WORKING PAPER

No. 97-01MG January 1997

DRP & Contract Logistics: Alternatives For Distribution Efficiency

by
Richard R. Schrader, M.B.A.

and
Victor E. Sower, Ph.D., C.Q.E.
Associate Professor
Department of Management & Marketing
Sam Houston State University
Huntsville, Texas 77341

Copyright by Authors 1997

The Working Papers series is published periodically by the Center for Business and Economic Development at Sam Houston State University, Huntsville, Texas. The series includes papers by members of the faculty of the Colleges of Business Administration reporting on research progress. Copies are distributed to friends of the Colleges of Business Administration. Additional copies may be obtained by contacting the Center for Business and Economic Development.
DRP & Contract Logistics: Alternatives for Distribution Efficiency

Abstract

The adoption of Distribution Resource Planning (DRP) carries with it many inherent problems. Contract logistics is an alternative to DRP that outsources logistics activities to firms with expertise in logistics. A model is developed which identifies 7 characteristics of firms that should consider contract logistics.
In a globalized business community the never ending search for competitive advantage over competitors has resulted in many companies reexamining their internal strengths and weaknesses. One advantage corporations in the United States have over their foreign competitors doing business in the U.S. is an expansive and specialized knowledge of the U.S. domestic distribution system. In a business environment where more businesses are moving to single sourcing, logistical concerns often win the contract and solidify the relationship between vendor and buyer.

Distribution Resource Planning (DRP) is a specialized tool used to enhance logistical performance. DRP addresses inventory, distribution, and forecasting decisions in order to provide the firm with reduced distribution costs, reduced lead times and increased inventory turnover. DRP processes and disseminates information which allows personnel to make more accurate and knowledgeable decisions.

Today’s large corporation with many regional warehouses, multiple customers in each region, and an array of finished goods and spare parts must be able to implement an effective distribution system and optimize supply channel operations. Many modern corporations such as FMC Corp. and Dow Corning have already adopted Materials Requirements Planning (MRP) to optimize manufacturing decisions and have used DRP to forecast demand and adapt their master schedule to demand (5). FMC and Dow Corning have used a constant link with their consumers to increase forecasting accuracy, alter dependent and independent demand patterns and increase customer service levels while reducing costs and optimizing warehousing and transportation needs.

This paper identifies problems associated with the adaptability of these systems (MRP and DRP) to the overall needs of the enterprise and difficulties encountered when attempting to integrate the two systems into a seamless corporate system which have caused many firms to look for other solutions. With the rapid advance of technological progress, computer applications often become outdated within years and corporations may lose the competitive advantage they once enjoyed because their competitors are implementing more advanced and improved systems.

This paper also addresses a new alternative to DRP which is now available to firms because of the recent development of third-party logistics companies. The new addition to the
transportation industry known as contract logistics allows companies to outsource their logistics function and free themselves from the constraints of proprietary software systems while reaping significant cost reduction benefits. Contract logistics firms allow corporations to focus resources on the core competencies of the enterprise and realize increased competitive advantage without compromising customer service or flexibility.

Outsourcing logistical needs is not beneficial for all corporations and carries with it inherent risks associated with outsourcing vital elements of the operating efficiency of an enterprise. However, seven characteristics of corporations that are candidates for a potential relationship with a contract logistics partner can be identified by examining the nature of contract logistics and viewing successful corporations that have used this strategy to create long-term competitive positioning in the global community.

The purposes of this paper are to identify the contribution DRP makes to a corporation’s logistics function, and to study the realistic implementation of DRP systems at different companies to identify commonalities and differences between the ideological implementation and the realistic implementation of a DRP system. The paper also identifies the appropriateness of the use of contract logistics as an alternative to implementing a DRP system.

**Materials Requirements Planning**

In the early 1960’s technology developed to the point that computers were capable of handling a large amount of information at acceptable speeds for the manufacturing community. Complex tasks that had once been tediously calculated could be relegated to newly developed computer programs. Tasks that had once been calculated monthly or annually could now be calculated daily increasing the relevance of information. Due to the increased accuracy of information, classic manufacturing and inventory tools were revised and improved. Eventually, due to the increased improvements in information technology, the revised tools were slowly integrated and became capable of handling increasingly complex situations. As these revised tools
increased inventory productivity and optimized materials handling, a classic assumption, “customer service levels decrease with reductions in inventory,” was marked invalid. “Orthodox approaches and techniques became open to question, and existing inventory control literature—indeed, an entire school of thought—was marked for reexamination.” (25).

