

# ROAD TO GROWTH AND PROFITABILITY STARTS WITH EFFECTIVE SUPPLIER RELATIONSHIP MANAGEMENT

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## ABSTRACT

Supplier management has a lot more to it than meets the eye. Many consultants and managers thought of supplier management as a tool to reduce their annual spend. Though this line of thinking is right on the mark, there is a lot more here that we are overlooking. The supplier relationship is not just about consolidating the supplier base, establishing long-term contracts and leveraging spend potential. It is also about new product development, design for manufacturing and assembly, effective production planning and total quality management.

Traditional customer-supplier dynamics are changing with the coming of new models of relationship, such as Vendor Managed Inventory and B2B Exchanges, and the growing emphasis on extending operations initiatives such as Six Sigma to suppliers. A company looking to improve the quality of its product may turn to Six Sigma or Just-In-Time production approaches. However, this company cannot achieve any significant quality gains unless its suppliers, in turn, can gear up to the raised operational expectations. A supplier would require business commitment backed by a trustworthy relationship for it to make any significant investments to improve its operations.

Most companies with a significant spend in acquiring products and services are caught in a whirlpool today, unable to decide what should be their purchasing and supplier relationship strategies. Companies are asking questions such as – What should they make and what should they outsource? How extensive should their supplier base be? How should they collaborate with suppliers on production planning and new product development? What Exchanges should they join? How should they select suppliers? What software systems should they invest in? Through strategic outsourcing and seamless collaboration with key suppliers in day-to-day operations management and new product development, some companies have achieved up to 30% reduction in total material spend and reduced new product development time by up to 40%.

Key words: Supplier management, sourcing, purchasing, supply chain management.

## BACKGROUND

Purchasing or Sourcing is widely recognized today as a major source for improving profitability. A McKinsey survey of electronics companies observed a gap of up to 19% in profitability between a least and a most successful company, 13% of which is due to a lower costs of goods sold. Suppliers play an intricate role – as illustrated in this paper – to achieve such lower values for costs of goods sold.

Purchasing of goods and services, from legal services to parts and assemblies, amounts to some 75% of total spend for most companies. Too often companies look at purchasing and supplier management from a short-term direct costs point of view. A study by The Boston Consulting Group of 100 major companies involved in substantial outsourcing activities shows that a majority of Western companies outsource primarily to save overhead or short-term costs, which results in a piecemeal approach to supplier management with a large number of vendors that is more difficult to manage. In contrast, the Japanese are known to outsource primarily to improve the efficiency and quality of their products and processes.

Rapidly changing technology and market dynamics are creating opportunities that, if not leveraged, will lead to loss of customers and market share. Exponential growth in communications technologies, including the Internet, has provided a cost-effective means to establish real-time partnership between the customer and supplier. This partnership can extend through all phases of the product realization process. Production technology has brought more products into the list of ‘commodities,’ thus making it easier to identify key value-adding components and technologies. The Internet has increased the ease of communication between a customer and its supplier and increased the physical distance between them as manufacturing shifts to low-wage economies. Some of these evolving dynamics are evident in the growth of e-business collaboration software. CIM data reports worldwide revenue for software and

services in the domain it calls “collaborative product definition management,” which grew 62% in 2000, reaching \$2.86 billion.

**MAKE VERSUS BUY**

Make vs. buy decisions are mostly reactive based on an external force or factor such as new product introduction, expansion of facilities, loss of business and so on. As with the annual review of strategic initiatives and the company’s profit and loss statement, resource allocation should be reviewed on an annual or biannual basis. What to make or what to outsource is typically a factor of a company’s *core competencies*.

Core competencies are abilities that provide maximum return on investment and act as a barrier for other companies trying to enter that business area. Core competencies are based on skills or knowledge sets and not products or functions. With changing customer needs and satisfaction factors, the means of realizing them is also changing on a continuous basis. What could be considered a core competency or a critical value chain

