

Global Supply Chains Step by Step: How to Develop

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Abstract. To be competitive in today's global marketplace, and to serve global operations, supply chains must also be global. This paper provides a step-by-step approach to global supply chain development and identifies challenges, complexities, and strategies for building multi-national supply chains

Domestic vs. Global Supply Chains.

Current State of Global Supply Chain Activities. The expectations of top management of major corporations have changed significantly in recent years. They now realize that good management of supply chains, including purchasing, materials management, transportation and logistics management, quality management, and time management can make major contributions to the bottom line and help their organizations gain and maintain competitive advantage. Globalization is now accepted as a "way of life," the normal way of doing business. Companies must adopt a global view of their operations in order to survive. Many corporations are still in the domestic paradigm and are not aware of, or taking advantage of, improvements and benefits that could come from a global supply chain.

Changing World Situation, Growing Need for Global Supply Chains. Some changes that are in progress that affect globalization of supply chains include: more investment by U.S. industries in non-U.S. areas, increased international spending activity by major U.S. corporations, mergers, acquisitions, and joint ventures involving companies from different countries are linking more organizations across the globe, and more organizations are making purchasing and supply decisions based on total cost of ownership and value added. Many buying and selling markets are worldwide, creating the need for global supply chains. Improvements in transportation and communication technology have made the creation and management of global supply chains efficient and effective to serve either domestic or worldwide requirements.

Corporations are seeking to apply technology and immediately obtain returns from technological investment before obsolescence occurs. Firms that have invested in ERP technology such as SAP, Oracle, J. D. Edwards, etc. try to leverage their return on this investment. Utilizing this type of technology to optimize global operations and to expand and link systems and applications across business units worldwide provides increased capability to establish and manage global supply chains. A growing participation by companies in buying and selling consortiums is also impacting global purchasing and supply chain activity. Such arrangements intensify the need to gain competitive advantage vs. competitors' supply chains.

Global Supply Chain Objectives

Overall Objective of Global Supply Chains. Have in place the global supply chain configuration that results in meeting or exceeding worldwide customer (internal and/or external) expectations at the lowest cost.

Specific Objectives and Expectations of Global Supply Chains. In general the objectives of global supply chains are the same as domestic supply chains. The main difference is in the scope of the supply chain and the number and types of participants that may be present.

- Leverage spend (across business units and geographic boundaries)
- Align Incentives for integration of activities (buyers, suppliers, end-users) to support organizational goals and strategies
- Optimize supply chain operation (no. of members, capabilities, costs)
- Reduce inventories across the chain
- Reduce all costs (item costs and supply chain operational costs)
- Assurance of supply of right quality items to support operations

Global Complexities. Sourcing in multiple countries brings with it a number of considerations not encountered domestically. Some of the complexities include:

- Currency exchange and risk
- Countertrade opportunities and requirements
- Varying laws and jurisdictional questions
- Cultural differences
- Language differences
- Labor and training availability, practices, laws, regulations
- Transportation, packing, shipping, storing, import, export, customs
- Security: materials, products, personnel, intellectual property

Challenges and Barriers to Building Global Supply Chains. In the varying environments encountered internationally, there are a number of challenges and barriers involved in building global supply chains. Many of these are rarely if ever a concern with domestic supply chains. Some of these include:

- Uncertain political stability, self-serving governments
- Lack of infrastructure in some countries (roads, port facilities, trained labor, utilities, communications)
- Lack of critical market mass in particular countries
- High transaction costs
- Requirements to use in-country agents or partners and local content requirements
- Lack of potential for repeat purchases
- Slower adoption of e-business than in the domestic market
- No or limited free trade zone availability
- Partner/contract limitations requiring bidding for all procurement activities and inhibiting alliance-building
- High logistics and transportation costs
- Different time zones (communication difficulties)
- Financial risks are higher, e.g, potential for war, terrorism, government changes
- The nature of global activity (may be fragmented and/or scattered)

- Long/unpredictable supplier lead times
- Protectionism (tariffs, duties, quotas, inspections)
- Limited number of qualified global suppliers
- Difficult to link global project work to "run and maintain" global activities
- Limited availability of trained personnel for purchasing or supply management positions

General Approach to Global Supply Chain Management.

Developing Global Supply Chains. The development of global supply chains requires the same information as the development of domestic supply chains but, in addition, also requires additional information on subjects that include: international logistics, laws, customs, culture, ethics, language, politics, governments, and currency. Team approaches should be used for developing global supply chains, include on teams all departments or organizations who will be affected by the supply chain. What, when, and where items are required from the supply chain must be well-defined. Required items must also be completely specified and quantity demand forecasts prepared to guide potential supply chain members. Sources of potential supply chain members include: international expansion of domestic suppliers, current or potential suppliers in the target country or country of international operations, current or potential suppliers in third countries. Supplier qualification evaluations must include ability to conduct international operations and to meet international requirements in addition to the usual domestic considerations.

Implementing Global Supply Chains. After identification of supply chain partners, an implementation team should be identified and used to plan and conduct the actual implementation of supply chain operations. Processes and procedures need to be documented in detail and tested or piloted before full implementation. Training for all participants in new or revised procedures and processes must not be overlooked. Metrics for administration and evaluation of the operation of the supply chain must be identified and agreed upon by the members of the supply chain. A plan and schedule for implementation and subsequent administration and evaluation of supply chain activities and operations must be developed by the implementation team.