It is no coincidence that the evolution of “resource planning” into MRP coincides with the reexamination of a classical assumption of inventory control. Furthermore, it is no surprise that the 1970’s “MRP Crusade” by Wight, Orlicky, and the American Production and Inventory Control Society (APICS) has been so successful. MRP technology invalidates a formerly expensive constraint, “buffer inventories,” and increases material handling efficiency by addressing the elemental equation of manufacturing across industries. According to Oliver Wight, MRP is a system that simulates the classic manufacturing equation: “What are we going to make, what does it take to make it, what have we got, what have we got to get.” (34) His assumption that this equation is an elemental foundation to manufacturing demonstrates that MRP can work in all manufacturing establishments that must address these questions, and in fact can be used in several different ways such as engineering planning and distribution planning.

Material Requirements Planning (MRP) is defined in the 8th Edition of the APICS Dictionary as:

“A set of techniques that uses bill of material data, inventory data, and the master production schedule to calculate requirements for materials. It makes recommendations to release replenishment orders for material. Further, because it is time-phased, it makes recommendations to reschedule open orders when due dates and need dates are not in phase. Time-phased MRP begins with the items listed in the MPS and determines (1) the quantity of all components and materials required to fabricate those items and (2) the date that the components and materials are required. Time-phased MRP is accomplished by exploding the bill of material, adjusting for inventory quantities on hand or on order, and offsetting the net requirements by the appropriate lead times.” (34)
Although the cost advantages of implementing an MRP system are often generous, the enhanced competitive position developed by the proper implementation of an MRP system is often the impetus for the choice. More and more manufacturers are demanding that their suppliers adopt an MRP system that is compatible with their own, and often supplier and manufacturer are in constant communication using constant telephone and computer connections via Electronic Data Interchange (EDI) in order to speed the transfer of information.

Although an MRP system can offer significant benefits there are many things that can alter the positive aspects of the system and impact the company severely. According to Wight, certain minimum levels of accuracy are required for a successful MRP system. Inventory records must be at least 95% accurate using a daily sampling method known as "cycle counting". At least 99% of the Bills of Material (BOM) and between 95-98% of routings must be 100% accurate. 75-80% of operating personnel should be MRP educated. (34)

The data integrity needs of an MRP system should not be overlooked. Reliable and consistent suppliers are required to supply ("what do we have to get") and deliver ("when do we have to get it") goods accurately in order to identify lead times and component needs. Educated and competent personnel are also needed in order to ensure correct data input so inventory ("what do we have") and BOM’s ("what does it take to make it") are accurate inputs into the MRP system. All incorrect inputs to the MRP system directly affect the accuracy of the output and contribute to system nervousness; thus Wight’s emphasis on accuracy of manufacturing and inventory records as well as personnel training.

Corporations that do not have the minimum requirements for implementing an MRP system are recommended not to attempt implementation until these requirements are met because of the risk of significantly interrupting operations. The implementation process itself is usually measured in years and occurs incrementally. Thus many firms looking for a rapid advantage from MRP implementation do not realize the full benefits in the short-term.
Distribution Resource Planning

Distribution Resource Planning (DRP) has developed as a natural extension of the MRP methodology toward distribution techniques. The purpose of a DRP system is to reduce distribution costs such as transportation, labor, inventory, and overhead. DRP identifies the distribution channel as a whole entity rather than single warehouses and attempts to optimize inventory at each point in the distribution channel. DRP also forecasts the needs of warehouses throughout the distribution channel using the same time-phasing technique that is used by MRP and plans replenishment orders by altering the master production schedule of the manufacturing plant if the company uses both systems and has integrated them properly.

An interesting aspect of the time-phasing technique in the distribution channel is that the needs of a specific inventory item are exploded and matched against the “feeding” warehouse inventory. The result of this process is that the replenishment of each warehouse is dependent upon the needs of the warehouse it “feeds”. If one were to apply this principle throughout the supply chain the only warehouse with independent demand would be the regional warehouse that supplies the customer.