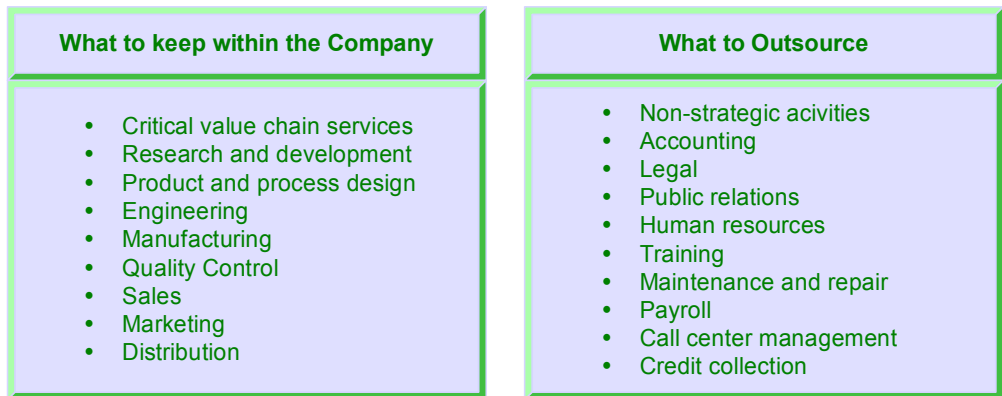
activity today may not remain so tomorrow. A periodic review may open up new vistas for outsourcing, thus freeing up resources for better allocation with higher returns. Outsourcing also leverages investments, experience and core competencies of the supplier company. Nike is perhaps one of the best examples of identifying critical functions and outsourcing the rest. 100% of its manufacturing is outsourced, except for key technical components of the Nike Air System. Nike rather focuses on design, research and development, and marketing, sales and distribution. Figure 1.0 lists some typical functional areas that could be outsourced. As the Nike example shows, Manufacturing or parts of it (or of any other value chain service) could be outsourced based on competitive and customer requirements. Outsourcing provides another big advantage: it provides flexibility and lowers risk in this rapidly evolving marketplace.

**Strategic Outsourcing**

Having defined core competencies and other value-adding services, what stops a company from outsourcing everything else? Nothing does, if the supplier markets are completely reliable and efficient – a utopian dream, which does not exist because of concerns about trust and quality of products and services. To overcome these concerns, companies prefer

to maintain a degree of control on the supplier’s activities. Companies outsource when the transaction and management costs of these controls exceed the benefits of keeping the job within the company. When analyzing make vs. buy decisions, companies must answer what degree of competitive edge an activity will provide; what level of loss the company will suffer if the supplier market for the activity fails (strategic vulnerability); and how the company can balance strategic needs with outsourcing benefits. Quinn and Hilmer (1995) outline the company strategy in such situations as a factor of competitive edge and strategic vulnerability and outline outsourcing strategy based on the

Figure: 1.0



degree of control required (Figure 2.0).

**Benefits of Strategic Outsourcing**

Through strategic outsourcing, companies can lower their long-term capital investments and leverage their key competencies. They can also pass on ownership and risk management to the suppliers. For example, a leading wine production and distribution company outsources most of its grapes, thus transferring the risks of weather, land prices and labor management to the suppliers.

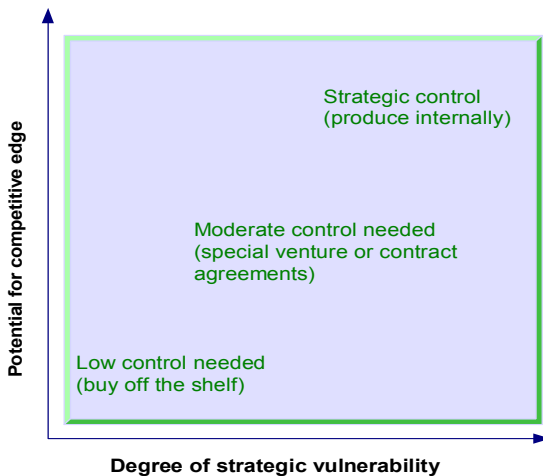
Companies no longer enjoy the luxury to introduce new products and services at their own pace. By involving multiple best-in-class suppliers working simultaneously on different pieces of the new design, companies are in a position to drastically cut the time-to-market. Suppliers have better depth and knowledge in their specific areas than the buying company could possibly have. Furthermore, the company does not have to invest in monitoring the failure risks or developing the next generation of those components. Outsourcing is becoming a major strategy to tap into the quick response time and innovative capacities of smaller but niche companies.

## Risks of Strategic Outsourcing

Companies run a risk of losing critical skills if the suppliers they helped to develop the required capabilities refuse to do business with them at a later date. By that time the company might have lost skills and a knowledge base in that area. By gaining the business of key buyers, the supplier might get significant competitive advantage to control other characteristics in industry, thus limiting the options available with the buyer companies.