Maintaining Global Supply Chains. Regular evaluation using agreed-upon metrics followed by corrective action as necessary will help assure that expected benefits will be achieved. A program of continuous improvement review will assure that the supply chain remains effective and efficient in achieving its goals.

Step by Step Approach for Developing Global Supply Chains, A "best practice" Framework.

1. Form a cross-functional global supply chain development team
 - Include all affected parties, internal and external
 - The team composition may change as development and implementation proceeds
2. Identify needs and opportunities for supply chain globalization
 - Determine the requirements your supply chain must meet
 - Commodities, materials, services
 - Dollar value of materials and services procured

- Importance of commodities, materials, and services to achievement of company strategic objectives
- Performance metrics for qualification and evaluation of suppliers
- Determine the current status of your supply chain "as is"
 - Suppliers of materials and services
 - Customers (who, where, what products)
 - Commodity markets (major markets procured from)
 - Current performance, problem areas
 - Competitiveness (cost, quality, delivery, responsiveness)
 - "Fit" of your current supply chain with your operational requirements
- When determining supply chain requirements and current status, use a framework such as the iSource Global Enabled Supply Chain Map (*iSource Business*, August-September, 2002).

The main components of this particular framework include the following items:

- Order/Demand capture
 - Supply chain planning
 - Supply chain event management
- Sourcing
 - Trading exchanges
 - Commodity team and supplier collaboration
 - Spend analytics and supply strategy
 - Content management
 - Auctions
- Procurement
 - Supplier relationship management
 - Content management
 - Marketplaces
- Fulfillment
 - Order management
 - Call center operations
 - Sales and marketing support
 - Warehousing, inventory management and deployment
- Logistics
 - Inventory management in motion or at rest
 - Physical management of movement of goods and resources
 - Transportation
- Payment
 - Electronic funds transfer
 - Procurement cards
- Customer Relationship Management
 - Content management
 - Channel management and customer analytics
 - Reverse logistics/material and/or merchandise returns

All of these are operational dimensions of supply chains which must be identified, considered, and included in any determination of requirements and assessment of current status of supply chains.

3. Determine commodity/service priorities for globalization consideration based on needs and opportunities
4. Identify potential markets and suppliers and compare to "as is" markets, suppliers, and supply chain arrangements, operations, and results
5. Evaluate/qualify markets and suppliers, identify supplier pool (determine best ones based on likely total cost of ownership (TCO), and best potential to meet or exceed expectations and requirements)
6. Determine selection process for suppliers, e.g. request for proposal (RFP), bid invitation, point system, past performance, references, reverse auction, negotiation, etc.
7. Select suppliers or confirm current suppliers
8. Formalize agreements with suppliers
9. Implement agreements
10. Monitor, evaluate, review, revise as needed

Strategies and Tactics. Some strategies that are useful in building global supply chains include: optimize the size (determine the best number of suppliers to optimize cost and performance) of the supply base; search globally for potential suppliers; use strategic supplier alliances; conduct total cost of ownership analysis on all significant buys; use suppliers that practice total quality management; use integrated supply management as a means of increasing value while reducing cost and complexity of the supply chain; conduct reverse auctions to determine price/cost reduction potential.

Tactics that are useful in building global supply chains include: synchronize information and material flows, i.e. match the information with the material flows to improve ability to monitor supply chain activity and performance; rationalize the supply base (reduce to the optimum number of suppliers); provide suppliers with accurate forecasts of demand so they can provide the required supply at the times required and at the lowest total cost; determine performance objectives for supply chains and develop metrics and measurements to determine how well they are being met; minimize inventory investment by using supplier managed inventories or just-in-time with electronic linkages to communicate and release.

Some Key Enablers for Building Global Supply Chains.

- Top management vision with proactive, visible support
- Collateral change-management initiatives
- Organizational procurement effort moderately or highly centralized to maximize leverage of spend

- A diffusion of information systems that capture detailed spending activities by commodity, business unit, supplier, and geographical area or country
- Mutual mentoring/problem solving/synergy among members of the supply chain (the supply chain is assembled by utilizing the core competencies of each member)
- Responding to host country's interests without damaging supply chains
- Organization has a structured and active strategic sourcing process
- The organization's culture allows for a total cost of ownership philosophy
- Quality certifications can be captured for key global suppliers
- Reporting capabilities for performance measurement of supply chain activities and results
- Supply chain member integration of quality and spend data, organized by company, business unit, geography, commodity or service category, and supplier
- Facilitated information links between and within firms
- Participants in the supply chain have a "boundary-spanning" perspective (as opposed to narrow or limited vision of business processes)
- Building persuasive business cases that demonstrate the new way to do business, i.e. building effective supply chains is a compelling economic issue that will improve the bottom line of business units and the overall organization

Elements of Total Cost for International Sourcing. (adapted from Monczka, Trent, Handfield, 2002)

- Base price
- Tooling costs
- Packaging
- Escalation
- Transportation
- Customs duty/tariffs
- Insurance premiums
- Payment terms and fees for payment transactions
- Documentation fees
- Port storage fees
- Port, terminal, and handling fees
- Customs broker fees
- Taxes
- Communication costs
- Travel costs
- Inventory carrying costs

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