Distribution Requirements Planning (DRP) is defined in the 8th Edition of the APICS Dictionary as:

"The function of determining the needs to replenish inventory at branch warehouses. A time-phased order approach is used where the planned orders at the branch warehouse level are "exploded" via MRP logic to become gross requirements on the supplying source. In the case of a multilevel distribution network this explosion process can continue down through the various levels of regional warehouses, master warehouse, factory warehouse, etc. and become input into the master production schedule. Demand on the supplying sources is recognized as dependent and standard MRP logic applies." (35)

Implementation of a comprehensive DRP system is often aimed at reducing costs associated with getting the goods to the consumer as well as to the manufacturing plant. Firms wishing to
reduce lead times and inventories while reducing capacity requirements can use DRP to effect these desired changes without reducing the customer service level. In fact, DRP systems are often consistent with the JIT philosophy creating a pull system throughout the channel of distribution terminating in the firm’s MPS.

DRP systems also have a number of points that can cause severe system nervousness, increase costs, and disrupt manufacturing if not correctly identified and resolved. Much like its predecessor MRP, accurate input into the DRP system is important. Variability in factors that DRP assumes are constant or correctly inputted such as delivery lead times or instantaneous inventory stock, can cause inaccurate output from the system.

The implementation of a computerized system such as DRP ultimately affects all functional areas of the company. For example, if a firm considers establishing a DRP system there must be several changes in key areas of the enterprise. Since one of the modules in a DRP system is forecasting, what should the company do with marketing’s forecasts? Will Sales be comfortable with the new forecasting technique? Manufacturing planners are going to be reluctant to let the DRP system alter the MPS. Management Information Systems will assume a greater role in the operations of the company, and purchasing’s role will be significantly altered from a buyers position to a supplier certification/buyer position known as the “buyer/planner.” How can a firm contend with the complex execution of a sophisticated system such as DRP? How can a company predict and resolve the contingent problems associated with a massive restructuring of operations?

It should become clear that an integrated implementation team which includes members from all functional areas should be formed to examine the impact of DRP on each functional area and develop a comprehensive company stratagem directed toward optimum enterprise benefits from employing DRP. The development of a “project mission statement” will ensure each functional area is operating toward a holistic approach to enterprise efficiency. Top level management support and interdisciplinary education are the foundation for an effective implementation team.
Possible Alternatives

Because of the complexity of implementing and operating an efficient DRP system and the inherent risks involved with disrupting the normal operations of the corporation many corporations have decided that the undertaking is distasteful. One of the major problems associated with the implementation of a system such as DRP is the inability of such systems to adjust as the corporation grows. Many corporations are currently operating several different systems across functional areas with divergent interfaces. Adopting an Enterprise Manufacturing System (EMS) entails expensive retraining and a separation from the previously utilized system. The development of enterprise wide systems is still underway, and the cost of attempting to integrate divergent computer operations and configurations is becoming prohibitive for many firms.

This problem not only affects the internal interfaces between computers but also interfaces with customers that wish to transfer information between firms. For example, if a corporation decides to implement systems such as DRP and MRP produced by different companies, a significant amount of effort must be expended to integrate the two systems. The computer maintenance department must customize all the interfaces between the two programs. Adding to this problem is customizing the connections between the systems each time the needs of the corporation change. This creates an escalation of commitment to a particular product because of the time needed to train personnel on new systems and increases overall cost due to the constant need to revise the systems.

A common problem also associated with attempting to integrate two divergent systems is that the reliability of the integrated system as a whole is reduced. Disruptions caused by improper operation of the enterprise system can be extremely costly because they impact more than one department and vital information can be lost during repair.
The Adoption of DRP

Masters, et al (7) identified three factors that influenced the successful “adoption” of DRP:

1. Firm Size- Firms of a larger size were more likely to adopt DRP than smaller firms due to the resources required to implement the system and the fact that they had more to gain by the successful adoption of DRP. Firms with a larger distribution task such as the number of shipments per year and large annual freight budgets were identified as firms that would adopt DRP.

2. Complexity of the distribution network- Firms operating with multiple levels and providers were identified as candidates for adoption because of the complexity of the distribution needs of the firm.

3. Complexity of the market structure- Firms with a diverse customer base were identified as possible candidates for adoption due to the increased difficulty of the distribution process associated with satisfying the needs of the diverse customer base.

A field study was conducted on a firm that fulfilled the requirements of the Masters study in order to examine the adoption process more closely. A large computer manufacturer that produced both make-to-order and make-to-stock products was chosen to identify if either factor impacted the decision to adopt DRP. The firm had both a complex distribution network and a global market structure thus keeping with the findings of the Masters study.