This leads us to another potential risk, which could be termed as the power of suppliers (Porter's Five Forces). When priorities differ, suppliers might reach out to the market directly or may even try to resell the technology learned from one buyer-company to another buyer-company. The supplier could potentially hold the buyer 'hostage,' and the buyer needs to ensure that enough safeguarding strategies are in place. Companies could introduce safeguards in their legal agreements. Some companies even install vital equipment at the supplier's shop floor while retaining the ownership, thus maintaining some leverage for times of conflicting interests. Another management approach to smoothly resolve all outstanding issues is to maintain close contact both at the line and management levels. Nike posts its production specialists to its supplier companies who work in close coordination with

Figure 2.0  
Quinn and Hilmer (1995) - Competitive advantage versus strategic vulnerability



the line management, and also invites supplier management for periodic review with Nike's top management. This way the channels of communication are open, and any rising situation could be addressed quickly between the two managements. Of course trust must be an integral part of this outsourcing relationship.

## GAIN COMPETITIVE ADVANTAGE THROUGH COLLABORATION AND LONG-TERM RELATIONSHIP

Not only do suppliers account for as much as 50% to 80% of manufacturing costs, suppliers also impact company performance in new product development cycle time, order fulfillment time, production lead time, product quality and product costs. Therein lies the potential to gain a significant competitive advantage through effective supplier management.

### Reducing Complexity

Cost of a product is directly related to its complexity. In simpler terms complexity is the number of unique components, sub-assemblies, and assemblies that together constitute the product or the number of models or variants. Complexity is mostly added by design and not because of customer requirements. In fact, what the customer sees is the price and would be happy to see it reducing. A McKinsey study (1997) shows that a successful computer company has approximately one-fourth the number of components than a less successful computer company. Companies can reduce the costs of goods sold by reducing the number of unique components through measures such as standardizing parts and subassemblies. In order to achieve this, companies must work in close relationship with their suppliers. Many of these components and sub-assemblies will be sourced from suppliers, and they are the ones best qualified to innovate and standardize.

### Redesigning Products

Design for Manufacturing (DFM) or Design for Assembly (DFA) are very powerful but simple concepts. Computer Aided Design (CAD) has provided design engineers with all the flexibility they need to churn out magnificent designs. Is that, however, what the customer needs, and can they be produced at optimal cost? Cost of producing goods will be very high if there is no communication between design and manufacturing. This is evident from the up-to-35% savings (McKinsey 1997) that companies have achieved by redesigning. The focus should be to have a design, which the customer is willing to pay for and which can be manufactured at minimum costs. Supplier input is critical while designs are being developed and finalized. Suppliers should be involved in the product designing process right at the product development stage.

### Vendor Managed Inventory (VMI)

In a supplier-managed inventory agreement, the supplier sells inventory to the customer, provides some sort of storage unit, handles the receiving function, performs the physical counts required, and fills the storage before all units are consumed. To make this successful, the supplier

has to understand customers' consumption pattern and maintain accurate details of inventory levels. The company has several advantages from this arrangement. Its inventory levels are low, it does not have to worry about going out of stock, and its overheads, such as receiving and physical counts, are reduced. From the supplier's point of view, it is a value-added service offering and ensures a long-term relationship with the company. However, this relationship is completely based on trust between the two protagonists. The company must trust the supplier's ability to deliver on time without going out of stock. The supplier must trust that the company will give long-term business and provide all required assistance, such as information about demand patterns, to help it manage the job effectively.

### **Collaboration In Planning, New Product Development, and Manufacturing**

Companies that can effectively integrate their supplier base with production planning, design, product development, materials management, manufacturing and purchasing operations benefit from reduced costs, shorter lead times, simpler designs, shorter time-to-market, and reduced costs. Companies as diverse as Motorola, Toyota and Xerox have initiated several programs for their internal functions to work closely with suppliers. Some of these companies have achieved up to 35% reduction in purchased material costs, increased inventory turnover by over 50, and reduced new product development time by 40%.

