories, and Segmentation

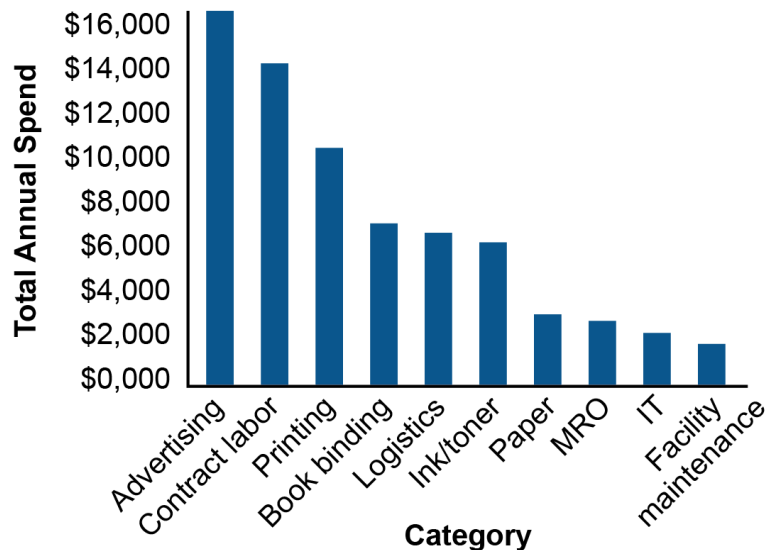
## Relationship Types

Relationship	Characteristics				
	Proximity	Visibility	Competitor Interaction	Communication	Culture
<b>Transactional</b>	Arm's length	Purchase requirements	Significant	Computerized	Not an issue
<b>Preferred: Ongoing</b>	Medium term	Some sharing	Some	Designated contact points	Aware
<b>Strategic: Partnership</b>	Longer term	Full sharing	Limited	Department interaction	Aware + adaptive
<b>Strategic: Collaboration/ strategic alliance</b>	Long-term relationship	Sharing + partners' plans as own	Limited or none	Extensive, high trust, licensing	Merging
<b>Ownership: Mergers/ acquisitions</b>	Ownership	Internal, commonly held information	None	Varies	One culture

# Supply Base Analysis and Right-Sizing

## Supply Base Analysis

### Spend Analysis

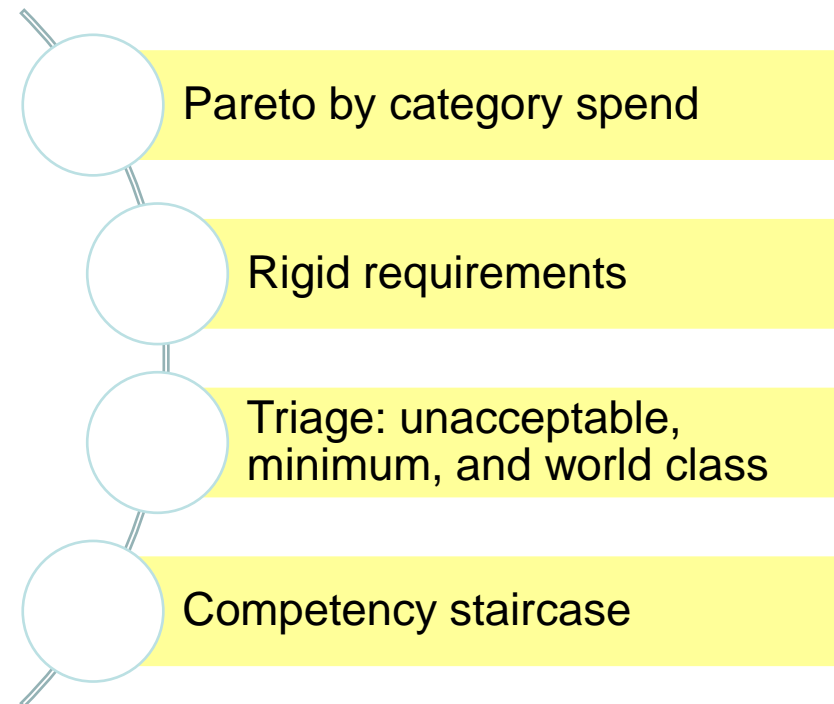
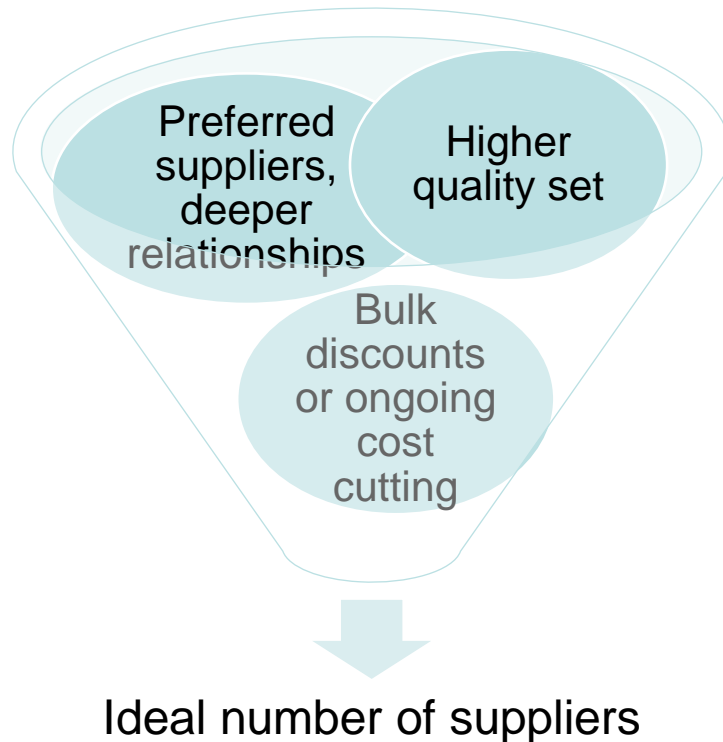