Contract Logistics

As American businesses seek to reduce costs, increase productivity and to provide the services demanded by their customers, their use of contract logistics has increased dramatically. In 1995 the market for contract logistics will exceed $20 billion. It is estimated that by the year 2000 this market will grow to $50 billion. (7) Contract logisticians utilize resources and expertise to offer integrated resource management services to clients.
The Council of Logistics Management defines logistics management as:

"The process of planning, implementing and controlling the efficient, cost effective flow and storage of raw material, in process inventory, finished goods and related information, from point-of-origin to point-of-consumption for the purposes of conforming to customer requirements." In plain English, logistics management is the planning, execution and management of goods from their point of origin to their destination, through the use of a network of resources. A resource can be a warehouse, fulfillment center, any form of conveyance from ocean carriers, airlines, truckload carrier to local pick up and delivery companies, selected by a contract logistics company to execute a project.

The growth of logistics has also been driven by retailers' and manufacturers' increased insistence on rapid response inventory replenishment. The idea of rapid inventory replenishment was first articulated in 1919 by Richard "Red" Dupree, General Sales Manager and later Chief Executive Officer of Procter & Gamble. His concept was: "Sell so that we will be filling retail shelves as they become empty." Seventy years later, this idea is reshaping how companies do business and creating a new one: contract logistics. (27)

Contract logistics is the outsourcing of the distribution function. Contract logistics providers invest in assets, dedicate capacity and personnel, and customize information systems and communications in order to improve the productivity and customer satisfaction of their manufacturing and retailing clients. Successful companies have found that delivering the right products in the right quantity to the right place at the right time and at the right cost is a key differentiator today.

The contract logistics industry is a nascent addition to the $700 billion transportation industry that was spawn by a marriage of corporate philosophies such as Just-in-Time and Total Quality Management, changes in the distribution arena such as deregulation, and corporate changes in the adversarial relationships between supply chain partners. According to Jon Africk, principle of A.T. Kearney Inc.'s transportation practice, "The mind-set was win-lose. You were optimizing your function at the expense of another internal function. Under integration, the objectives are
corporations have changed their focus from individual services such as warehousing and distribution and have begun to attempt to integrate all functions of the supply chain. “True integrated logistics is a combination of multiple logistics services provided by a single vendor on a contractual basis. The services must be more than one, bundled or combined. There must be a single point of accountability, and the services should be integrated using distinct or dedicated information systems.” (7)

In 1993 the penetration rate of contract logistics firms was 2.7%, but many expect it to grow to 10% and $47-50 billion by the year 2000.(7) According to an A.T. Kearney survey, one-third of North American corporations have begun supply chain integration incentives with suppliers, and roughly 30% have begun those initiatives with customers. (7) In the United States corporate executives recognize the need for supply chain integration and most are discovering the complexity of the task. Contract logistics has been around for 5-10 years in the United States and is already undergoing growing pains as logistics providers attempt to define the concept itself and the services that should be offered.

**Potential Benefits of Contract Logistics**

Cost reduction is one of the primary benefits of outsourcing logistics functions to contract logistics firms. Cost reduction can be realized by achieving economies of scale, a reduction in the amount of equipment needed to perform the logistical needs of a company such as transportation fleets or warehouse equipment, or a reduction in logistics staffing.

Efficiencies of scale can be realized by corporations that require extensive logistical activities by using the expertise and equipment of a contract logistics firm. Since the logistical needs of a corporation are activity based, the corporation’s usage of contract logistics services grow and shrink with the corporation’s activities. By utilizing the expertise of companies that have already invented an efficient supply chain, companies can reduce duplication of effort within industries that occurs as each manufacturer, distributor, and retailer re-invents their supply chain.
The costs of the equipment required for an efficient logistical department are increasing due to customer demands of corporate responsiveness and global competition. A corporation can easily become mired in obsolete equipment as innovative technological advances proceed faster than the useful life of efficiency directives and equipment. A corporation with a myriad of regional warehouses and a fleet of vehicles is not only concerned with transportation, routing, and warehousing but also is burdened with government regulations regarding over-the-road movement and the increasing needs of inter-modal shipping to reach global markets. The needs of the firm can easily consume gross profits, in fact logistics accounts for 10-15% (6) of manufacturing costs in computer industries, especially when a firm is placed in a position of increasing spending due to an escalation of commitment toward constantly updating fleets and equipment.