### **Six Sigma**

Six Sigma has significantly increased profitability for market leaders such as GE, Honeywell and Motorola. Six Sigma is not just a statistical tool; it is a strategy, a philosophy, and a management thinking. Six Sigma drives towards excellence and is all about reducing variance in processes. The Six Sigma approach identifies customer requirements, converts them into organizational priorities, and identifies and improves specific areas to meet and exceed customer expectations. Six Sigma aims for a dramatic 60-70% improvement. An average company is known to operate at 4 sigma levels, which translates to 6500 defects for every million opportunities. A Six Sigma company has only 3.4 defects. Is it possible to achieve this level of excellence without equally capable suppliers? Encouraging key suppliers to invest in Six Sigma, and deploying joint Six Sigma teams, are necessary to achieve the required results in profitability and customer satisfaction.

## **OTHER FACTORS INFLUENCING SUPPLIER MANAGEMENT**

### **Global Sourcing**

In any visit to a Wal-Mart or a Target, 9 out of 10 times the shirts, plastic ware, or toys displayed are from China, Honduras or any other Asian or a South American nation. The global market economy dictates the sourcing patterns. The vast gap in labor wages between Western and developing economies makes it very attractive for major firms to source globally. However, this pattern does not have to limit itself to big companies. Communications technology, including the Internet, has made it much easier for smaller firms to source suppliers from far away at much lower costs. If managed effectively, this can become a source of competitive advantage. B2B exchanges provide a medium to reach out to global suppliers. Standards such as ISO 9000, and global expansion of credit rating agencies such as Dun & Bradstreet, provide a means for companies to ensure product and service quality without taking expensive international trips.

### **Competing Supply Chains**

Competition is changing. It is no longer a Ford competing with a Toyota; instead it is one supply chain competing with another supply chain. The older paradigm dictated companies to vertically integrate to achieve competitive advantage. This has changed, as companies would rather invest in areas of their core competence to build competitive advantage and gain maximum return on investment. This does not mean vertical integration is no longer important.

#### **Supplier Collaboration leads to:**

- reduced material costs
- shorter time-to-market
- reduced inventory costs
- shorter lead times
- simpler designs

After all, a path-breaking model of laptop computer from Sony can be successfully launched and made available in the retail stores to meet demand only if the whole supply chain, including distribution and retail, is proactive and has attuned itself for the upcoming changes. This is where strategic relationships, with part ownerships in some cases, up and down the supply chain are gaining prominence, leading to a virtual vertical integration.

### **Technology**

The last decade or so has seen a rapid development in information technology. The role of technology in supply chain management started with EDI (Electronic Data Interchange), which became a preferred mode of interaction between big buyers and their satellite suppliers. While it reduced the cost-per-unit transaction, it was not very popular because of the high level of investment, which

required very high transaction levels to break even. The software boom started with ERP (Enterprise Resource Planning) systems followed by web-based marketplaces. Most of the ERP vendors, such as J.D.Edwards and SAP and some specialized supply chain vendors such as i2 and Manugistics, have products meant for materials and supplier management. Integration of the company and its key suppliers' ERP and other supply chain management systems can be very helpful in collaborative planning, replenishment and forecasting (CPFR), potentially leading to a just-in-time system with zero inventory levels, and reduced costs of transaction in day-to-day management. The B2B marketplaces, which provide a medium for supplier and buyer companies to transact through the Internet, lost some steam after the initial hype in 1999-2000. They are still a good source for buying commodity and MRO goods. As of 2001, 87% companies surveyed by NAPM and Forrester Research saw the Internet as important for future development. Twenty-seven percent of respondents have reported savings from Internet activities, and this trend is expected to grow both in percentage of companies using the Internet for purchasing and supplier management activities and the magnitude of savings. Other web-based supplier-specific applications for design review, sharing of documents through common folders, and knowledge management could be helpful.

### Mergers And Acquisitions

Many mergers and acquisitions fail to make a breakthrough. One quick way to make some headway is by consolidating spend. When two companies come together to form a single new entity, a lot of resources such as travel services, MRO spend, and perhaps some direct material are duplicated. (Two separate buffer stocks for the same stock keeping unit (SKU) could be replaced by a single buffer stock.) If effectively managed, it could lead to a 10-15% reduction in total spend. The increase in supplier base is another opportunity to increase competitiveness among suppliers and enlist support of the best of the lot.

### SUMMARY: STRATEGIES FOR EFFECTIVE SUPPLIER MANAGEMENT

❑ Align departmental incentives: Remove conflicting objectives between engineering, manufacturing, and purchasing, which may form barriers for effective supplier management. Purchasing may place consistent high volume orders because good discounts would please management without looking into the inventory build-up, manufacturing may accept marginal products from suppliers to meet production rush, and engineering inflexibility on tight tolerances may lead to high manufacturing costs.