### Market Research

- Forecast projected demand per category.
- Translate demand per end item into component demand.
- Review existing suppliers.
- Interviews are effective.
- Get corroboration on external market and local assumptions.

# Supply Base Analysis and Right-Sizing

## Supply Base Right-Sizing



- **Sourcing Products and Services**

## **Section C Introduction**

### **Section D Key Processes:**

- Evaluate and select suppliers.
  - Qualifications, evaluation
    - Value-added services
  - Contract pricing, delivery, terms and conditions
- Manage purchase orders.
  - Purchase orders
  - Reconcile and approve invoice.
  - Track, expedite, de-expedite
  - Sourcing automation

### **Section D Topics:**

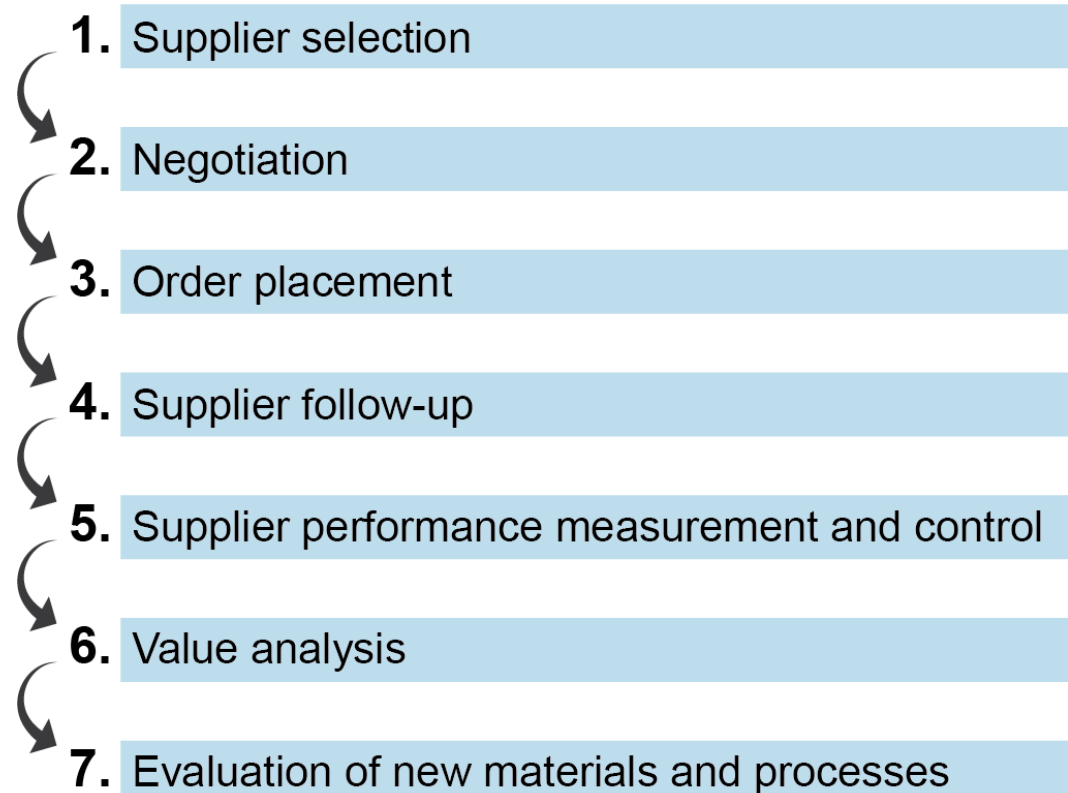
- Supplier Evaluation and Selection
- Contracts
- Purchase Orders

# Supplier Evaluation and Selection

## Functions of Purchasing

Supplier relationship management makes collaboration easier.