Modern logistical experts are constantly in a state of flux and often overwhelmed by the sheer number of contacts a firm must use to fulfill the logistical needs of bringing products to market. Often by reaching an agreement with a contract logistics firm, cost reductions are achieved because of the expertise of the firm, LTL consolidation across industries by the firm, and special rate agreements contract logisticians may achieve with the consolidated purchasing power created by servicing several corporations.

Flexibility benefits realized by utilizing a contract logistics firm give a firm better responsiveness to the needs of their customers and their budgets. Flexibility benefits can be achieved by allowing a firm flexibility in geographic location, service offerings, and labor requirements.

Outsourcing the logistical needs of an organization can give a firm greater flexibility in the geographic placement of manufacturing and warehousing facilities. Without the need to focus upon the location of the customer and the distribution channel a corporation can place a manufacturing plant in any location they desire, and virtually eliminate the need for regional warehousing by utilizing the provider’s warehouse capabilities altogether.

Since customer responsiveness has become a necessity of today’s manufacturer, corporations must be able to quickly adjust and adapt to the requests of customers. Utilizing the
services of a contract logistics firm allows a manufacturer to quickly adjust to the service requirements of customers. Without the burden of a fixed logistical structure, and with the abundance of services offered by contract logistics firms such as Caliber, a corporation can satisfy the customer without the fear that they could lose the business to another manufacturer that can better satisfy the customers needs. Implementation of specialized services can be costly but outsourcing the specialized handling, labeling or delivery needs of a customer can eliminate the ultimate cost—an unhappy customer.

Flexibility regarding the labor force is a distinct benefit of outsourcing logistics needs. It may seem odd that greater logistical efficiency can be realized by eliminating the entire logistics department. The flexibility benefits of not having to manage the labor force, and efficiency achieved by a contract logistics firm that concentrates upon their core competency can provide significant benefits and a better focus upon the corporation’s core competency—making the product.

Focus on a corporation’s core competency is often at the expense of another corporate directive due to the limited resources of a company. For example, a greater degree of flexibility and customization is needed to satisfy the customer. The use of the personnel and resources needed to satisfy the customer are often diverted from other departments. The entire idea behind using a contract logistics firm is to let them concentrate on their core competency of logistics in order to free management and resources to focus upon manufacturing.

The resource and knowledge requirements required to expand into foreign and unfamiliar foreign markets is a constraint realized by many firms. Japan, for example, is known for its impenetrable distribution network due to the complexity of agreements and government requirements. Attempting to enter this market requires a huge dedication of resources and information. Most companies have succeeded or failed in this market through “trial and error.” Contract logistics firms have operated in markets such as Japan and have learned from previous “trial and error” experience. Expanding into one market may be a daunting task, but entering many markets simultaneously is extremely risky. Utilizing the experience and expertise of a contract
logistics firm may buffer the manufacturer from the potential pitfalls and resource requirements of capital, specialized personnel, and knowledge of distribution channels, not to mention language and cultural proclivities.

By utilizing a contract logistics firm a company can realize significant cost reductions, 30-40% in some firms, and achieve greater flexibility in the use of their fixed assets and labor management. Corporations can focus upon their core competencies and become more flexible in responding to the needs of the consumer thus increasing customer satisfaction. In the age of Total Quality Management (TQM), corporations realize that if they do not satisfy the customer someone else will. With the increased competitiveness caused by foreign competition and domestic efficiency, a corporation must be able to balance the resources of the firm with the needs of the customer.

DELL Computer Corporation

A Fortune 500 (R) company, DELL Computer Corporation is the world’s leading direct marketer of computer systems and one of the largest computer system manufacturers in the world. DELL designs and customizes products and services end-user requirements, and offers an extensive selection of peripherals and software through the DellWare (R) program.

DELL Computer has a global customer base, is experiencing explosive growth, and has a consumer driven cycle-time due to the make-to-order nature of much of its business. Owing to the competitive nature of the computer industry and the required technological innovation needed to compete, DELL has chosen to focus upon a niche of consumers that desire high quality customized computers. According to Fortune magazine, over 90% of DELL’s sales are built to order. DELL has broken the Ford mass production model, “they can have it in any color they want.....as long as it is black,” and focused upon mass customization.