❑ Select suppliers prior to starting any new product developmental work so that suppliers are involved in the process right from day one. Such suppliers (tier 1) would provide complete assemblies and in turn may source components from other suppliers (tier 2). This reduces the number of suppliers to manage. Companies must form long-term partnerships with tier 1 suppliers and encourage them to invest in technical and production capability. A good strategy would be to keep an alternate supplier as a back up in case the chosen supplier is unable to keep up with expectations. Relationships should be built on trust and focused on a win-win situation.

❑ Consolidate the supplier base. Identify key suppliers who bring unique expertise and commodity suppliers. While commodity units could be bought on a competitive basis every time, establish long-term partnerships with key suppliers. Consolidation in itself does not help. The advantage from supplier consolidation comes when limited company resources could be effectively used to coordinate and manage the supplier base to derive maximum value

#### Top strategies leading to world-class performance

Strategy	Best-in-Class performance
Reduce number of Suppliers	From 5-10% to up to 50%
Involve Suppliers in product design	From 5-10% involvement to 90-100% involvement
Increase length of committed relationship	From 1-2 year contracts to life term relationship
Production Planning	From Push to Pull (Kanban)
Operations Management	Drive towards Six Sigma performance
Number of Suppliers per part	From 2-5 to 1-2
Incoming inspection	From up to 100% to zero inspection
Reduce number of unique parts or components	A difference of 4 to 1 between an unsuccessful and a successful company

from the partnership leading to top performance. Further, consolidated demand gives enough enticement to the supplier to invest internally in systems, tools, training and technology to provide the best performance.

❑ Develop a good person-to-person interaction between all levels of the company and supplier's management.

Companies sometimes post their personnel at key supplier facilities so that glitches could be resolved at the source without causing any major problems. Some companies hold regular top management interaction by inviting supplier management for periodic conferences. The idea is to keep the channels of communication open at all levels of both companies.

❑ Encourage key suppliers to implement Six Sigma to improve performance significantly. Identify improvement areas based on the company’s customer’s expectations and deploy joint company-supplier Six Sigma teams to investigate and improve business performance. After a preliminary analysis of warranty data for a computer manufacturer, it was discovered that most of the problems were because of the battery. Rather than putting the onus of the problem on the battery supplier, the company decided to put a joint team on the problem, which after investigation found that the battery was performing well. The problem was the wiring. Finger pointing and the ensuing negative environment were avoided, and the right solution was found without causing any more damage.

**Impact of Effective Supplier Management on Business Performance**

Time-to-Market (New Products)	Reduce development lead time by up to 40%
Total material costs	Reduce cost of purchased material from 15 to 30%
Inventory Turnover	Increase inventory turnover from 6 to over 50 per year
Redesigning based on customer value and manufacturing cost	35% savings in production costs

❑ Implement a bi-directional feedback system. Monitor suppliers on an ongoing basis and share this information with them to identify key areas for improvement. Offer company expertise and encourage supplier to invest in technology, where suitable. Feedback should be both ways. Emphasis should also be on the company and the departmental performance in cooperating with the supplier. As stated earlier, departmental incentives should change from a functional focus to more of a supply chain approach.

**REFERENCES**

[1] Quinn, J.B., Hilmer, F.G., “Make versus buy: Strategic Outsourcing,” Sloan Management Review, 1994.  
 [2] Asmus, D., Griffin, J., “Harnessing the power of your suppliers,” The McKinsey Quarterly, 1993 Number 3, pp. 63-78.  
 [3] Kluge, J., “Reducing the cost of goods sold: Role of complexity, design, relationships,” The McKinsey Quarterly, 1997 Number 2, pp 212-215.  
 [4] Cook, M., “The complexity of managing complexity,” Transportation and Distribution Magazine, 2000.  
 [5] Chapman, T.L, Dempsey, J.J., Ramsdell, G., Bell, T.E., “Purchasing’s big moment – after a merger.” The McKinsey Quarterly, 1998 Number 1, pp 56-65.  
 [6] “Industry Watch,” APICS The Performance Advantage, 2001 March, pp 8-12.  
 [7] Gettinger, M., “Letting Your Supplier Mind the Store,” APICS The Performance Advantage, 2001 March, pp 51-55.