- Competitive expectation
- Increases role complexity



# Supplier Evaluation and Selection

## Supplier Selection

	Supplier's perspective	Buyer's perspective
Traditional thinking	<ul style="list-style-type: none"><li>• Highest profit margin</li><li>• Disregard customer needs</li><li>• Short-term transactions</li></ul>	<ul style="list-style-type: none"><li>• Lowest price</li><li>• Disregard supplier impact</li><li>• Short-term transactions</li></ul>
Supply chain thinking	<ul style="list-style-type: none"><li>• Strategic view of sourcing</li><li>• Long-term success of all partners in SC</li><li>• Cooperatively established:<ul style="list-style-type: none"><li>✓ Pricing</li><li>✓ Discounts</li><li>✓ Delivery timing</li></ul></li><li>• Ongoing relationships or alliances</li><li>• Total cost of ownership and reputation effects</li></ul>	

# Supplier Evaluation and Selection

## Total Cost of Ownership

- Consider lead time differentials

CPC # PO332932	Description: 3/8" Copper Tubing Type M, 10' long			
Suppliers	A (Brazil)	B (Korea)	C (China)	D (U.S.A)
Landed costs				
Price per unit	USD 9.800	USD 9.600	USD 8.200	USD 11.200
Inbound transportation	1.200	1.600	1.650	0.211
Total landed costs	11.000	11.200	9.85	11.411
Life-cycle costs				
Contracting	0.200	0.200	0.200	0.200
Business unit purchasing	1.488	0.880	0.990	0.790
Logistics administration	2.120	2.570	2.100	1.110
Receiving	0.027	0.032	0.054	0.012
Inspection	0.050	0.070	0.110	0.080
Cost of internal quality	0.430	0.540	0.520	0.780
Inventory carrying	1.200	1.600	1.650	0.08
Accounts payable	0.050	0.050	0.050	0.050
Exchange rate factor	0.057	2.000	0.003	0.000
Outbound transportation	0.100	0.100	0.100	0.100
Waste disposal	0.054	0.054	0.054	0.054
Cost of external quality	0.068	0.064	0.062	0.080
Total LCC	5.844	8.160	5.893	3.336
TCO (Landed + LCC)	USD 16.844	USD 19.360	USD 15.743	USD 14.747



# Supplier Evaluation and Selection

## Supplier Corporate Social Responsibility (CSR)

- Organization, its employees, and suppliers hold selves accountable for:
  - Consumer health and safety
  - Employee health and safety
  - Environmental sustainability
  - Maintainability
  - Employment policy
  - Community reinvestment and use of local goods and services.
- Legal review is needed to ensure compliance with related laws and regulations in each jurisdiction.

# Supplier Evaluation and Selection

## Negotiations

### Hard negotiators (win/lose)

- Adversary to be beaten.
- Take position, demand concessions, give none.
- Threaten or mislead.

### Soft negotiators (lose/win)

- Value agreement too much.
- Disclose bottom line.
- Accept one-sided agreements/concessions.

### Principled negotiation principles

- Negotiations should:
  - Solve underlying issues.
  - Preserve relationships.
  - Result in enduring, fair agreements.

### Principled negotiation process

- Interest-based bargaining:
  - Separate the people from problem.
  - Focus on interests, not positions.
  - Invent options for mutual gain.
  - Insist on objective criteria.

# Supplier Evaluation and Selection

## Contract Performance

### Contract Deployment

- Navigate legal.
- Communicate with winner.
- Do internal buyer agreements.
- Database entry.
- Order-to-pay procedures.
- Train, validate users/suppliers.
- Use transaction management.
- Audit invoices.

### Compliance Management

- Preferred supplier compliance vs. off-contract.
- Report findings.
- Monitor supplier KPIs.
- Audit supplier pricing.
- Monitor contract expirations, renewals, and discount use.
- Continually improve.
- Establish baselines.

# Supplier Evaluation and Selection

## Measuring Supplier Success/Avoiding Pitfalls

Establish clear performance expectations.

Measure against performance expectations regularly.

Maintain ultimate responsibility.