The corporation has developed a lean manufacturing plant aimed at reducing cycle-time. DELL has created a manufacturing system that delivers a customized computer within 5 business
days. In fact, cycle-time is often quicker. DELL has reduced assembly line customized manufacturing to 7 hours, including a 5 hour testing period. After assembly and testing, the computer is packaged and loaded directly into a waiting truck within 2 hours and received by the consumer the next day. With this system, DELL manufacturers approximately 240 computers per hour and is branching into bulk orders for large retailers and institutions.

DELL fits the mold of the Masters study (22) because it is a very large firm, has an international distribution network, and a market structure that includes customized and bulk order computers for individuals, educational institutions, corporations, and government organizations. However, DELL has not chosen to implement DRP but has outsourced its logistical needs to Caliber Logistics (formerly Roadway Logistics Systems (ROLS)).

On February 15, 1995 DELL announced it’s global contract with Roadway, “considered the most comprehensive global contract for logistics services ever completed in the computer industry.”(6) According to Scott Flaig, Senior Vice-President of worldwide operations at DELL, “the flexibility and responsiveness that we can demonstrate to customers through a versatile, well-managed logistics capability is a significant competitive edge.”

**Caliber Logistics**

Caliber System, Inc., formerly known as Roadway Services, Inc., is a value-added provider of a broad range of transportation, logistics, and related information services. Caliber Logistics is a division of Caliber System, Inc. with revenues of $2.5 billion annually, and is a leading provider of contract logistics services with an unrivaled breadth of experience in designing, implementing and managing a wide range of customized logistics solutions. In a growing, dynamic market, Caliber Logistics is the only contract logistics provider with expertise across the entire supply chain. The company’s dedication to responsive service makes it a natural choice for customers with complex logistics requirements. (6)
Caliber manages the logistics needs of its customers by offering a full-range of services that include:

1. JIT Logistics Programs.
3. Total Transportation Management.
7. Returnable Container Management.

Caliber serves customers across industries such as high technology, automotive, manufacturing and retail worldwide. Developed in 1989, the ROLS Rite Routing Systems is designed to identify “intelligent” logistics solutions utilizing tools such as: route and mode optimization, leveraged transportation purchasing, and electronic freight bill processing. Customers can comprehensively integrate services offered by Caliber or customize service by choosing only those services desired.

ROLS performs the vital function of helping DELL Computer ensure the smooth flow of components into and through its manufacturing process, beginning with raw materials, all the way to the arrival of the system at the customer’s door. DELL maintains one of the lowest component inventory levels in the computer industry, which both helps the company stay at the leading edge of technology transitions, and ensures that savings from declining component costs can be passed on to customers.

Mr. Flaig noted that in most industries, average logistics cost as a percentage of manufacturing costs is about 10 - 15%. But in the computer industry--where product lifecycles are extremely short and customer demand for certain products is often volatile--logistics costs can be substantially higher. "Long-term success in our industry is largely dependent upon crisp execution of a comprehensive logistical plan," said Mr. Flaig. "This is especially true for a direct-relationship
company like DELL. Through several planned implementation phases, the agreement with ROLS will ultimately allow DELL to offer its customers a number of enhanced services, such as instant, on-demand electronic reporting of shipment status around the world. (6)

DELL recognized the need for services that could expand as rapidly as their market while remaining sensitive to the seasonal nature of the computer industry. DELL is no longer constrained by logistics capacity or burdened with idle distribution staff and equipment. DELL's finished goods are either at a Caliber Logistics warehouse near the Austin, TX plant or on the road moving toward the consumer. This has allowed DELL to better utilize the floor space within their manufacturing facility because the computers are loaded directly onto waiting trucks from the manufacturing line. The use of contract logistics allows DELL to focus on the needs of their customers and technological advances in their industry so that they can maintain a competitive advantage over larger computer manufacturers. By outsourcing their logistical needs they may now focus more sharply on manufacturing and corporate strategies.

Recommendations for a Successful Contract Logistics Relationship

1. Avoid proprietary information systems. Many contract logistics firms customize the information and computer needs of the relationship which could cause unfair leverage and disruption of the supply chain. A corporation must assure that when it outsources such a vital aspect of operations that they retain a degree of leverage for negotiating future contracts. A contract logistics firm that overhauls the information and computerization of a corporations logistics department should not use proprietary information that could not easily and quickly adapted to another firm or internalized in the event of an unhappy alliance.

