

## Global Sourcing – Complex, Non-Intuitive & Multidimensional Problems

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**Introduction.** Sourcing Managers of Global 2000 companies are focused on reducing spend to increase Earnings Per Share (EPS) for their companies. Sourcing complexities, combined with a lack of time, capability and tools to tackle difficult issues cause millions of dollars to be left on the table. World-class sourcing organizations are using optimization-based sourcing tools to tackle the complexity of today's sourcing challenges that are non-intuitive, multi-dimensional problems.

**Overview.** Why do world-class purchasing managers need optimization capabilities for Strategic Sourcing?

1. Remove Inbound Supply Chain Inefficiencies
2. Optimize Supplier And Product Selection
3. Capture The Total Value Impact
4. Optimize Supply Constraints
5. Analyze Multi-Item Sourcing Problems
6. Leverage Volume Discounts
7. Analyze Yield Effects And Tradeoffs

**Understanding Optimization-Based Sourcing Tools.** Most sourcing managers are still handicapped with two-dimensional spreadsheets incapable of handling multi-dimensional sourcing problems. Because the complexity of these sourcing problems has outpaced the capabilities of spreadsheet models, the usual approach is to simplify the problem to the point that it can be handled by the spreadsheet software that you already have. The result – organizations are leaving millions of dollars on the table, under-analyzed.

Why should you care? Purchasing costs have increased from 20 cents of every revenue dollar to 60 to 80 cents. This significant change is a result of mass customization of products and services and subsequent outsourcing of finished components.

In shareholder-value focused organizations, a new, powerful purchasing philosophy is imperative. The new philosophy is being referred to as Strategic Sourcing Management.

Strategic Sourcing Management (SSM) is a new purchasing model with a focus on:

- analytical planning, processes, and actions to drive results – year after year
- reducing costs without sacrificing quality
- defining sourcing strategies aligned with business objectives
- optimizing all aspects of the inbound supply chain
- removing unnecessary costs from the supply system
- improving strategic supplier relationships
- impacting all aspects of business (Quality, Operations, Supply, R&D, Promotions)
- providing a source of competitive advantage

In their December 2001 report, AMR Research states, “Strategic sourcing is the real ROI engine of Procurement and will generate \$350 billion of value in the United States alone.” Strategic Sourcing Management (SSM) optimizes the lifecycle performance of inbound goods and services by focusing on Total Cost of Ownership (TCO). In addition to other qualitative factors, SSM takes into account:

- cost of the product itself
- costs and risks associated with shipping a product from a particular location to a particular destination
- costs associated with storing the product and preparing it for sale

Why do world-class purchasing managers need optimization-based decision support capabilities for strategic sourcing? Optimization-based sourcing applications are designed to tackle the analytical complexity of today’s sourcing problems and provide users the answers they need to make the best non-intuitive, multi-dimensional decisions. These applications offer a platform-independent, web-based solution designed to capture all of the costs, relationships, and real-world constraints that affect the total cost of ownership of any products or services that are sourced in day-to-day operations. These new applications enable the modeling of purchased goods into sourcing centers of excellence (COEs), automating the definition of purchasing strategies and the selection of suppliers based on business objectives. Users can model the optimal inbound supply system by utilizing sophisticated ‘what if’ analyses while bundling and un-bundling items and inbound supply chain cost elements.

For companies seeking TCO, these new applications are taking “state of the art” sourcing to the next level. How are world-class purchasing organizations using these applications?

1. Remove Inbound Supply Chain Inefficiencies – Strategic Sourcing Management represents the largest cost reduction opportunity for companies because 80% of the costs and risks associated with supply chains are locked in by business decisions made at the sourcing design stage.
2. Optimize Supplier And Product Selection – Sourcing managers have to deal with suppliers who have multiple shipping locations, multiple receiving locations and different solution offerings from different supplier products.
3. Capture The Total Value Impact – A productive Strategic Sourcing analysis must extend beyond traditional unit cost, profit margin and transportation cost analysis, taking into account:
  - The quality of the product
  - Supplier capacity
  - Supplier reliability and flexibility
  - Turnaround time
4. Optimize Supply Constraints – Any global organization is faced with supply constraints driven by supplier capabilities, embargoes, tariffs and local content. Companies need to support a myriad of business constraints at multiple levels of details with a dynamic capability at planning and contract negotiation process.

5. Analyze Multi-Item Sourcing Problems – Many of the savings opportunities available are actually lost by purchasing managers at the strategy formulation level because they do not bundle the basket of goods correctly. Depending on how well a purchasing manager defines the sourcing basket with multiple items will determine whether they capture the leverage that enables lower costs, ensures supply and enhances supplier relationships.
6. Leverage Volume Discounts – Sourcing managers have to take into account multiple volume discounts offered by suppliers at various purchase volumes and perform a true TCO analysis.
7. Analyze Yield Effects And Tradeoffs – Most sourcing analysts avoid factoring “yields” into their sourcing analyses because current spreadsheet models cannot handle the complexity. For example, a certain percentage of a chemical batch will always be unusable (just as a certain amount of paint will stick to the can), food products have associated wastes (bacon is partly fat that disappears in cooking) and high-tech components have defect rates. Moreover, these waste or yield factors often vary among products offered by different suppliers, and the cost associated with this waste can be substantial in high volume purchases. If one supplier offers a product that costs 3% more but has 5% greater yield, this supplier would deliver the true lowest cost under a multi-variant TCO analysis.

**Summary.** The Strategic Sourcing business foundation is both high impact, controlling more than 60% of companies' total spend, and highly complex, supporting a multi-dimensional and often non-intuitive decision making process. Advanced optimization technology is central to solving sourcing complexity and delivering the lowest Total Cost Of Ownership (TCO) sourcing model.

## **REFERENCES**

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