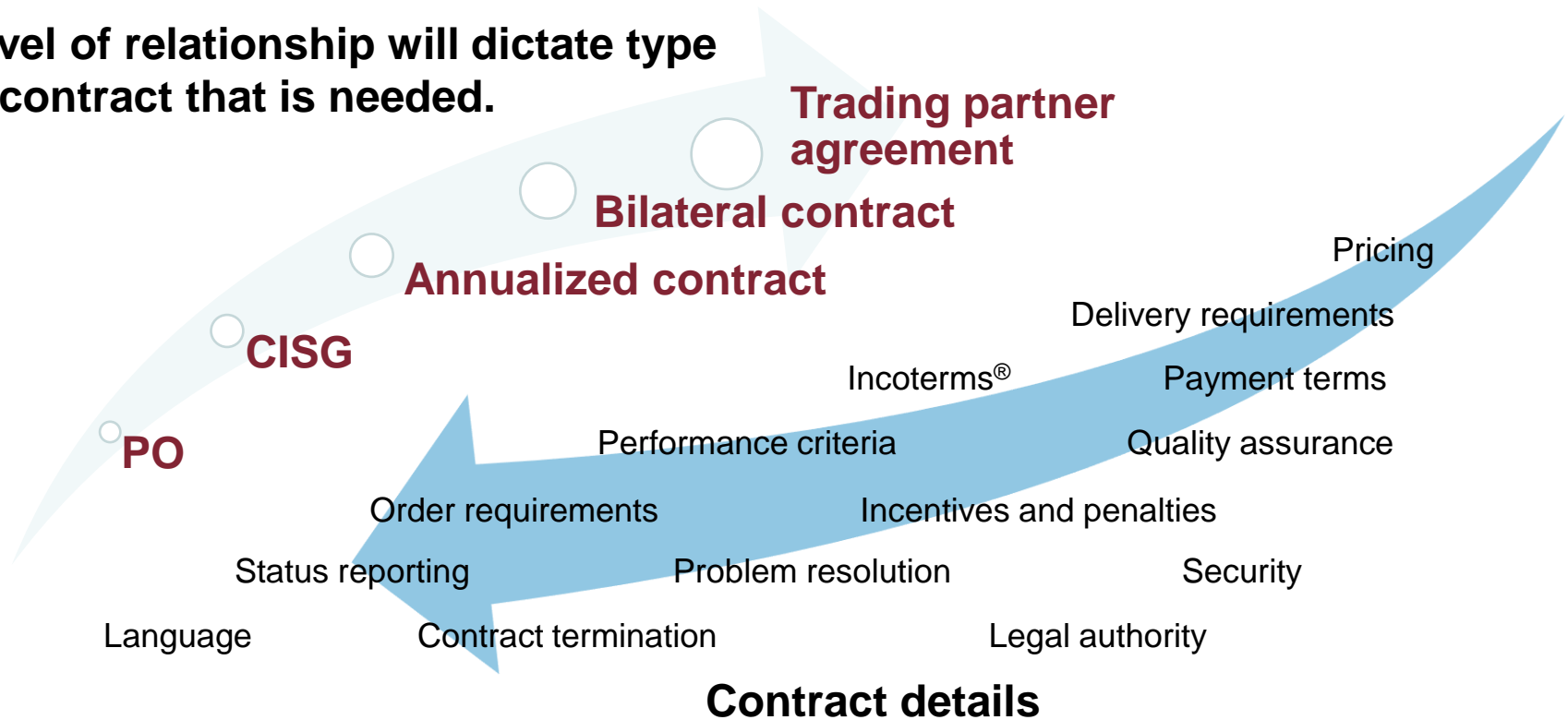
Coordinate activities of multiple suppliers and share learning.

Maintain an exit strategy.

# Contracts

## Contract Types and Details

Level of relationship will dictate type of contract that is needed.



# Contracts

## Payment Terms

Trade credit or open account are offered only to trading partners with good credit records and healthy financials.

### Trade credit

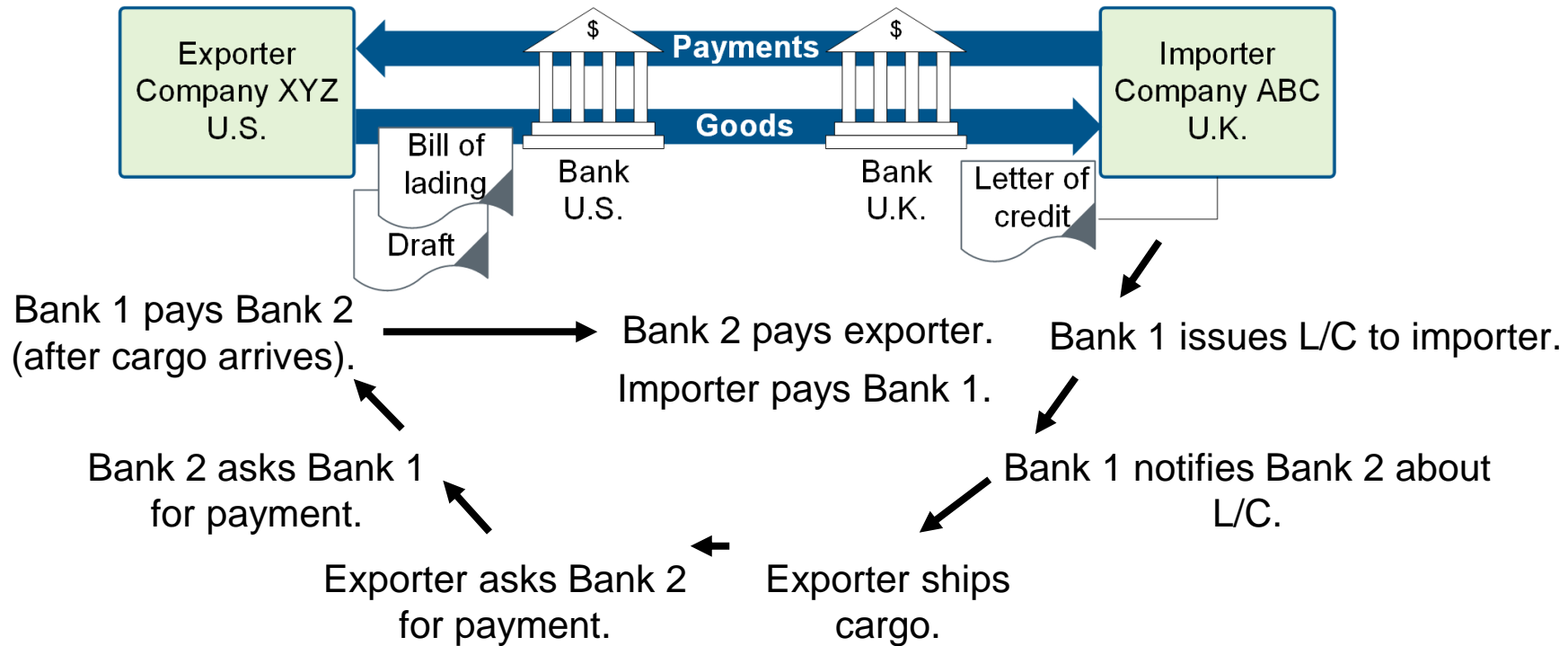
- Sale of goods or services in which payment is not due right away.
- Gives the buyer time to convert the good or service into revenue themselves before making payment.