2. Don't depend on the logistics provider to foresee the strategic needs of the firm. Contract logistics firms are expert logisticians, but not expert strategists. A corporation that does not have a complete and effective corporate strategy can not expect a contract logistics firm to understand the nuances of manufacturing within particular industries. Contract logistics firms
should focus upon their core competency of logistics and allow the corporation to focus upon the corporation’s competitive strategy. A contract logistics firm’s knowledge is limited to the supply chain and they can recommend logistical advantages but cannot forecast the effects of industry competition and corporate resource constraints.

3. Examine the cost and billing structure. Corporations that are considering outsourcing their logistics needs should carefully examine the operations of the contract logistics firm in order to ensure that the competitive advantage developed by outsourcing is not realized by competitors. Once a firm develops a successful logistics plan, the possibility that that plan can be modified and utilized to benefit another customer of the logistics firm exists. If this firm is a direct competitor the playing field could be leveled or a corporation could be subsidizing the logistical operations of the logistical firms customers.

4. Implement outsourcing in incremental amounts. Although 30% of manufacturers are outsourcing a percentage of the logistical aspect of their operations, only 2-3% have entirely outsourced their complete logistics needs. (7) Warehousing, transportation, consolidation, kitting, etc., should be implemented in phases in order to ensure the competency of the logistics firm and allow for corporate adaptation to the changes to ensure the effectiveness and competitiveness of the corporation are not affected.

5. Identify an acceptable service level. Many logistics firms have offices in the manufacturing plant and work with a designated team to ensure seamless operations between the corporation and the logistics firm. A comprehensive plan must be developed in order to ensure the relationship is meeting goals, and a system of controls must be in place to correct any problems.

6. Minimize human resource problems. Outsourcing the logistical operations of a corporation may displace or threaten many people within the corporation. The change in logistical operations can disrupt the operations of many of the firm’s core competency departments and cause problems throughout the corporation.

7. Identify a realistic cost/benefit relationship. Although there may be an increase in logistical efficiency and reduced logistics expenditures, there may be other variables that represent
a significant cost to the corporation. Corporations may realize the relationship does not adjust as quickly as an in-house logistics department or they may be unable to integrate the relationship into corporate functionality. This could create an adversarial relationship between departments or affect the company’s long-term strategic goals and drain the corporation’s profit margin.

8. Maintain contact with the customer. Since the direct relationship when the product is received by the customer has been replaced with a third party the potential for the loss of vital feedback from the customer may be lost. The relationship between customer and manufacturer must be leveraged in order to create a beneficial relationship based on more than just cost. Many contracts have been won and lost on factors other than lowest cost.

9. Design a realistic implementation schedule. The changes required to implement a logistics relationship are determined by the degree of service from the logistics firm and the technological adjustments to the corporation. A comprehensive schedule must be developed to ensure that the implementation process does not disrupt normal operations of the corporation. Long-term scheduling should include each stage of the implementation with consideration given to demand and the availability of resources such as capital and personnel.

7 Characteristics of Firms that Should Consider Contract Logistics

Seven characteristics of firms that should consider contract logistics have been identified by examining the nature of contract logistics and the benefits associated with successful implementation. Firms that have the need for logistical efficiencies and the ability to outsource the entire function have common characteristics. A model of these characteristics was developed from an analysis of the literature in order to assist other corporations with their decision to outsource logistics. The more characteristics a firm has, the more likely they are to have already outsourced major logistics functions. These characteristics are;

1. **Corporations with international markets.** Corporations that have one or more international markets typically outsource the logistics function of operations at least in countries
with problems associated with moving goods across borders. These problems include using correct documentation, product identification for tariff purposes and packaging restrictions. If an international market is part of the corporate marketing strategy, the firm decides whether the logistics part of the venture is needed in-house for specific reasons such as security, or can be outsourced to a contract logistics provider with knowledge of the country. Careful attention is paid to providers with specific country expertise because of the divergent import/export restrictions of each country regardless of regional similarities. Motorola used this type of advantage by outsourcing its logistical needs to a contract logistics firm to service its four hubs in Asia—Shanghai, Hong Kong, Beijing, and Singapore. (7)

2. Corporations in rapidly changing industries. Corporations that are in industries such as technology face constant industry change that could affect the strategic position of the firm. These corporations need the flexibility afforded by cost reductions by outsourcing their logistics needs so they can focus their resources on core competencies such as R&D and Marketing. These corporations use logistics firms to improve customer service and responsiveness by quickly responding to customer needs for replacement parts or product repairs. DELL Computer is a prime example of a company in a rapid change industry that wishes to focus upon making computers and servicing customers, not logistics.