### Open account

- Buyer has a credit limit with the organization or a bank.
- Buyer can make orders or write drafts up to the limit to pay for goods or services on receipt or on a deferred basis.

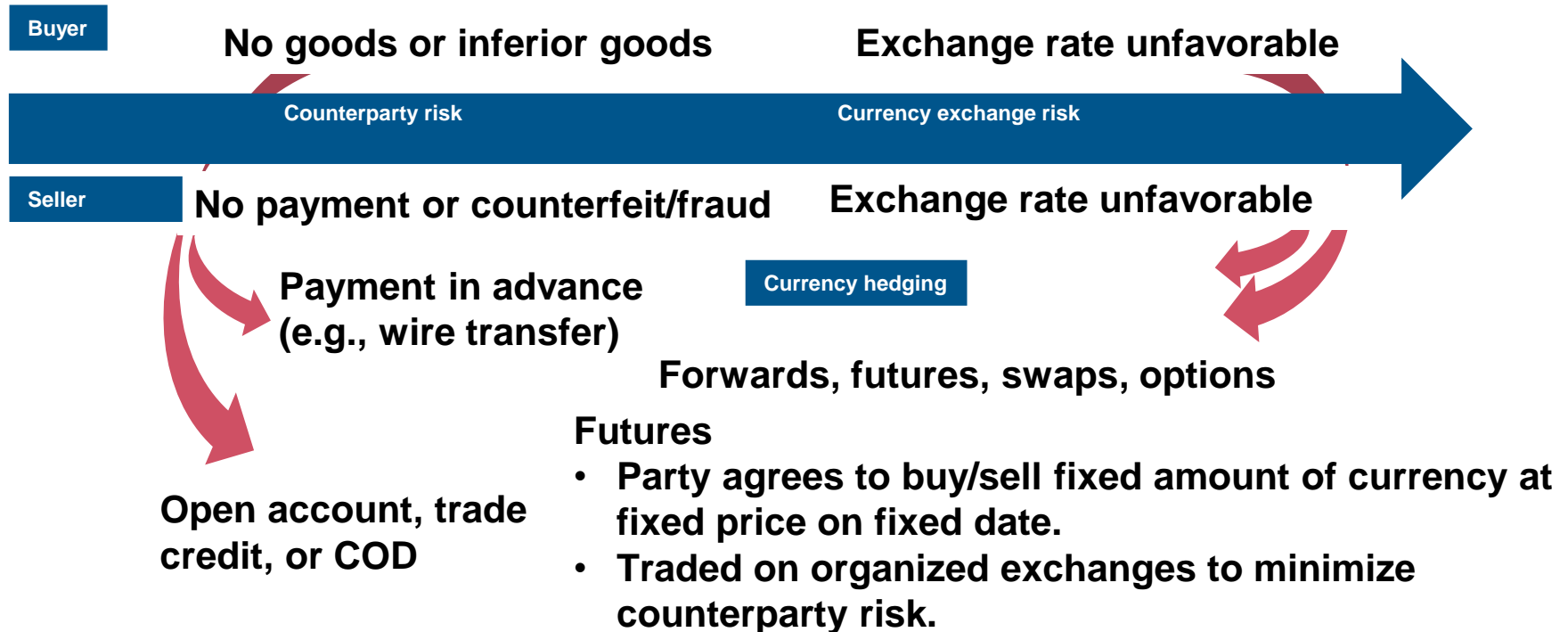
# Contracts

## Letters of Credit (L/C)



# Contracts

## Currency Issues





# Purchase Orders

## Placing Orders

### Purchase orders

- Initial or one-time
- All terms and conditions
- Functional areas informed of stage

### Blanket POs

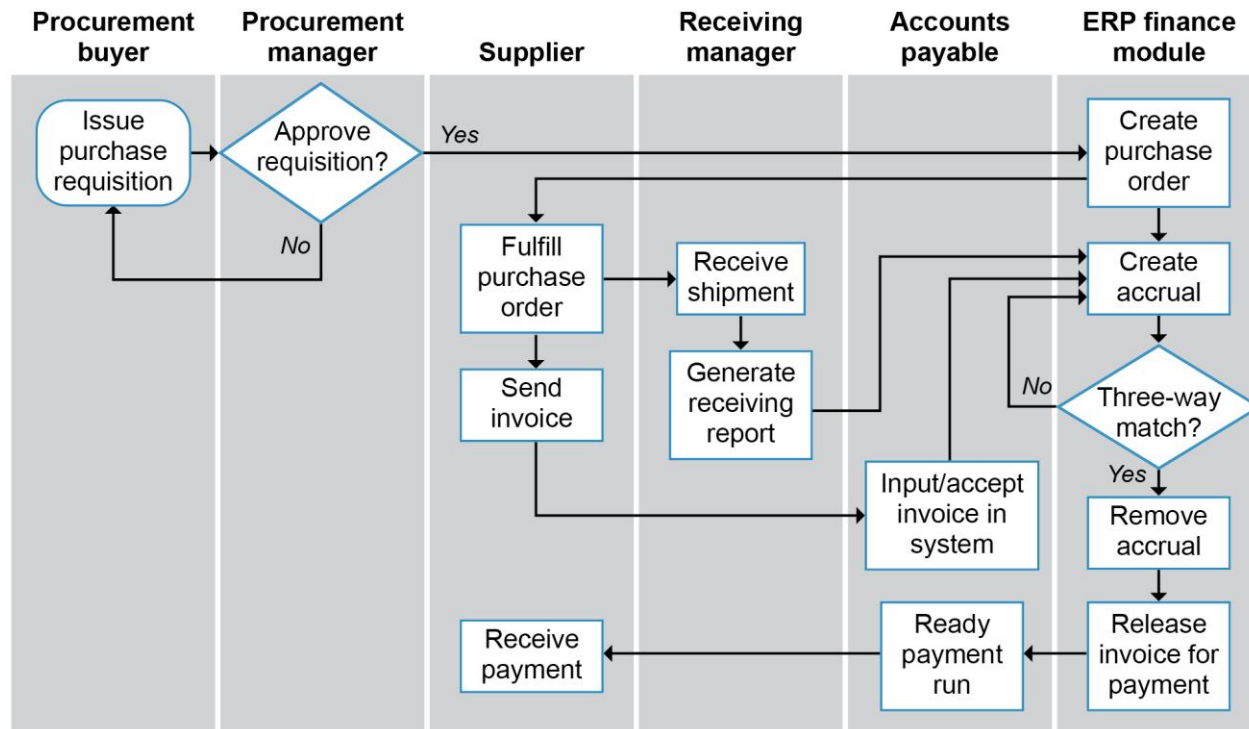
- Long-term commitment, short-term releases
- Master terms and conditions
- Discounts, lead times, quality

### E-Procurement

- Auctions
- Reverse auctions
- Exchanges
- Portals

# Purchase Orders

## Reconciling and Approving Invoices



# Purchase Orders

## Order Tracking (Internal)

Functional Area	Tracking Needs
Purchasing	Primary tracker of open order status and exceptions.
Sales	Notify customers of potential delays/issues.
Accounts payable	Forecast future accounts payable obligations.
Accounting	Accurate financial records.
Requesting functional area	Look up orders by order number, be informed of issues.
Receiving	Forecast inbound workload and space needs.
Traffic	Inbound inventory requirements to schedule carriers or internal fleets.