3. Corporations with a complex distribution network. Corporations with a myriad of customers with divergent demands in disparate regions requires the service flexibility offered by a contract logistics firm to adjust to the customized labeling, shipping, and timing requirements of each customer’s service needs. The ability to service the customer regardless of complexity creates the opportunity to competitive domination of an industry that can not provide comparable service in today’s society, both domestically and abroad.

4. Companies with a complex market structure. Corporations with a market that is constantly changing need to be able to adapt to the swings in demand and the changing nature of their customers. The advantages offered by outsourcing logistics give the corporation an
opportunity to support their customers regardless of geographic location and service needs as the nature and volume of customer demand changes.

5. Corporations that have variable demand patterns. Corporations that have variable demand structures, or due to seasonality, outsource their logistics functions in order to reduce the expense of fixed cost equipment and personnel. This allows logistics activities to become activity based thus allowing the firm to remain price competitive and develop a cost leadership approach. Digital Equipment’s manager of European distribution states, “For all computer companies, sales go up and down so quickly that, if you owned all the resources to move products from source to consumption, you would be continuously hiring employees and laying them off, buying trucks and getting rid of them. A logistics contractor, however, could redistribute resources according to the needs of other customers.” (18)

6. Corporations that have time sensitive products. Corporations with products that easily perish or become obsolete outsource their logistics function so they can reduce the risk of a spoiled or obsolete inventory. These corporations vitality depends upon the ability of the corporation to get the products to market quickly. Efficient supply chain management has resulted in an estimated $30 billion in cost savings in the grocery industry.

7. Corporations with size/volume that can support outsourcing. Corporations that have a sales volume and sufficient distribution traffic that allows the firm to realize a cost benefit outsource so they can reduce costs and focus upon core competencies. These firms also have the required personnel resources necessary to ensure the implementation of an outsourcing strategy does not disrupt operations.

Conclusion

Computerized solutions to the complexity of manufacturing and distribution such as MRP and DRP offer firms significant advantages and efficiencies over firms who are not utilizing electronic means of tracking and planning the needs of a manufacturing operation. These tools
were developed to answer the questions of the classic manufacturing model and identify the most efficient ways of producing a product and getting it to market. Although these systems have inherent advantages they carry with them significant operational requirements such as accurate inputs and substantial training efforts. Modern technology has made these tools available to manufacturing concerns but has created a significant burden upon firms who wish to efficiently utilize and integrate them into corporate functionality. Problems exist when a firm’s technological solutions cannot grow with the firm or cannot be customized to the changing needs required in today’s marketplace. Many firms are looking for solutions to the constraints of DRP by outsourcing their logistics operations to contract logistics firms. These firms offer significant resources and expertise that can reduce costs, increase customer service, provide greater flexibility, and adjust to the demand needs of customers.

It becomes evident that firms that possess any or all of 7 characteristics are excellent candidates for outsourcing their logistics departments to realize significant benefits. Although there may be other reasons for outsourcing a corporations logistics operations, a typical firm must have the following attributes:

1. International markets.
2. Exist in a rapid change industry
3. A complex distribution network
4. A complex market structure
5. Variable demand
6. Time sensitive products
7. Size/volume necessary to support outsourcing logistics in order to realize the following benefits:

1. Cost reduction
2. Increased flexibility
3. Focus on core competencies
4. Facilitated expansion into unfamiliar markets
5. Increased customer service levels

An example of DELL Computer’s global logistics partnership with Caliber Logistics was used to demonstrate that firms that produce either make-to-order or make-to-stock can utilize the services of a contract logistics firm. DELL Computer was also used as an example of a company identified by the Masters study as a potential candidate for the adoption of DRP but who chose not to adopt the system and instead chose Caliber Logistics as an alternative measure in order to create a system that would be flexible to the growing needs of the firm and provide significant cost reductions without sacrificing customer service--two objectives that are assumed to be countervailing.

References