# Purchase Orders

## Expediting

To rush or chase production or purchase orders that are needed in less than the normal lead time

### Application

- Any stage can be expedited (source and transform common)
- Should be very rare

### Causes

- Inventory shortages
- Poor demand forecasting

# Purchase Orders

## Expediting of Transportation

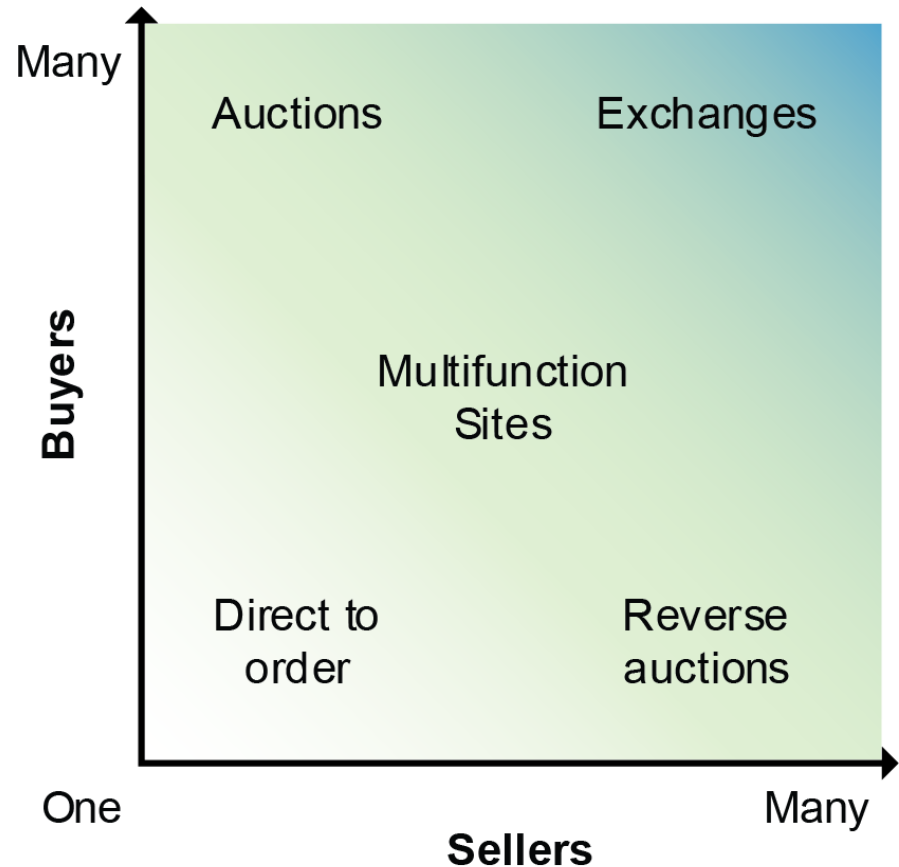
- Faster mode of transport
  - Overnight
  - Upgrading from ground to air
- Additional costs
  - Paid by shipper or customer depending on reason

# Purchase Orders

## B2B Digital Transaction Models

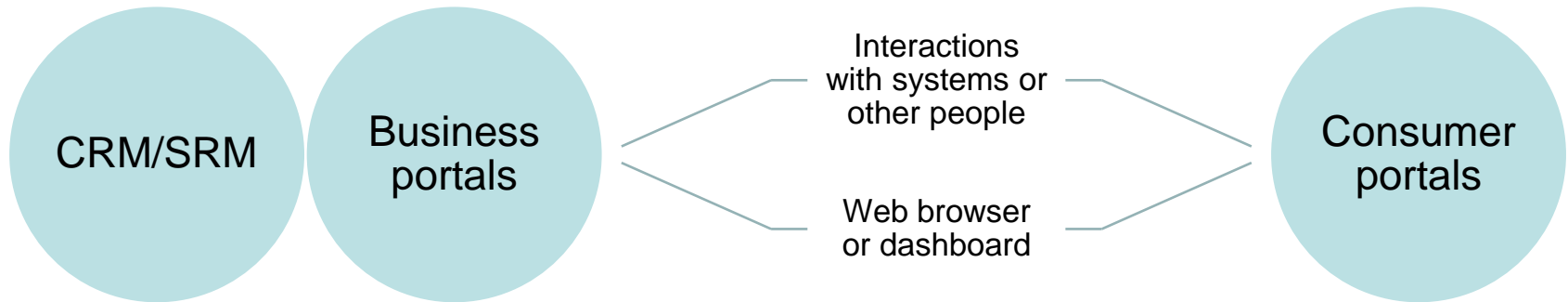
Exchange types

- Independent
- Private
- Consortia
- Virtual



# Purchase Orders

## Portals



### Multiservice websites

- E-mail
- Personalized home pages
- Online shopping and search
- News

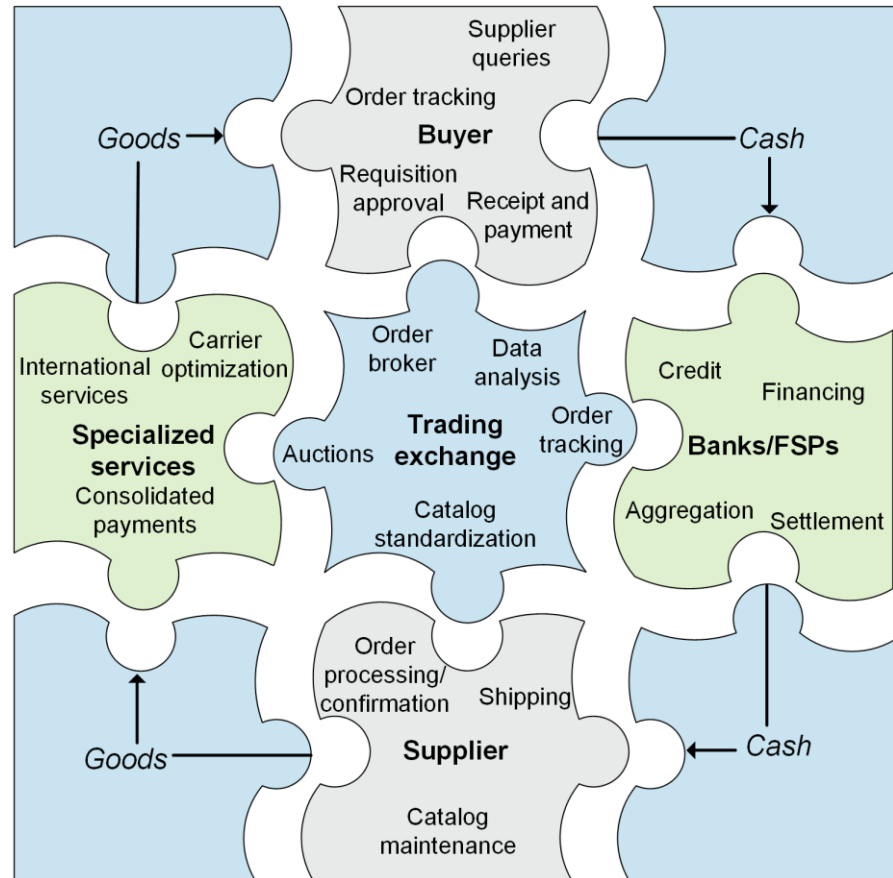
### Intranets and extranets

- Authentication and security
- Read-only exceptions, forecasts, demand-pull signals
- Dynamically aggregate internal and external information

# Purchase Orders

## Trading Exchanges

- Hub for multiple parties
- No individual interfaces needed





# Purchase Orders

## Auctions

- Classic or forward auctions
- Reverse auctions
- Dutch auctions
- Demand management auctions
- Stock-market style auctions



Dutch auction named after Dutch tulip auctions. Dutch auctions are used for U.S. Treasury securities.

# Purchase Orders

## Trade Exchange Benefits and Risks

### Benefits for Buyers

- Purchasing agreement control
- Standard product specifications
- Lower administrative, transportation, logistics, and unit costs
- Faster time-to-market
- Catalog accuracy

### Risks for Buyers

- Lower-quality goods
- Nonconformance
- Product rework/returns
- Long-term loss of suppliers and fewer skilled suppliers
- Ruining years of relationship building

# Purchase Orders

## Trade Exchange Benefits and Risks

### Benefits for Suppliers

- Automatic connections
- Wider market, all inventory
- Faster order to cash
- Better future bidding
- Cheaper transactions, transportation, and logistics
- Less replenishment lead time
- Supply/demand collaboration

### Risks for Suppliers

- Reduction in revenue/unprofitable margins
- Option contracts consume capacity
- Fewer internal investments
- Business continuity risk
- Buyers use seller's information to buy elsewhere
- Exchange integration costs

# Summary and Key Insights

## A. Sourcing Strategy and Decision-Making

- **Make-or-Buy Analysis:** Focus on whether an activity is a *core competency*, and weigh risks of losing internal capabilities.
- **Total Cost of Ownership (TCO):** Acquisition cost is often a minor part of overall cost; include landed cost, process change, and ongoing operational costs.
- **Outsourcing & Offshoring:** Offers benefits like cost reduction and lower capital investment but involves risks such as political instability, lead times, and reverse logistics.

## B. Sourcing Requirements

- Sourcing must consider multiple factors: cost, quality, delivery, lead time, capacity, design collaboration, sustainability, and time to market.

## C. Category and Supply Base Management

- **Segmented Sourcing Strategy:** Tailors sourcing efforts by supplier importance and spend volume.
- **Portfolio Analysis:** Guides supplier relationship intensity based on mutual dependency.
- **Right-Sizing the Supply Base:** Eliminates redundancy, manages risk, and aligns with future demand forecasts.

## D. Supplier Selection and Evaluation

- **Evaluation Criteria:** Includes value-added services, CSR, lead times, cost structures, and collaboration potential.
- **Principled Negotiation:** Emphasizes problem-solving over adversarial tactics—focus on interests, not positions.

## E. Contract and Purchase Order Management

- **Contracts:** Must cover pricing, delivery terms, payment methods (trade credit, open account, L/C), and compliance.
- **Expediting & Tracking:** Should be used sparingly and with clear justification (e.g., poor forecasts or inventory issues).
- **Digital Tools:** B2B platforms, portals, and trade exchanges help streamline procurement but carry buyer/supplier risks (e.g., quality, margin erosion, confidentiality).

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